

Regular Article

Chronic, increasing, and decreasing peer victimization trajectories and the development of externalizing and internalizing problems in middle childhood

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Abstract

Children's peer victimization trajectories and their longitudinal associations with externalizing and internalizing problems were investigated from Grades 2 to 5. Secondary data analysis was performed with the Early Childhood Longitudinal Study (ECLS-K-2011; $n = 13,860$, $M_{age} = 8.1$ years old in the spring of Grade 2; 51.1% male, 46.7% White, 13.2% African-American, 25.3% Hispanic or Latino, 8.5% Asian, and 6.1% other or biracial). Children who experienced high and persistent levels of peer victimization (high-chronic victims) exhibited co-occurring externalizing and internalizing problems. Moreover, among high-chronic victims, boys had a more pronounced increase in their externalizing trajectories, and girls had greater increases in their social anxiety trajectories. In contrast, those with decreasing peer victimization across time exhibited signs of recovery, particularly with respect to their social anxiety. These findings elucidated how chronic, increasing, and decreasing victims exhibited distinct patterns in the co-occurring development of their externalizing and internalizing problems, and how findings varied depending on the form of problem behavior and by child sex.

Keywords: externalizing problems; internalizing problems; peer victimization; problem behaviors; social anxiety

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Experiences of bullying and peer victimization in childhood are highly prevalent and have been reported among diverse populations of children worldwide. Consequently, researchers and educators have recognized bullying and peer victimization as major public health concerns, and have devoted considerable resources towards prevention and intervention efforts. Although peer victimization is highly prevalent, there is also considerable variability in its developmental progression. Middle childhood, in particular, is a period of substantial differentiation among children who experience victimization, such that some children are persistently (i.e., chronically) victimized during this period, whereas others exhibit more transient (e.g., short-term) peer victimization, characterized by either declining peer victimization or its late onset (Ladd et al., 2017; Oncioiu et al., 2020).

Some of the primary concerns relating to peer victimization are rooted in its concurrent and prospective associations with children's social and emotional adjustment. Consistent with the principle of multifinality (Cicchetti & Rogosch, 1996), there is considerable evidence that peer victimization is associated with multiple forms of problem behaviors (Casper & Card, 2017; Reijntjes et al., 2010, 2011); however, there remains a need to further investigate how variations in the chronicity and discontinuity of peer

victimization may be associated with distinct patterns of behavioral adjustment. More specifically, we evaluated the following questions: do children who exhibit declining victimization in middle childhood show signs of recovery in their behavioral problems, or continue to exhibit problem behaviors even as their victimization subsides (i.e., a residual effect)? Is chronic victimization associated with increasing problem behavior symptomology or does it maintain children's pre-existing behavioral problems? Do these associations vary when comparing externalizing and internalizing problems? And finally, would there be a differential pattern of associations when examining boys and girls separately?

To address these questions, the primary aims of the present study were to identify distinct trajectories of peer victimization in middle childhood, and to assess how these trajectories are associated with co-occurring changes in children's problem behaviors. Although similar aims have been examined in prior research (Boivin et al., 2010; Goldbaum et al., 2003; Ladd et al., 2019), there have been some inconsistent findings across studies, as well as several potential methodological limitations including the use of non-representative samples, single-informant measures of peer victimization, and cross-sectional or short-term longitudinal designs (e.g., across one year). To address these gaps, we used multi-informant data including self- and teacher-reports of children's peer victimization and problem behaviors, collected during Grades 2–5, from the Early Childhood Longitudinal Study (ECLS-K-2011), a large-scale, nationally-representative project conducted in the United States. We examined several forms of problem behaviors reflecting

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children's externalizing problems characterized by aggressive, disruptive, and oppositional behaviors, and their internalizing problems characterized by social anxiety, depressive symptoms, and withdrawal. Moreover, the use of a large sample allowed us to examine whether child sex functioned as a moderating factor, which is less feasible in studies based on smaller sample sizes (e.g., due to insufficient statistical power).

We were interested in examining these developmental processes in middle childhood for several reasons. First, there is substantial differentiation in children's peer victimization experiences during this developmental period. Indeed, this may be a critical period in which distinct long-term developmental pathways emerge (e.g., chronic, increasing, or decreasing peer victimization trajectories; see Ladd et al., 2017; Oncioiu et al., 2020). Second, this is a period in which children's peer relationships and friendships exhibit increased importance and salience, a developmental shift that continues into their adolescence (LaFontana & Cillessen, 2010). Third, sex differences in children's peer relationships and behavioral adjustment may also become more pronounced during this period (Rose & Rudolph, 2006).

Development of peer victimization

Investigators have primarily taken two approaches to examine the development of peer victimization. The first approach has focused on examining normative (i.e., average or mean level) developmental trends over time, and the second has been on identifying heterogeneity (i.e., individual differences) in the developmental trajectories of peer victimization. With respect to the former, several longitudinal studies have reported a decline in victimization in middle childhood, and across the elementary school years (Haltigan & Vaillancourt, 2014; Shell et al., 2014; Sugimura et al., 2017). Moreover, two separate long-term investigations reported normative mean-level declines in children's self-reported peer victimization across the formal schooling years (i.e., from ages 6 to 17; Ladd et al., 2017; Oncioiu et al., 2020). Although there tends to be a normative decline, person-centered methods (e.g., growth mixture modeling, latent class growth analysis) have illuminated substantial individual differences in the timing (e.g., age or developmental period), magnitude (e.g., frequency, intensity, or severity), and duration (e.g., chronicity versus discontinuity) of children's peer victimization trajectories.

More specifically, researchers have identified three to five classes or subgroups of children who exhibit distinct peer victimization trajectories. Studies relying on different methods (e.g., informant types and measures) and developmental periods generally confirm that most children experience low levels of victimization which are either stable or declining across time (Biggs et al., 2010; Boivin et al., 2010; Brendgen et al., 2016; Geoffroy et al., 2018; Ladd et al., 2017; Oncioiu et al., 2020). Moreover, several subgroups of children have been identified with maladaptive victimization trajectories. Chronic victims are characterized by high and persistent victimization across time and prevalence rates have ranged from 2.1% to 24.0% (Biggs et al., 2010; Ladd et al., 2017). In contrast to chronic victims, decreasing victims experience high initial levels of victimization which are less stable and substantially decline across time. Researchers have used varying labels to characterize this class including childhood-limited (Oncioiu et al., 2020), early (Ladd et al., 2017), high-decreasing (Brendgen et al., 2016), or decreasing victims (Biggs et al., 2010), and prevalence estimates range from 5.9% to 31.0%. Finally, increasing victims

are characterized by having moderate initial rates of victimization followed by subsequent increases across time with prevalence estimates ranging from 4.0% to 29.8% (Biggs et al., 2010; Ladd et al., 2017; Oncioiu et al., 2020).

Notably, the prevalence rates for these groups have varied considerably across studies. Although the reason for this discrepancy is unclear, methodological differences pertaining to measurement (e.g., source, informant or forms of victimization assessed), sampling, and developmental timing may be contributing factors. In consideration of some of the potential limitations of prior research (e.g., concerns about sample-specific findings and generalizability, and a reliance on single informant designs to assess peer victimization), in the current study, we aim to provide robust conclusions pertaining to the prevalence of peer victimization in middle childhood (i.e., Grades 2–5) by utilizing a large nationally representative sample which was diverse in terms of race, ethnicity, socioeconomic status and geographic location, and which incorporated multiple sources of peer victimization (i.e., teacher- and self-reports).

Peer victimization and children's sociodemographic characteristics

There is also evidence that children's sociodemographic characteristics may be associated with their victimization trajectory classes. With respect to sex, males have a higher likelihood of being chronic and decreasing victims relative to females (Brendgen et al., 2016; Ladd et al., 2017; Oncioiu et al., 2020); however, some investigators have reported non-significant sex differences (Biggs et al., 2010; Goldbaum et al., 2003). With respect to SES, children from lower SES backgrounds have been reported to exhibit higher levels of victimization (Due et al., 2009; Tippett & Wolke, 2014); however, there are also mixed findings pertaining to this link (Hong & Espelage, 2012; Oncioiu et al., 2020). To the extent that aggressive and socially dominant behaviors may function to maintain social status differences among children in different socioeconomic classes, it is conceivable that socioeconomic inequalities may contribute to children in lower socioeconomic classes being more susceptible to victimization (Due et al., 2009). A similar line of reasoning could be applied to examining racial and ethnic differences. That is, African American, Latino, and Asian American children may not only be more likely to experience discrimination (Greene et al., 2006), but social and racial-ethnic inequities may also contribute to these groups being at greater risk, compared to their White peers, for peer victimization. However, findings in support of this viewpoint have been inconsistent, and meta-analytic findings indicate small differences in rates of peer victimization across racial and ethnic subgroups (Vitoroulis & Vaillancourt, 2015).

Notably, much of the existing research on sociodemographic differences has not directly examined peer victimization trajectories across time, and it is plausible that inconsistent findings may be due, in part, to the use of nonrepresentative and smaller samples which may lack sufficient demographic diversity or statistical power. Thus, given the resource of a large and diverse nationally representative dataset, one important aim of this study was to investigate potential sociodemographic differences. Considering the available evidence, we hypothesized that boys, low SES, and underrepresented racial and ethnic groups would exhibit a higher likelihood of being classified into one of the elevated victimization trajectory classes.

Peer victimization and children's externalizing and internalizing problems

One of the critical distinctions between chronic and decreasing victims is that rates of victimization diverge over time despite comparable baseline levels. In contrast to these two groups, increasing victims tend to exhibit lower baseline levels of victimization, but across time, their levels of victimization become more comparable to chronic victims (and more distinguishable from decreasing victims). We posit that these distinct victimization trajectories are associated with variations in the continuity and discontinuity of children's externalizing and internalizing problems over time. Consequently, we propose multiple conceptual models which account for the potential continuity (i.e., chronicity) or discontinuity of peer victimization and guide our predictions reflecting the co-occurring development of victimization and problem behaviors. More specifically, we evaluated the same conceptual models for chronic and increasing victims who were more persistently victimized, and alternative models for decreasing victims who exhibited discontinuity and declines in victimization across time. Expanding on these models, we also considered how the associations may vary depending on the specific form of problem behavior (i.e., externalizing or internalizing problems) and by child sex.

Chronic and increasing victims: chronic stress versus fear conditioning perspectives

According to chronic stress perspectives, the long-term effects of stress exposure are a function of duration and magnitude, and a stressor becomes increasingly detrimental as it persists over time and compromises more adaptive functioning (Dohrenwend & Dohrenwend, 1981; Johnson, 1988; Kochenderfer-Ladd & Wardrop, 2001; Ladd et al., 2017; Lin & Ensle, 1989). Consequently, the stressors associated with peer victimization (e.g., harassment and exclusion, marginalization, lack of belonging) are likely to compound when victimization experiences are enduring over long periods of time (e.g., multiple years).

Consistent with this perspective, we propose a test of competing models which have distinct implications regarding the continuity of problem behaviors among chronic and increasing victims. In the *escalation model* (Figure 1a), chronic and increasing victims exhibit *increasing* problem behaviors as their victimization experiences persist (among chronic victims) or increase (among increasing victims). An alternative hypothesis derived from the *maintenance model* (Figure 1b) is that children in these two groups exhibit early behavioral problems which persist (i.e., remain stable) across childhood. Differences may also emerge between chronic and increasing victims. For instance, children who are chronically victimized may exhibit higher baseline levels of problem behaviors which may remain relatively stable across time (e.g., a ceiling effect) in contrast to increasing victims who exhibit fewer baseline problem behaviors, but a late-onset escalation that co-occurs with their increasing victimization experiences (Kochenderfer-Ladd, & Wardrop, 2001; Rueger et al., 2011). Thus, the maintenance model may be more applicable to chronic victims and the escalation model to increasing victims. Alternatively, the greater severity and duration of victimization among chronic victims could be associated with higher baseline levels of problem behaviors and a greater escalation in problem behaviors as the potential impact of victimization compounds over time.

Although the escalation and maintenance models provide unique predictions regarding the *trajectories* of problem behaviors

across time, both models also assume that chronic and increasing victims have higher *baseline* levels of problem behaviors compared to low victims, with chronic victims exhibiting the highest levels. This assumption is consistent with a diathesis-stress perspective, according to which children's early individual (e.g., genetic, temperamental, dispositional) vulnerabilities and maladaptive behavioral styles contribute to their risks for peer victimization (Brendgen et al., 2008; Shell et al., 2014; Swearer & Hymel, 2015). That is, children with early victimization experiences are likely to also exhibit maladaptive behavioral styles which may function as a diathesis (i.e., vulnerability) to being victimized, and in turn, experiencing victimization may function as a stressor which maintains or exacerbates their early problem behaviors. In contrast, low victims are expected to exhibit lower baseline rates, and a normative decline in problem behaviors (Ladd et al., 2019; Tremblay, 2010).

Considering extant theory and empirical evidence, we also evaluated the premise that there may be distinct developmental processes depending on the form of problem behavior being investigated. With respect to internalizing problems, findings from prior studies support both the escalation and maintenance models among chronic victims. In a long-term investigation that examined the development of socially withdrawn and anxious behaviors from Kindergarten to Grade 12 (Ladd et al., 2019), chronic victims exhibited persistent increases in withdrawal across time (supporting an escalation model); while their social anxiety exhibited continuity (consistent with a maintenance model). Increasing victims, in contrast, were not significantly different from low victims in terms of withdrawal, and differences in social anxiety were small at the outset of the study but gradually became more pronounced over time. In another investigation (Boivin et al., 2010) on withdrawal in middle childhood (Grades 3–6), chronic victims exhibited a slight non-linear increase in withdrawal which was more pronounced in the earlier grades. Increasing victims exhibited a more stable withdrawal trajectory across time and were significantly more withdrawn than low victims, but less withdrawn than chronic victims.

Taken together, the findings of these two studies indicate that among chronic victims, the patterns of co-occurring internalizing problems, including their withdrawn and social anxiety trajectories, were consistent with the escalation and maintenance models; however, these patterns may also depend on the normative (mean-level) changes in specific forms of internalizing problems. That is, when social anxiety exhibited a decline among low victims, it was relatively stable among chronic victims. In contrast, withdrawal appeared to be stable among low victims and exhibited an escalation among chronic victims. The findings for increasing victims indicated that they had lower internalizing trajectories than chronic victims. Differences compared with low victims were mixed, but indicated increasing victims had higher internalizing behaviors (both in terms of baseline levels and trajectories).

With respect to externalizing problems, findings from previous studies reveal two alternative theoretical perspectives may be applicable. On the one hand, similar to internalizing problems, the chronic stress perspective may also apply to patterns of externalizing behaviors. For instance, Goldbaum et al. (2003) reported that chronic victims exhibited continuity in their externalizing problems (i.e., aggressive and bullying behaviors) across a 1-year period beginning in Grade 5, and increasing victims exhibited increasing externalizing problems, findings which were consistent with the maintenance and escalation models, respectively. On the other

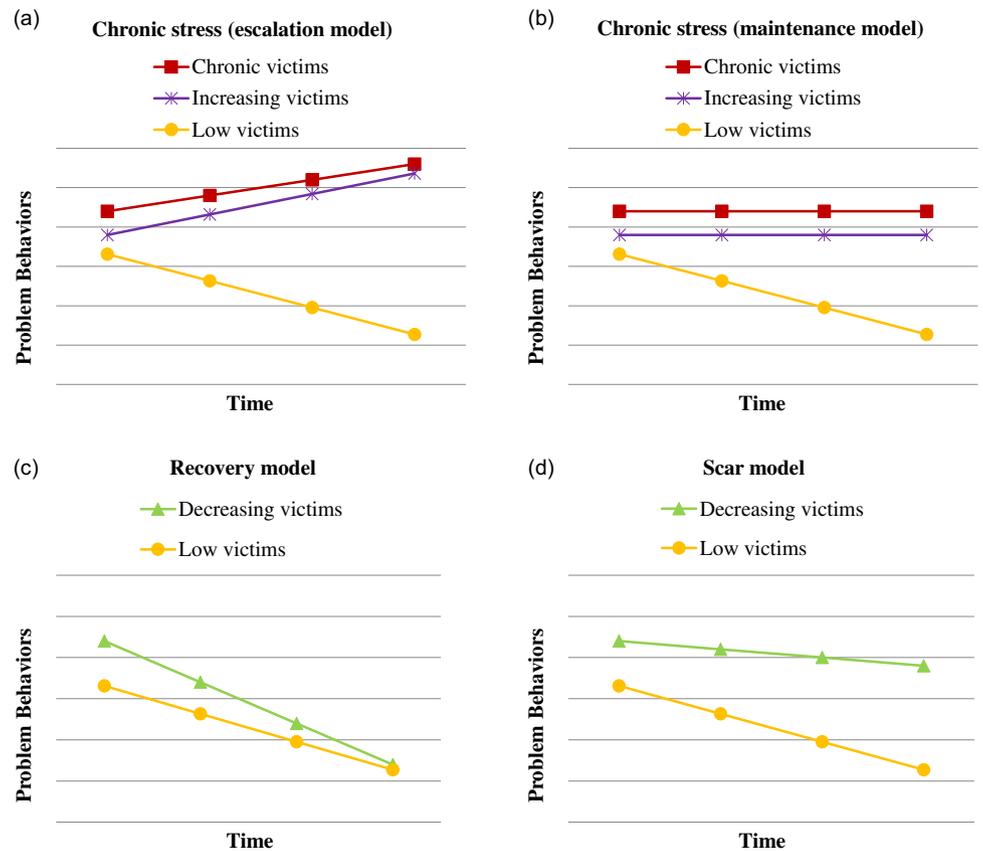


Figure 1. Alternative conceptual models examining the development of problem behaviors of chronic, increasing, and decreasing victims.

hand, examining a somewhat younger sample and longer time frame (i.e., from Grades 3 to 6), Boivin et al. (2010) found that chronic and increasing victims exhibited declining aggression in middle childhood. Consequently, these investigators posited that the differential patterns pertaining to internalizing and externalizing problems may be reflective of a *fear-conditioning process* which discourages chronic and increasing victims from acting aggressively, but is associated with increasing social anxiety and withdrawal as children seek to avoid (albeit unsuccessfully) subsequent victimization experiences.

Considering these competing perspectives, we evaluated several alternative hypotheses. First, applying a chronic stress perspective, children's externalizing and internalizing trajectories may be persistently elevated for chronic and increasing victims; however, patterns of escalation versus maintenance may vary for chronic versus increasing victims and also depends on the overall normative changes in problem behaviors during middle childhood. Second, in consideration of a fear-conditioning perspective, externalizing and internalizing problems may exhibit distinct patterns of continuity and change over time such that trajectories consistent with the escalation or maintenance models are more likely to be observed for internalizing problems, in contrast to externalizing problems which would decline.

Furthermore, a more nuanced evaluation of these competing perspectives may be gleaned by considering sex differences. Despite evidence that there are sex differences in peer victimization and problem behaviors, previous studies which have relied on smaller sample sizes may not have had sufficient statistical power to comprehensively investigate these differences. In the current study, we were particularly interested in examining sex differences in middle childhood as it may reflect an important transitional

period in which these differences begin to emerge and become more pronounced. Throughout this period, girls place a greater priority on their friendships than boys (LaFontana & Cillessen, 2010), exhibit higher levels of self-disclosure and self-consciousness, and may experience earlier pubertal maturation. Collectively, these biological, social, and social-cognitive factors may contribute to sex differences in problem behaviors (e.g., greater rates of internalizing problems in girls and externalizing problems in boys), as well as how children may be impacted by victimization (Rose & Rudolph, 2006).

Sex differences were hypothesized to emerge such that girls who are chronic and increasing victims would exhibit high baseline levels of internalizing problems which persist across time, or a more pronounced pattern of escalation. Sex differences in externalizing problems were also considered, and several alternative hypotheses were evaluated. First, considering the implications of the chronic stress perspective—and the greater propensity for peer victimization and externalizing behaviors in boys – it is possible that the escalation and maintenance models may be more likely to emerge among boys who were chronic and increasing victims. Second, considering that the frequency of externalizing problems is lower in girls, and internalizing problems are higher, it is possible that fear conditioning processes may be more applicable to girls who are chronic and increasing victims, and contribute to girls in these groups exhibiting primarily internalizing problems with declining externalizing trajectories.

Decreasing victims: recovery versus scar perspectives

To investigate the developmental course of externalizing and internalizing problems for decreasing victims, we propose two

alternative conceptual models which highlight the potential discontinuity of peer victimization across time. Applying a recovery model (Figure 1c), it is postulated that children who have early experiences of victimization which subsequently decline also exhibit co-occurring improvements in their behavioral adjustment (i.e., declining problem behaviors which become more comparable to the levels observed in low victims). That is, once the stressors associated with peer victimization are reduced, children are likely to benefit from a more positive peer social context and more supportive peers (Kochenderfer-Ladd & Wardrop, 2001). In contrast to a recovery perspective which implies that the effects of peer victimization are temporal or transient, a *scar* model (Figure 1d) posits that the effects of early victimization on children's problem behaviors may persist beyond the period of actual experience, leading to residual effects on their problem behaviors (Ladd et al., 2017). Thus, support for a scar model would be obtained if declines in victimization are co-occurring with relatively stable and elevated levels of problem behaviors which persist even as victimization is decreasing.

Collectively, existing research has been more focused on internalizing than externalizing problems. With respect to internalizing problems, the findings indicate that children with decreasing victimization exhibit some degree of recovery (i.e., reduction), but the possibility of residual effects persist, particularly for social anxiety in late childhood. For instance, in a long-term investigation (from Kindergarten to Grade 12) on desisting victimization and internalizing problems (Ladd et al., 2019), decreasing victims did not have significantly higher baseline (Kindergarten) levels of social withdrawal or anxiety than low victims, but their social anxiety trajectories varied across time. More specifically, low victims had a more accelerated decline in social anxiety compared to decreasing victims in the earlier grades, and by late childhood (i.e., Grade 4), it appeared that decreasing victims had relatively higher social anxiety. Notably, these investigators did not explicitly examine sex moderation, which may have provided additional insights regarding patterns of recovery among decreasing victims.

For instance, findings based on a sample of early adolescents (in Grades 7 and 8) revealed sex differences in patterns of recovery among decreasing victims (Rueger et al., 2011). For girls with decreasing victimization, their internalizing problems (i.e., anxiety and depression) persisted, consistent with a scar model. For boys, in contrast, there was a decline in internalizing problems consistent with the recovery perspective. In the current study, we evaluated whether a similar pattern would emerge in middle childhood, and hypothesized that girls with decreasing victimization would be less likely than boys to show signs of recovery in their internalizing problems, perhaps reflecting greater sensitivity to earlier victimization experiences.

Published studies which evaluated the recovery and scar models as they pertain to externalizing problems in middle childhood have been rare, and we only identified one investigation (i.e., Goldbaum et al., 2003) which examined late childhood and early adolescence (i.e., Grades 5–7), but did not explicitly examine sex differences. Consistent with a recovery model, decreasing victims exhibited declines in bullying across time, such that their levels of bullying were significantly lower than chronic victims, and similar to low victims by the final assessment wave about one year later. However, they maintained significantly higher levels of aggression than low victims, and similar levels of aggression to chronic victims. Considering these mixed findings and limited evidence pertaining more specifically to middle childhood, the current study aims to contribute to this area of research by examining whether

patterns of co-occurring externalizing trajectories among decreasing victims are similar for boys and girls.

Study aims and hypotheses

This study had three overarching aims. The first aim was to identify distinct developmental trajectories of peer victimization in middle childhood (i.e., Grades 2–5) using both self- and teacher-reports of peer victimization. We hypothesized at least four distinct peer victimization trajectories. These classes were expected to be characterized as chronic (stable high victimization), increasing (i.e., low to moderate initial levels followed by a significant increase), decreasing (i.e., high initial victimization followed by a significant decline), and low victims (i.e. stable low victimization). The second aim was to examine the sociodemographic characteristics (i.e., sex, SES, race, and ethnicity) of the identified trajectory classes. We hypothesized that boys, children with low SES, and underrepresented racial and ethnic groups were more likely to exhibit maladaptive peer victimization trajectories. The third aim was to assess how variations in children's victimization trajectories are associated with their problem behaviors across time (i.e., baseline levels and trajectories). Towards this end, we evaluated multiple alternative hypotheses (previously discussed) which were delineated by the escalation, maintenance, fear conditioning, recovery and scar models and which accounted for the interactions among multiple factors including children's distinct peer victimization trajectory classes, the differential effects for externalizing and internalizing problems and child sex.

Method

Participants

Data for this study were drawn from the ECLS-K class of 2010–2011 (ECLS-K:2011; Tourangeau et al., 2019). Implemented by the National Center for Education Statistics, the ECLS-K:2011 recruited a nationally representative sample of children who began Kindergarten in the 2010–2011 academic year. Approximately 18,174 children (51.1% male, 48.7% female) from about 1310 schools across the United States were recruited into the longitudinal project. The sample was approximately 46.7% White, 13.2% African American, 25.3% Hispanic or Latino, 8.5% Asian, and 6.1% other or biracial. The median family income was between \$50,000 to \$55,000. The average age of participants was 5.6 years old ($SD = .40$) when they enrolled in the study in Kindergarten. For the aims of this study, the primary constructs were collected annually (four waves) when participating children were in the spring of Grades 2–5 ($M_{age} = 8.1$ years old in the spring of Grade 2; $SD = .40$), although some of the demographic measures were collected during earlier waves. Accounting for attrition, this study relied on data from approximately 13,860 children who had at least one wave of peer victimization data available.

Procedure

The ECLS-K:2011 includes multi-informant data collected from children and their parents and teachers. The present study utilizes data from teacher-reports (four waves; collected annually from Grades 2 to 5), child self-reports (three waves, collected annually from Grades 3 to 5), and parent-reports (i.e., demographic information). Data collection for the ECLS-K:2011 was performed once or twice annually from Kindergarten to Grade 5, however the assessment schedule varied across time. The ECLS-K:2011 used a complex, dual frame, three stage sampling

design. Geographical sampling units, schools, and children were selected via a clustered, multi-staged, stratified sampling strategy. Approximately 1710 counties spread over the US were the primary sampling units (PSU). Of these, the 10 largest PSUs and a stratified random sample of the remaining based on geographic region, size, per capita income, race/ethnicity distribution and metropolitan area were used to get data from ninety counties/clusters. In the second stage, public and private schools that enrolled kindergarten students on the basis of size, urbanicity (or religious/non-religious affiliations for private schools) were selected with selection probability proportional to kindergarten enrollment. In the third stage, students enrolled in each of the selected schools were sampled, with an oversampling of Asian, Native Hawaiian, and Pacific Islanders to ensure adequate participation of these subgroups (for more specific details on the sampling procedures, see Tourangeau et al., 2019).

Measures

Peer victimization

Teachers reported on children's physical, verbal, and relational peer victimization annually (from Grades 2 to 5) based on four items adopted from Espelage and Holt's (2001) bullying and peer victimization scale. Items were scored on a 5-point Likert scale (1 = "never" to 5 = "very often") with higher scores indicating greater levels of victimization. Teachers were asked to report how often other students had "pushed, shoved, slapped, hit, or kicked this student" (physical victimization), "teased, made fun of, or called this student names" (verbal victimization), "told lies or untrue stories about this student" (relational victimization), and "intentionally excluded or left this student out from playing with them" (relational victimization). This measure had adequate reliability at each wave (Cronbach's alphas .82–.84).

Children's self-reports of peer victimization were collected annually from Grades 3 to 5 (self-report assessments were not collected before Grade 2). The four items used to assess experiences of physical, verbal and relational peer victimization were very similar in wording and content to those used in the teacher reports. Items were scored on a 5-point Likert scale (1 = "never" to 5 = "very often"), and a scale score was derived from taking the mean of these four items, with higher scores indicating greater levels of victimization (Cronbach's alphas .74–.81).

Externalizing and internalizing problems

Each year (from Grades 2 to 5) teachers completed the Social Skills Rating System (SSRS), a validated and widely used instrument in educational and psychological research (Gresham & Elliott, 1990; Walthall et al., 2005). The externalizing (six items) and internalizing (four items) problems subscales were used in the current study. The externalizing subscale included items reflecting aggressive (e.g., fighting), impulsive, non-compliant, and oppositional behaviors (e.g. arguing, disturbs ongoing activities). The internalizing subscale included items reflecting anxious, withdrawn and depressive symptoms. A mean score was estimated from the individual items with higher scores indicative of higher levels of problem behaviors. Because the SSRS is a copyright-protected instrument, the individual items were not available in the public use datafiles. However, the internal consistency reported by the NCES (see Tables 3–9 in Tourangeau et al., 2019) indicated adequate reliability (externalizing problems: alphas = .87–.88; internalizing problems: alphas = .78–.79).

Social anxiety

Social anxiety was assessed each year (from Grades 3 to 5) based on items completed in a self-administered questionnaire using audio computer-assisted self-interview (audio-CASI) technology. To assess fear of negative evaluation, an aspect of social anxiety, children reported on three items adopted from the Social Anxiety Scale for Children – Revised Scale (La Greca & Stone, 1993), using a five-point scale (1 = *Never* to 5 = *Very Often*): "I worry about what other kids think of me", "I worry that other kids do not like me", and "I'm afraid other kids will not like me". This scale exhibited adequate reliability (alphas: .83–.88).

Socioeconomic status

SES was included as a control variable and computed based on parent's/guardian's education level, household income, and occupational prestige scores. Occupational prestige scores were derived using codes from the 1989 General Social Survey (GSS), such that different occupations are assigned different prestige scores and higher scores reflect more prestigious occupations (e.g., service occupations = 34.95 and physicians = 77.5; $M = 44.13$ and 42.64 for both parents/guardians in the current sample).

Data analysis

The overall analysis consisted of four parts. First, preliminary analyses were performed to examine descriptive statistics, bivariate correlations and missing data. Second, confirmatory factor analysis (CFA) was conducted to examine longitudinal measurement invariance and measurement invariance by sex, and race-ethnicity. Third, growth mixture modeling was used to identify differential peer victimization trajectories from Grades 2 to 5, as well as their socio-demographic characteristics. Fourth, multiple-group latent growth modeling was performed to estimate baseline levels, and trajectories of externalizing and internalizing problems based on the peer victimization trajectories (identified in the previous step) and by child sex.

Models were specified in Mplus 8.0 (Muthén & Muthén, 2017) using maximum likelihood estimation with robust standard errors (MLR). To account for the nested sampling design (e.g., children sampled from within specific schools), the "type = mixture complex" command in Mplus was used which provides adjusted estimates of the standard errors, taking into account correlations among observed scores within the same school. Moreover, because of the complex sampling design and the nationally representative composition of this sample, the ECLS-K-2011 manual provides guidelines on sampling weights (Tourangeau et al., 2019). All models were estimated using the recommended sampling weight variable (*W9C29P_9T290*), and all estimates reported in the manuscript (unless otherwise noted) are weighted estimates.

Results

Descriptive statistics and bivariate correlations

Preliminary analyses were performed to examine descriptive statistics (see Table 1) and bivariate correlations (see Table 2) of the primary constructs. Descriptive statistics indicated a small decline across time in mean levels of self-reported peer victimization, externalizing problems and social anxiety, and relative mean-level stability in teacher-reported victimization and internalizing problems. The bivariate correlations indicated that all of the constructs exhibited moderate stability across time ($r_s = .31-.61$, $p < .01$). Within-wave correlations indicated that teacher- and self-reported peer victimization were positively and moderately correlated ($r_s = .27-.33$, $p < .01$).

Table 1. Descriptive statistics and scale reliabilities

Variable	<i>N</i>	Min.	Max	<i>M</i>	<i>SD</i>	α
Peer victimization (G2) (TR)	12,688	1.00	5.00	1.44	0.56	0.84
Peer victimization (G3) (TR)	11,924	1.00	5.00	1.39	0.53	0.82
Peer victimization (G4) (TR)	11,027	1.00	5.00	1.43	0.56	0.83
Peer victimization (G5) (TR)	10,384	1.00	5.00	1.41	0.56	0.84
Peer victimization (G3) (SR)	12,859	1.00	5.00	2.24	0.96	0.74
Peer victimization (G4) (SR)	12,066	1.00	5.00	2.06	0.93	0.79
Peer victimization (G5) (SR)	11,406	1.00	5.00	1.98	0.92	0.81
Externalizing problems (G2)	12,657	1.00	4.00	1.71	0.62	0.87
Externalizing problems (G3)	11,898	1.00	4.00	1.68	0.61	0.87
Externalizing problems (G4)	11,000	1.00	4.00	1.63	0.59	0.87
Externalizing problems (G5)	10,359	1.00	4.00	1.61	0.59	0.88
Internalizing problems (G2)	12,577	1.00	4.00	1.58	0.52	0.78
Internalizing problems (G3)	11,830	1.00	4.00	1.60	0.53	0.78
Internalizing problems (G4)	10,923	1.00	4.00	1.59	0.54	0.79
Internalizing problems (G5)	10,294	1.00	4.00	1.57	0.52	0.79
Social anxiety (G3)	12,835	1.00	5.00	2.41	1.20	0.83
Social anxiety (G4)	12,046	1.00	5.00	2.18	1.12	0.84
Social anxiety (G5)	11,405	1.00	5.00	2.15	1.16	0.88
SES (K)	12,909	-2.33	3.60	-0.06	0.78	-

Note. G = Grade, TR = teacher report, SR = self-report, K = kindergarten. Socioeconomic status (SES) is reported as a standardized score.

Missing data analysis

About 23.1% ($n = 4193$) of children had no available peer victimization or problem behavior data from Grades 2 to 5 and were not included in the analyses. Remaining missing data were handled in Mplus using full information maximum likelihood (FIML) estimation. This approach is advantageous compared to more traditional missing data techniques because it includes participants in the analyses if they have at least one wave of available data. The sample size to examine children's victimization trajectories consisted of 76.2% ($n = 13,860$) of children who had at least one wave of available data on the self- or teacher-reported peer victimization measures as well as their school ID data (to account for school clustering). Subsequent analyses examining children's problem behaviors included those who had available data on victimization, child sex, and at least one wave of available data on their problem behaviors (for externalizing problems: $n = 12,448$, internalizing problems: $n = 12,449$, and social anxiety: $n = 12,445$).

Missing data analyses were performed to examine the associations between children's sex, SES, race, and ethnicity, and the likelihood of having missing data. Results showed that there were no significant sex differences. Missing data were associated with SES, race and ethnicity; however, these differences were small in magnitude. More specifically, children with lower SES and African American children had greater rates of missing data across time ($\eta^2 = .001-.002$ for SES; $\eta^2 = .006-.018$ for African American), and Hispanic children were less likely to have missing data ($\eta^2 = .001-.009$). In terms of the racial and ethnic breakdown, African American, Hispanic and Asian American children comprised 13.2%, 25.3%, and 8.5% of the total sample ($n = 18,174$), respectively and 11.4%, 27.0%, and 8.6% of the sample used in

the current analyses. In order for FIML to provide accurate and unbiased parameter estimates, observable causes of missing data should be included within the specified models (Enders, 2010). Consequently, irrespective of the small effect sizes, models included SES, race and ethnicity as covariates. Moreover, all analyses incorporated the use of sampling weights, which account for missing data due to non-response (Tourangeau et al., 2019).

Measurement invariance

To examine longitudinal measurement invariance, a series of CFA models were estimated in which the configural, metric, scalar, and partial scalar invariance assumptions were examined. The model fit indices are reported in the Supplemental Materials (Table S1) along with a more detailed explanation of how these analyses were performed. The results indicated that teacher-reported peer victimization demonstrated longitudinal scalar invariance. Self-reported peer victimization and social anxiety demonstrated partial scalar invariance. Notably, because the externalizing and internalizing subscales were adopted from a copyrighted measure (SSRS), item-level data were not available in the public-use data files to perform invariance analyses.

Analyses were also performed to assess multiple-group measurement invariance in peer victimization for different demographic groups based on child sex, race and ethnicity. Results indicated that self-reported peer victimization exhibited scalar invariance between boys and girls, and among African American, Hispanic and Asian children (see Table S2 for model results and a more detailed discussion). Teacher-reported peer victimization demonstrated scalar invariance for the racial and ethnic groups, and partial scalar invariance by child sex.

Table 2. Bivariate correlations among study variables

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Peer victimization (G2) (TR)																	
2. Peer victimization (G3) (TR)	.338**																
3. Peer victimization (G4) (TR)	.306**	.357**															
4. Peer victimization (G5) (TR)	.313**	.331**	.375**														
5. Peer victimization (G3) (SR)	.243**	.273**	.257**	.249**													
6. Peer victimization (G4) (SR)	.228**	.273**	.309**	.268**	.516**												
7. Peer victimization (G5) (SR)	.218**	.265**	.285**	.330**	.449**	.567**											
8. Externalizing problems (G2)	.569**	.383**	.373**	.373**	.280**	.274**	.282**										
9. Externalizing problems (G3)	.381**	.556**	.396**	.374**	.289**	.289**	.282**	.614**									
10. Externalizing problems (G4)	.353**	.377**	.569**	.394**	.273**	.301**	.282**	.577**	.607**								
11. Externalizing problems (G5)	.345**	.345**	.380**	.567**	.256**	.266**	.310**	.540**	.558**	.604**							
12. Internalizing problems (G2)	.366**	.197**	.195**	.214**	.134**	.130**	.138**	.326**	.170**	.166**	.153**						
13. Internalizing problems (G3)	.188**	.402**	.216**	.223**	.151**	.163**	.176**	.197**	.321**	.174**	.162**	.351**					
14. Internalizing problems (G4)	.161**	.228**	.406**	.227**	.139**	.175**	.165**	.180**	.189**	.311**	.174**	.318**	.373**				
15. Internalizing problems (G5)	.182**	.207**	.228**	.431**	.151**	.154**	.195**	.186**	.179**	.184**	.305**	.316**	.345**	.381**			
16. Social anxiety (G3)	.117**	.139**	.138**	.146**	.488**	.328**	.293**	.127**	.129**	.111**	.111**	.105**	.134**	.124**	.128**		
17. Social anxiety (G4)	.110**	.130**	.152**	.135**	.290**	.463**	.335**	.117**	.102**	.113**	.092**	.116**	.133**	.163**	.150**	.416**	
18. Social anxiety (G5)	.097**	.127**	.133**	.161**	.263**	.340**	.493**	.118**	.094**	.090**	.097**	.124**	.147**	.154**	.185**	.351**	.510**

Note. G = Grade, TR = teacher report, SR = self report.

** $p < .01$.

Table 3. Fit indices for models examining children's peer victimization trajectories

Model	LL	AIC	BIC	SABIC	Entropy	LMR-LRT	ρ
1-Class	-95,871.14	191,758.28	191,818.57	191,793.15	-	-	-
2-Class	-79,180.21	158,390.41	158,503.46	158,455.79	0.90	32,889.20	<.001
3-Class	-76,406.78	152,855.55	153,013.82	152,947.09	0.89	5451.59	<.001
4-Class	-75,360.92	150,775.84	150,979.33	150,893.53	0.75	2055.79	0.72
5-Class	-74,838.79	149,743.58	149,992.29	149,887.42	0.76	1998.30	0.24
6-Class	-74,422.51	148,923.01	149,216.95	149,093.01	0.76	818.27	0.30

Note. LL = Loglikelihood, AIC = Akaike information criteria, BIC = Bayesian information criteria, SABIC = Sample size adjusted Bayesian information criteria, LMR-LRT = Lo-Mendell-Rubin likelihood ratio test. Model in bold indicates the selected model.

Developmental trajectories of peer victimization (aim 1)

Growth mixture modeling was used to examine children's peer victimization trajectories from Grades 2 to 5. A second-order growth mixture model (SOGMM) was specified based on the modeling approach proposed by Grimm and Ram (2009). These models incorporated the peer victimization data from teacher- and children's self-reports as indicators (i.e., mean scores by informant and wave; see Figure S1 for an illustrative example of the path model). The models were first specified including intercept, linear and quadratic effects, and their corresponding variance and covariance estimates. However, the inclusion of class-specific variance and covariance estimates among the latent growth factors resulted in convergence and estimation problems. Alternatively, covariance-pattern growth mixture modeling (see McNeish & Harring, 2020, 2021) was also examined in which class-specific residual variances and covariances among the indicators were specified. With some modifications, these models exhibited stable convergence and replication. To compare models with varying numbers of classes (i.e., 1 to 6 classes), multiple criteria including the Akaike information criterion (AIC), Bayesian information criterion (BIC), sample-size adjusted BIC (SABIC), entropy and Lo-Mendell Rubin likelihood ratio test (LMR-LRT) were examined to determine the optimal class solution (Nylund et al., 2007; Tofghi & Enders, 2008).¹ In addition to the model fit indices, we also plotted the trajectory classes and evaluated class distinguishability, interpretability, and model parsimony (Ram & Grimm, 2009).

The model fit indices did not clearly indicate the optimal model solution (see Table 3). The information criteria (AIC, BIC, SABIC) decreased as the number of classes increased, thus favoring models with greater classes. In contrast, the LMR-LRT was statistically significant for the 2- and 3-class models, but not for models with additional classes. Because the information criteria and LMR-LRT did not converge on a single model, trajectory plots were utilized to better ascertain model interpretability and parsimony. The 3-class model identified high-, moderate- and low-stable classes. In the 4-class model, high-stable and low-stable classes were identified similar to the 3-class model, but the moderate-stable class previously identified appeared to be further differentiated into moderate-increasing and moderate-decreasing classes. The 5-class model was similar to the 4-class model, but further differentiated the high-stable class into two classes, one with high-stable (i.e., chronic) victimization and the second exhibiting a high-decreasing trajectory. The 6-class model was similar to the 5-class model but resulted in an additional class which was relatively small (i.e., less than 2% of children).

¹The Bootstrap likelihood ratio test (BLRT) is not available for complex survey data in *Mplus* 8.0.

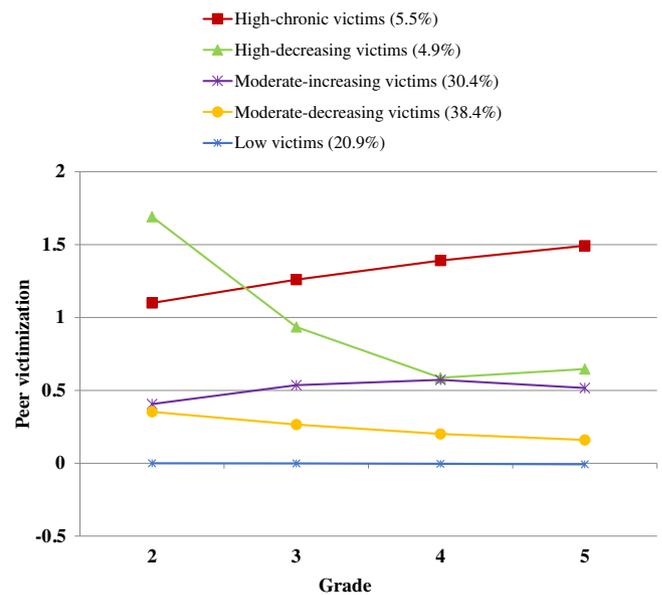


Figure 2. Children's estimated peer victimization trajectories (and class percentages) based on 5-class solution.

Comparing these models, the 5-class model was selected as the optimal solution for several reasons. First, all of the classes identified in this model were distinguishable and interpretable. Second, the results of this model were highly consistent with findings from previous studies. Finally, all of the classes exhibited an adequate size (in contrast to the 6-class model) such that the smallest class consisted of 4.9% of children. This model is illustrated in Figure 2 (see Supplemental Table S3 for parameter estimates). About 5.5% of children ($n = 759$) had persistently high rates of peer victimization (labeled *high-chronic victims*), 4.9% ($n = 673$) had high initial rates of peer victimization which declined across time (labeled *high-decreasing victims*), 30.4% ($n = 4213$) had moderate initial rates of victimization in Grade 2 which increased slightly over time (labeled *moderate-increasing victims*), 38.4% ($n = 5324$) had moderate initial rates of victimization which declined over time (labeled *moderate-decreasing victims*), and 20.9% ($n = 2892$) had persistently low peer victimization (labeled *low victims*).

Sociodemographic characteristics of the peer victimization trajectory classes (aim 2)

Covariate effects were added to the 5-class peer victimization model using the manual ML 3-step approach in *Mplus* (Asparouhov & Muthén, 2014; Nylund-Gibson et al., 2014;

Table 4. Covariate effects for peer victimization trajectory classes

	Low victims (reference class)			High-chronic victims (reference class)		
	Est	<i>p</i>	OR	Est	<i>p</i>	OR
<i>High-chronic victims</i>						
Gender (female)	-1.18	0.000	0.31			
African American	1.38	0.000	3.98			
Hispanic/Latino	-1.21	0.000	0.30			
Asian American	-0.19	0.717	0.82			
SES	-1.25	0.000	0.29			
<i>High-decreasing victims</i>						
Gender (female)	-0.89	0.000	0.41	0.28	0.361	1.33
African American	1.65	0.000	5.19	0.27	0.603	1.30
Hispanic/Latino	0.04	0.916	1.04	1.25	0.011	3.47
Asian American	-2.94	0.257	0.05	-2.74	0.313	0.06
SES	-0.73	0.000	0.48	0.53	0.051	1.70
<i>Moderate-increasing victims</i>						
Gender (female)	-0.75	0.000	0.47	0.43	0.064	1.53
African American	1.39	0.000	4.02	0.01	0.972	1.01
Hispanic/Latino	-0.45	0.007	0.64	0.76	0.026	2.13
Asian American	-0.71	0.008	0.49	-0.51	0.396	0.60
SES	-0.93	0.000	0.40	0.33	0.075	1.39
<i>Moderate-decreasing victims</i>						
Gender (female)	-0.62	0.000	0.54	0.55	0.018	1.74
African American	0.60	0.022	1.83	-0.78	0.024	0.46
Hispanic/Latino	0.03	0.826	1.03	1.24	0.000	3.46
Asian American	-0.26	0.146	0.77	-0.06	0.907	0.94
SES	-0.11	0.093	0.89	1.14	0.000	3.13

Nylund-Gibson et al., 2019; Vermunt, 2010). More specifically, the covariate effects examined the associations among child sex, SES, race and ethnicity and the peer victimization trajectory classes (see Table 4). Children with higher SES and girls had a lower likelihood of being high-chronic, high-decreasing and moderate-increasing victims than low victims (i.e., reference group). African American children had a higher likelihood of being in the high-chronic, high-decreasing and moderate-increasing classes than the low victim class. Hispanic children had a lower likelihood of being in the high-chronic and moderate-increasing classes than the low victim class. Asian American children had a lower likelihood of being in the moderate-increasing class than the low victim class. Using high-chronic victims as the reference class, the results indicated that there were not significant sociodemographic differences when comparing high-chronic victims with high-decreasing and moderate-increasing victims with the exception of Hispanic children exhibiting a higher likelihood of being in the high-decreasing and moderate-increasing classes.

Peer victimization trajectories and children's problem behaviors (aim 3)

Unconditional growth models

A series of unconditional latent growth models were specified to examine the growth processes observed in children's externalizing

and internalizing problems and social anxiety. Overall model fit was considered adequate if RMSEA < 0.06, and SRMR < 0.08 (Hu & Bentler, 1999).² In the models for teacher reports of externalizing and internalizing problems which included four waves of data, we assessed whether adding a quadratic factor (to account for non-linear growth) improved model fit compared to a linear growth model by conducting Satorra-Bentler scaled chi-square difference tests (Satorra, 2000; see Supplemental Table S4). In models for social anxiety which relied on three waves of child adjustment data, linear growth models were estimated. For all constructs, the linear and quadratic growth models exhibited adequate model fit. For externalizing problems, the scaled chi-square difference test was not statistically significant, and a closer examination of the mean and variance estimates indicated that the mean for the quadratic effect was approximating zero ($M = .002$); thus, the linear growth model was used in subsequent analyses. This model indicated that there was a small normative (mean-level) decline in externalizing problems from Grades 2 to 5 (see Supplemental Table S5). For internalizing problems, the scaled chi-square difference test was statistically significant and favored the quadratic model. Thus, this model was used in subsequent analyses and indicated a small increase in internalizing problems from Grades 2 to 3

²CFI was not examined because software packages use an inappropriate baseline model to compute the CFI in growth curve models (Wu et al., 2009).

Table 5. Estimates for growth models examining children's problem behavior trajectories by peer victimization trajectory class and child sex

	Boys									Girls								
	Intercept			Linear			Quadratic			Intercept			Linear			Quadratic		
	Est	SE	p	Est	SE	p	Est	SE	p	Est	SE	p	Est	SE	p	Est	SE	p
<i>Externalizing behaviors</i>																		
High-chronic	2.60	0.06	0.000	0.08	0.03	0.008				2.56	0.10	0.000	-0.06	0.03	0.091			
High-decreasing	2.74	0.09	0.000	-0.22	0.03	0.000				2.50	0.09	0.000	-0.22	0.03	0.000			
Moderate-increasing	2.00	0.03	0.000	0.01	0.01	0.628				1.72	0.03	0.000	0.00	0.01	0.861			
Moderate-decreasing	1.54	0.02	0.000	-0.03	0.01	0.000				1.37	0.03	0.000	-0.04	0.01	0.000			
Low	1.28	0.02	0.000	0.00	0.01	0.760				1.21	0.02	0.000	-0.01	0.01	0.408			
<i>Internalizing behaviors</i>																		
High-chronic	1.95	0.07	0.000	0.42	0.12	0.000	-0.11	0.04	0.005	2.07	0.11	0.000	0.02	0.26	0.954	0.03	0.08	0.731
High-decreasing	2.33	0.10	0.000	-0.57	0.10	0.000	0.13	0.03	0.000	2.53	0.14	0.000	-0.53	0.22	0.018	0.11	0.07	0.115
Moderate-increasing	1.62	0.02	0.000	0.15	0.04	0.000	-0.04	0.01	0.002	1.61	0.04	0.000	0.23	0.06	0.000	-0.06	0.02	0.000
Moderate-decreasing	1.42	0.03	0.000	-0.14	0.03	0.000	0.03	0.01	0.016	1.45	0.04	0.000	-0.14	0.04	0.000	0.04	0.01	0.003
Low	1.25	0.03	0.000	0.07	0.03	0.017	-0.02	0.01	0.027	1.32	0.02	0.000	0.04	0.03	0.215	-0.01	0.01	0.364
<i>Social anxiety</i>																		
High-chronic	2.90	0.16	0.000	0.21	0.12	0.076				3.22	0.26	0.000	0.44	0.15	0.003			
High-decreasing	2.75	0.31	0.000	-0.56	0.19	0.003				3.62	0.30	0.000	-0.85	0.24	0.000			
Moderate-increasing	2.74	0.06	0.000	-0.09	0.05	0.041				3.08	0.09	0.000	0.02	0.10	0.866			
Moderate-decreasing	1.78	0.04	0.000	-0.15	0.02	0.000				2.04	0.06	0.000	-0.18	0.04	0.000			
Low	1.86	0.05	0.000	-0.06	0.03	0.050				2.13	0.05	0.000	-0.04	0.03	0.232			

followed by a small decrease in Grades 3–5. For social anxiety, the linear growth model indicated a decrease in social anxiety from Grades 3 to 5.

Multiple-group conditional growth models

Using the manual ML 3-step approach (Nylund-Gibson et al., 2019), we estimated multiple-group conditional growth models using the peer victimization trajectory class assignments and child sex as the nominal grouping variables. This approach allowed us to examine how children's peer victimization trajectories were associated with their co-occurring problem behavior trajectories, and if these associations were moderated by children's sex. These models also included SES, race and ethnicity as control variables. An illustrative example of the path diagram of these models is shown in Supplemental Figure S2.

To assess moderation by child sex, two nested models were estimated for each problem behavior measure. In the first model, the means of the latent growth factors were estimated freely for boys and girls. In the second model, the means were constrained to be equal for boys and girls. A scaled likelihood ratio test (LRT; Satorra, 2000) was performed for each nested model comparison, and if statistically significant, this indicated that imposing equality constraints for boys and girls resulted in a decline in model fit. For all problem behavior constructs, the scaled LRT indicated that the freely estimated models exhibited significantly better fit than the constrained models (for externalizing behaviors: *scaled LRT* = 235.84, *df* = 10, *p* < .001; for internalizing behaviors: *scaled LRT* = 37.60, *df* = 15, *p* < .001; for social anxiety: *scaled LRT* = 92.11, *df* = 10, *p* < .001). Thus, it appeared that child sex

was a significant moderating factor. Mean estimates for the latent growth factors are reported in Table 5.

Furthermore, to assess differences among the peer victimization trajectory classes within each sex group, the *Model Constraint* command in *Mplus* was used in conjunction with the multiple-group conditional growth models to specifically compare differences in the mean estimates of the latent growth factors. Rather than compare all possible combinations of groups, we selected six comparisons that were of most substantive interest (see Table 6): high-chronic versus high-decreasing, moderate-increasing, and low; high-decreasing versus moderate-increasing and low; and moderate-increasing versus low.

Externalizing problems

The group comparisons (Table 6) indicated that for boys and girls, high-chronic victims exhibited higher baseline (intercept) levels than moderate-increasing and low victims, but not compared to high-decreasing victims. High-decreasing victims (boys and girls) exhibited higher baseline levels compared to moderate-increasing and low victims, and moderate-increasing victims (boys and girls) also exhibited higher baseline levels of externalizing problems compared to low victims. Group comparisons also indicated significant differences in terms of the externalizing trajectories (i.e. linear effects). To facilitate the interpretation of these differences, the estimated trajectories were plotted by victimization trajectory class and child sex (see Figure 3). The results indicated that sex differences emerged with respect to the linear trajectories of high-chronic victims, such that boys exhibited a significant increase in externalizing problems in contrast to girls who

Table 6. Estimates examining differences among the peer victimization trajectory classes by child sex

	Boys									Girls								
	Intercept			Linear			Quadratic			Intercept			Linear			Quadratic		
	Est	SE	p	Est	SE	p	Est	SE	p	Est	SE	p	Est	SE	p	Est	SE	p
<i>Externalizing behaviors</i>																		
HC vs. HD	-0.14	0.12	0.245	0.30	0.04	0.000				0.07	0.15	0.670	0.17	0.05	0.000			
HC vs. MI	0.60	0.07	0.000	0.07	0.03	0.025				0.84	0.10	0.000	-0.06	0.04	0.131			
HC vs. L	1.32	0.06	0.000	0.08	0.03	0.015				1.35	0.10	0.000	-0.05	0.04	0.129			
MI vs. HD	-0.74	0.10	0.000	0.23	0.04	0.000				-0.78	0.10	0.000	0.22	0.03	0.000			
MI vs. L	0.72	0.04	0.000	0.00	0.02	0.829				0.51	0.04	0.000	0.00	0.01	0.817			
HD vs. L	1.45	0.09	0.000	-0.22	0.03	0.000				1.29	0.09	0.000	-0.22	0.03	0.000			
<i>Internalizing behaviors</i>																		
HC vs. HD	-0.38	0.13	0.004	0.99	0.15	0.000	-0.24	0.05	0.000	-0.45	0.17	0.007	0.54	0.40	0.181	-0.08	0.12	0.507
HC vs. MI	0.33	0.07	0.000	0.27	0.13	0.038	-0.08	0.04	0.086	0.46	0.12	0.000	-0.21	0.25	0.395	0.09	0.08	0.252
HC vs. L	0.70	0.07	0.000	0.35	0.12	0.005	-0.09	0.04	0.029	0.76	0.11	0.000	-0.02	0.26	0.928	0.04	0.08	0.649
MI vs. HD	-0.71	0.11	0.000	0.72	0.11	0.000	-0.17	0.04	0.000	-0.92	0.14	0.000	0.75	0.25	0.003	-0.17	0.08	0.027
MI vs. L	0.37	0.04	0.000	0.08	0.04	0.066	-0.02	0.02	0.276	0.29	0.04	0.000	0.19	0.06	0.003	-0.05	0.02	0.006
HD vs. L	1.08	0.11	0.000	-0.64	0.11	0.000	0.15	0.03	0.000	1.21	0.14	0.000	-0.56	0.22	0.012	0.11	0.07	0.092
<i>Social anxiety</i>																		
HC vs. HD	0.14	0.40	0.722	0.76	0.26	0.003				-0.40	0.42	0.333	1.28	0.25	0.000			
HC vs. MI	0.15	0.17	0.376	0.30	0.13	0.018				0.13	0.31	0.670	0.42	0.20	0.032			
HC vs. L	1.04	0.17	0.000	0.27	0.12	0.026				1.09	0.27	0.000	0.47	0.15	0.002			
MI vs. HD	-0.01	0.34	0.979	0.46	0.21	0.028				-0.53	0.35	0.131	0.87	0.32	0.006			
MI vs. L	0.89	0.08	0.000	-0.03	0.06	0.589				0.96	0.10	0.000	0.05	0.11	0.617			
HD vs. L	0.89	0.32	0.004	-0.49	0.19	0.010				1.49	0.30	0.000	-0.81	0.24	0.001			

Notes: HC = high-chronic, HD = high-decreasing, MI = moderate-increasing, L = low.

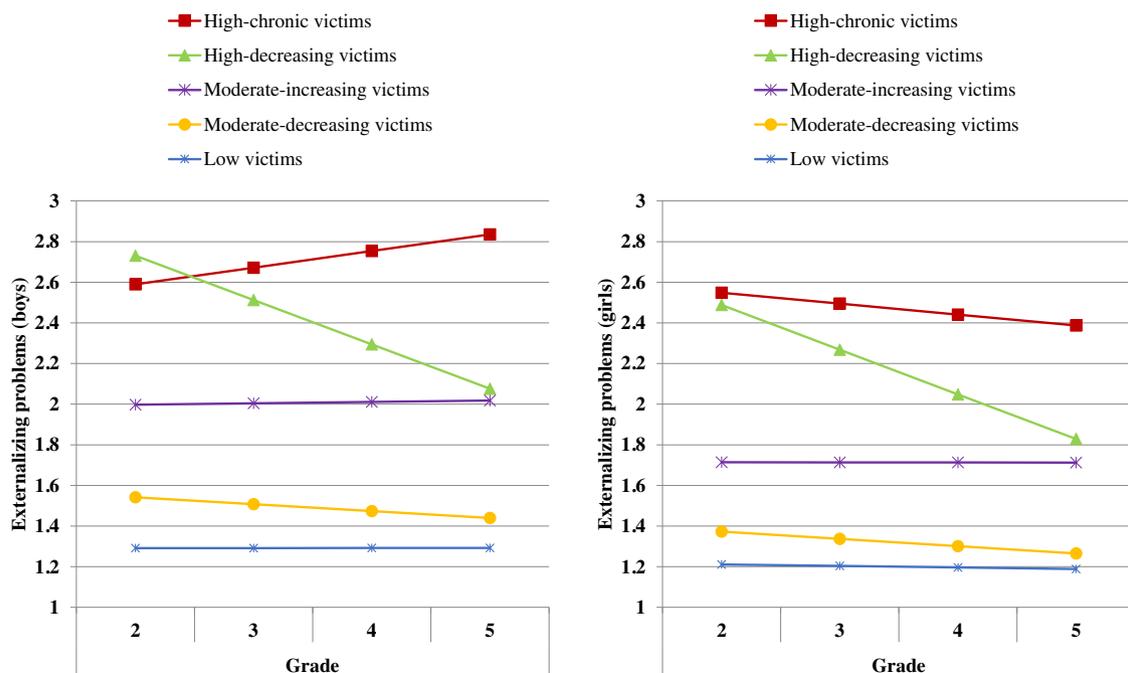


Figure 3. Trajectories of children's externalizing problems by peer victimization trajectory class and child sex.

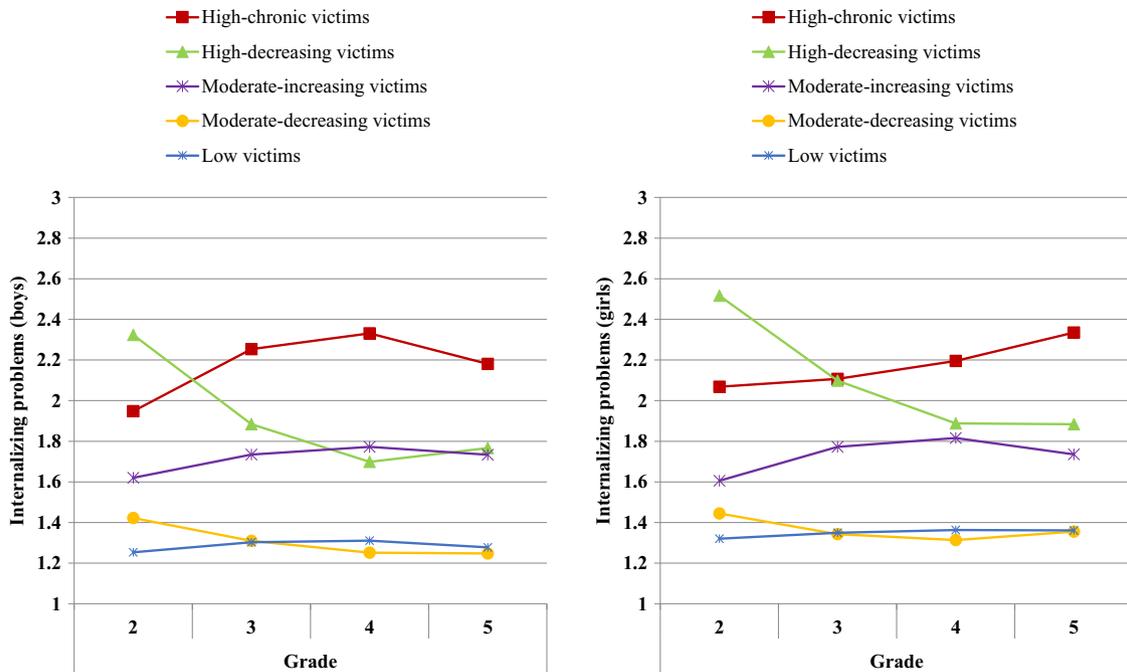


Figure 4. Trajectories of children's internalizing problems by peer victimization trajectory class and child sex.

exhibited relatively stable (and slightly declining) externalizing problems. Among high-decreasing victims, both boys and girls exhibited a significant decreasing trajectory, and among moderate-increasing victims, linear trajectories were stable across time.

Internalizing problems

High-chronic victims (boys and girls) exhibited higher baseline levels of internalizing problems than moderate-increasing and low victims, but significantly lower levels compared to high-decreasing victims (Table 6). High-decreasing victims (boys and girls) exhibited higher baseline levels compared to moderate-increasing and low victims, and moderate-increasing victims (boys and girls) exhibited higher baseline levels compared to low victims. The linear and quadratic slope estimates (see Table 5 and Figure 4) also indicated sex differences in the trajectories of high-chronic victims. Specifically, boys exhibited a significant non-linear increasing trajectory characterized by a sharper increase in internalizing problems in the earlier grades. The trajectory for girls also appeared to be increasing slightly across time; however, these effects were not statistically significant. Among high-decreasing victims, boys and girls exhibited a significant decreasing trajectory, and among moderate-increasing victims, boys and girls exhibited a significant non-linear increasing trajectory characterized by a sharper increase in internalizing problems in the earlier grades.

Social anxiety

High-chronic, high-decreasing and moderate-increasing victims (boys and girls) exhibited higher baseline levels of social anxiety than low victims, but not compared with each other (Table 6). The linear slope estimates (see Table 5 and Figure 5) also indicated sex differences in the trajectories of high-chronic victims, such that girls exhibited significant increasing social anxiety trajectories, and boys exhibited a less pronounced increase in social anxiety which was not statistically significant ($p = .08$). Among high-decreasing victims, boys and girls exhibited significant decreasing social anxiety trajectories. Modest sex differences emerged among

moderate-increasing victims such that boys exhibited a slight decline in social anxiety across time, but rates of social anxiety were stable among girls.

Discussion

This study makes several contributions to existing research on children's peer victimization. To our knowledge, this is the first study to use multi-informant peer victimization data collected on a nationally representative sample to provide robust and generalizable findings with respect to the developmental trajectories of peer victimization in a diverse sample of American elementary school-aged children. Roughly 40% of children experience some degree of peer victimization in elementary school (i.e., were identified as either high-chronic, high-decreasing or moderate-increasing victims), and about 5% of children are chronically victimized, characterized by persistently high levels of peer victimization. The findings also demonstrated how children's peer victimization trajectories varied by child sex, SES, race and ethnicity, and in particular, greater risks among boys, low SES and African American children.

The findings provided insights on how variations in the chronicity and desistance of victimization were associated with the development of children's problem behaviors such that high-chronic, high-decreasing and moderate-increasing victims exhibited distinct patterns. Moreover, one of the primary contributions of this study was further elucidating how these associations vary by the form of problem behavior and child sex. Specifically, among high chronic victims, the internalizing and externalizing trajectories for boys exhibited a pattern reflecting escalation, beyond their elevated baseline levels. Girls in the chronic victimization class exhibited continuity in their externalizing trajectories, but an escalation in their social anxiety trajectories. Thus, high-chronic victims exhibited a broad range of co-occurring internalizing and externalizing problems, counter to the notions of a fear conditioning process. New insights were also gained with respect to high-

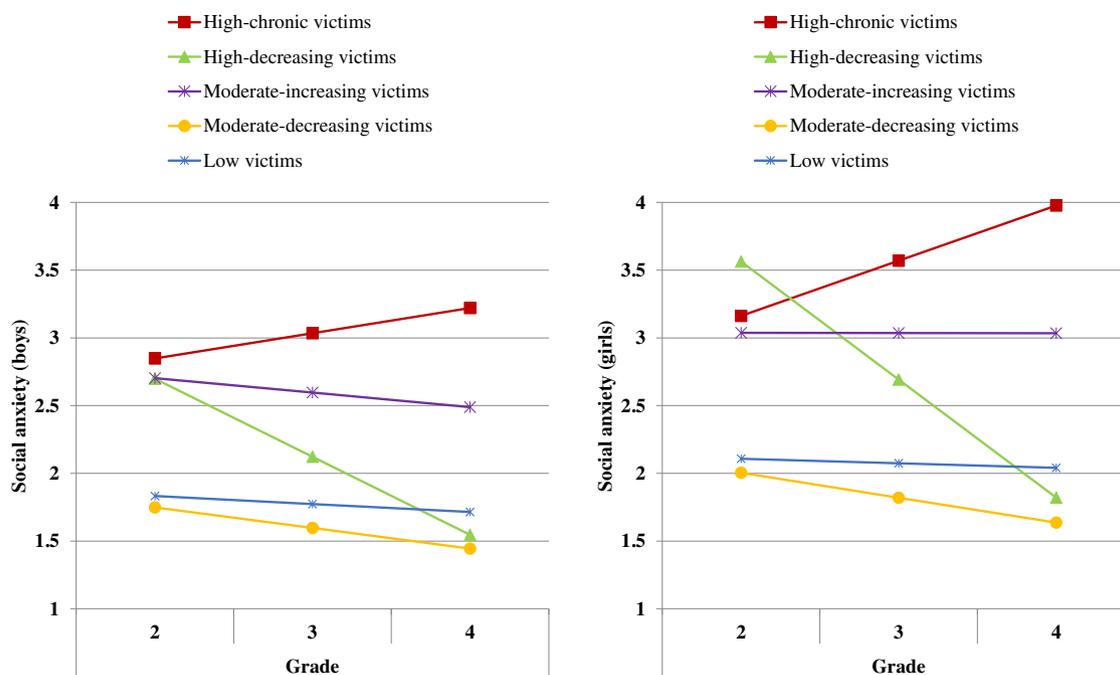


Figure 5. Trajectories of children's social anxiety by peer victimization trajectory class and child sex.

decreasing victims. More specifically, support was garnered for the recovery model, particularly with respect to girls' and boys' social anxiety trajectories. Nonetheless, high-decreasing victims continued to exhibit externalizing and internalizing problems, despite reductions in victimization.

Developmental trajectories of peer victimization

Children's peer victimization trajectories were identified using a multiple-informant approach consisting of annual assessments of teacher- and self-reported peer victimization. Although the model fit indices did not converge on an optimal solution, the five-class model was selected in consideration of its clear interpretability, model parsimony, and its comparability with prior studies that have applied a similar methodological approach (Boivin et al., 2010; Ladd et al., 2017; Oncioiu et al., 2020). Moreover, consistent with our initial hypotheses, several distinct trajectory classes emerged with elevated levels of peer victimization; however, there was considerable variability with respect to the duration, magnitude and timing of children's victimization trajectories. Roughly one in ten children (10.4%) had high *initial* rates of peer victimization at the outset of this study. As expected, children with high initial rates of peer victimization exhibited heterogeneity in their trajectories. About half of these children (or 5.5% of the total sample) were identified as high-chronic victims and exhibited persistently high victimization across time. The other half, labelled high-decreasing victims, exhibited a subsequent decline across time. Another 30% of children were characterized by relatively moderate rates of peer victimization which increased slightly through elementary school (a moderate-increasing class). This class was similar, both in terms of prevalence and form, to a moderate-emerging class identified by other investigators (Ladd et al., 2017; Oncioiu et al., 2020). Although children in this class had relatively lower rates of victimization at the outset of the study compared to high-chronic and high-decreasing victims, their rates of peer victimization remained relatively moderate and were

comparable to the high-decreasing class by Grade 5. Consistent with expectations, most children (i.e., close to 60%) were identified to be in one of two classes with relatively low peer victimization. One of these classes consisted of children with stable low levels of victimization, and the second consisted of children with moderate baseline levels which subsequently decreased.

Taken together, although the results were mostly consistent with prior findings in terms of the form (trajectory patterns) identified for each class, there were differences in prevalence rates. Prevalence rates for children in the chronic, increasing and decreasing trajectory classes have varied considerably across prior studies (e.g., from 2.1% to 24.0% for chronic victims, 5.9% to 31.0% for high-decreasing victims; and 4.0% to 29.8% for moderate-increasing victims; see Biggs et al., 2010; Brendgen et al., 2016; Ladd et al., 2017). Notably, our prevalence estimates for two of these groups, high-chronic and high-decreasing victims, appear to fall on the lower end of the range compared to other studies. Although it is difficult to surmise exactly why these differences in prevalence rates have been found, there are several possible explanations that are important to consider. More specifically, differences across studies may be attributable to variations in methodology (e.g., informant types and measures), sampling designs, and timing (e.g. age ranges, developmental periods).

With respect to methodological differences, it is notable that researchers have recommended multiple-informant assessments of peer victimization (Ladd & Kochenderfer-Ladd, 2002); however, most studies examining children's victimization trajectories have relied on single-informant designs (e.g., self-reports). To address this potential limitation and provide a more robust assessment, this study used a multiple-informant design incorporating both teacher- and self-reports. At the bivariate level, the moderate correlations found between teacher and self-reports are consistent with the notion that teachers and children are likely to have unique perspectives regarding children's peer victimization experiences, despite some level of agreement. Elementary school teachers typically spend a large amount of time with their students, thus

providing them with ample opportunities to observe children's interactional styles and peer relationships. However, it is also likely that certain forms of peer victimization may occur outside the purview of adults (and teachers). For instance, two of the four peer victimization indicators assessed relational or social forms of victimization. Considering that these types of behaviors are often covert and indirect, they may be more difficult for teachers to detect than more physical or overt forms. Consequently, children's self-reports and perceptions of these types of experiences are also necessary to evaluate.

With respect to sampling differences, to our knowledge, it has been rare for studies on children's peer victimization trajectories to incorporate large-scale representative random sampling designs. The reliance on non-representative or convenience samples and relatively smaller sample sizes may raise concerns about the extent to which previously reported prevalence rates and trajectory patterns are sample-specific or generalizable. To address these potential limitations, the current study relied on a large-scale nationally representative sample which more strongly ensures the generalizability of the findings.

Another important consideration that may relate to differences reported across studies is timing, both in terms of the age at which data collection assessments begin, and the developmental period that is covered. One potential concern that is important to scrutinize relates to the *cats-cradle* pattern of findings (Sher et al., 2011). This perspective highlights that it is common to identify four classes reflecting high-stable, increasing, decreasing and low stable trajectories (i.e., a cat's-cradle pattern) even when the developmental (age) range assessed in different studies is adjusted, or when these classes are not conceptually meaningful or theoretically expected. With respect to the latter argument, we would contend that in the context of studying children's peer victimization trajectories, the identification of these four classes is theoretically expected and of conceptual and practical significance. With respect to the former argument, we also compared our findings with similar studies which examined different developmental periods. Interestingly, although there were differences in prevalence rates (as previously noted), the trajectory patterns we identified were highly consistent with several other studies that examined longer developmental periods (e.g., from Kindergarten to Grade 12 or ages 6 to 17 years old; see Ladd et al., 2017; Oncioiu et al., 2020). For instance, our findings indicated that chronic victims exhibited stability in their peer victimization across elementary school. In longer term studies, it appears that chronic victims exhibit a decline in peer victimization; however, this decline tends to become more pronounced after the transition to middle school. Furthermore, decreasing victims in our study exhibited a sharp decline in victimization during middle childhood, but still exhibited some (moderate) levels of victimization at the final assessment wave (Grade 5). This is consistent with longer-term studies which have found that decreasing victims continue to exhibit declining victimization during the transition to adolescence and middle school; however, there is also a flooring effect with the rate of decline flattening out across time.

Sociodemographic characteristics associated with children's peer victimization trajectory classes

Findings with respect to race and ethnicity were mixed. African American children were more likely than other children to be in the high-chronic, high-decreasing and moderate-increasing classes than the low victim class. In contrast, Hispanic/Latino and Asian

American children did not appear to be at greater risk for peer victimization, and in some cases showed low odds of being in one of the more elevated victimization classes. Taken together, these findings indicated that not all underrepresented groups were at increased risk for chronic victimization; however, these associations may be impacted by other factors that were beyond the scope of the current study, such as experiencing racial-ethnic discrimination and a school's ethnic and racial composition. With respect to the former, researchers have found that peer victimization and discrimination are associated and that children who reported greater discrimination are also more victimized (Seaton et al., 2013; Verkuyten & Thijs, 2002). Thus, the effects of race and ethnicity on victimization may depend on the extent to which children experience discrimination. With respect to the latter, it may also be important to consider how the composition of the school may function as a moderator, such that numerically underrepresented ethnic groups are more likely to be victimized than the numerically larger group (Graham & Juvonen, 2002).

The findings also indicated that lower levels of SES increased the likelihood that children would be identified in one of the three victimization classes (i.e., high-chronic, high-decreasing and moderate-increasing) compared to low victims; however, differences among the three victimization classes were non-significant. Although previous findings have been mixed, the results from this study implicate SES as a common potential risk factor for multiple types of victimization trajectories. These findings are consistent with the viewpoint that socioeconomic inequalities may contribute to aggressive behaviors being targeted at individuals in lower socioeconomic groups (e.g., as a means of maintaining social status differences; Due et al., 2009). Alternatively, SES and poverty are broadly associated with other individual (child) and environmental factors, and the effects of SES seem to be attenuated when additional family and child characteristics are taken into account (Oncioiu et al., 2020).

With respect to child sex, the odds ratios indicated that girls were less likely to be chronic, decreasing and moderate-increasing victims than low victims; however, there were not significant differences among the three victimization classes. Extant studies on children's peer victimization trajectories have reported mixed findings with respect to sex differences; however, when differences have emerged, they tend to suggest that boys are at greater risk for having more problematic victimization trajectories (Biggs et al., 2010; Brendgen et al., 2016; Goldbaum et al., 2003; Ladd et al., 2017; Oncioiu et al., 2020).

Children's peer victimization trajectories and associations with problem behaviors

To examine the longitudinal and co-occurring associations between children's peer victimization trajectories and their behavioral problems across middle childhood, we examined differences among groups with respect to their baseline (i.e., intercept) estimates and growth trajectories (i.e., linear and quadratic slope effects). To highlight some of the insights garnered from these results, we evaluated the findings for each of the peer victimization trajectory classes that were identified, and considered how the findings varied by child sex and depending on the form of problem behavior (i.e., externalizing or internalizing problems).

Chronic peer victimization

The findings revealed several ways in which chronic victims appeared to be a distinct class with respect to their co-occurring

problem behaviors. More specifically, the baseline (intercept) estimates and group comparisons indicated that high-chronic victims had significantly higher internalizing and externalizing problems compared to moderate-increasing and low victims. Moreover, their trajectories of problem behaviors remained elevated – and in some cases, escalated – across time. Taken together, these findings provided support for a chronic stress perspective (Dohrenwend & Dohrenwend, 1981; Johnson, 1988; Kochenderfer-Ladd & Wardrop, 2001; Ladd et al., 2017), and were consistent with the premise that prolonged and severe experiences of victimization are more likely to co-occur with detrimental adjustment outcomes compared to short-term or transient experiences.

The current findings are consistent with the premise that early peer relational problems contribute to the development of chronic co-occurring externalizing and internalizing problems in childhood (Shi et al., 2020). There is growing evidence that peer victimization has pervasive effects on developmental processes at multiple levels of analysis including children's psychophysiology, social cognitions, and social interactions, and we contend that many of these effects are likely to be magnified or exacerbated under conditions of chronic victimization. For instance, peer victimization often entails behaviors that directly harass or harm the victim, which in turn, may promote an elevated stress response. Chronic victimization, by extension, may result in repeated and prolonged stress reactivity which may deplete cognitive resources, and impair the optimal functioning and development of other cognitive processes involved in children's behavioral adjustment (Troop-Gordon et al., 2015, 2017). Repeated victimization is also likely to increase children's risks for maladjustment by impacting their social cognitions such as their beliefs and perceptions about themselves and their peers. More specifically, victimization may alter children's sense of belonging, loneliness, hostile attribution styles, and their perceptions about whether their peers are supportive and trustworthy, which in turn, may contribute to their externalizing and internalizing behaviors (Ladd et al., 2014; Perren et al., 2013; Rudolph et al., 2014). Taken together, these findings implicate peer victimization as a relational stressor which may impact multiple developmental processes instrumental in children's co-occurring externalizing and internalizing problems.

We also investigated whether the longitudinal associations varied by child sex and by the form of problem behavior. With respect to children's externalizing and internalizing problems, boys who were identified as chronic victims exhibited modestly increasing internalizing and externalizing trajectories, consistent with the escalation model, and girls exhibited relatively stable internalizing and externalizing trajectories, consistent with the maintenance model. However, with respect to social anxiety, girls who were chronic victims exhibited significantly increasing social anxiety, consistent with the escalation model.

Taken together, several implications can be drawn from these findings. More specifically, support for the maintenance model with respect to girl's internalizing and externalizing trajectories, which is reflective of persistent comorbidity of problem behaviors, indicates that girls who were chronic victims were not more likely to exhibit a fear-conditioning response in which they became more anxious and withdrawn and less aggressive as they continued to endure victimization (see Boivin et al., 2010). Although it was outside of the scope of this study, further insights into the behavioral adjustment of chronic victims, and the possibility of a fear-conditioning response, may be gained by more explicitly assessing subtypes of victims and the potential heterogeneity among chronic victims. Research on peer victimization has typically differentiated

two subtypes of victims: passive victims and aggressive (or provocative) victims (Ettekal & Ladd, 2017; Schwartz et al., 2001). Applying this typology, it would be expected that chronic passive victims would be more likely to exhibit internalizing problems such as social anxiety and withdrawal (consistent with a fear-conditioning perspective), but chronic aggressive victims would be characterized by either externalizing problems, or co-occurring externalizing and internalizing problems (Bettencourt et al., 2013; Ettekal & Ladd, 2020; Kochenderfer-Ladd, 2003; Schwartz et al., 2001).

Furthermore, considering the patterns of escalation, an important implication is that there are, to some degree, sex-specific variations in the underlying (physiological, psychological, social cognitive, and interactional) processes relating to the potential impact of chronic victimization. For instance, in addition to the acute stressors associated with chronic victimization, it is likely to produce anticipatory stress as children develop beliefs and expectations that they will be repeatedly victimized, contributing to their social anxiety and felt insecurity (Ladd et al., 2019). Because girls place a greater priority on their friendships, have more intimate peer relationships, and engage in more self-disclosure than boys, particularly as they mature (LaFontana & Cillessen, 2010; Rose & Rudolph, 2006), they may feel more anticipatory distress and social anxiety when they are persistently victimized by peers, thus accounting for their increasing social anxiety trajectories. Boys, in contrast, are more likely to endorse hostile attribution biases (Orobio de Castro et al., 2002), which may contribute to their increasing externalizing trajectories. In summary, although boys and girls who were chronically victimized were likely to exhibit co-occurring problem behaviors, findings supporting the escalation model implied that boys had a more pronounced susceptibility to increasing externalizing trajectories, and girls to increasing social anxiety trajectories.

Increasing peer victimization

The maintenance and escalation models were also applied to moderate-increasing victims. In general, children in this group exhibited modest rates of problem behaviors, persistently lower than chronic victims, but higher than low victims. We also evaluated the hypothesis that increasing victimization may co-occur with increasing problems behaviors; however, the findings reflected a pattern more consistent with continuity in problem behaviors, thus providing greater support for the maintenance than the escalation model.

There are several possible explanations for why patterns of escalation were not more pronounced. First, this group exhibited only modest increases in peer victimization across time, and their overall level of peer victimization remained relatively moderate. Thus, escalations in problem behaviors may be more likely to co-occur with more severe victimization experiences. Second, given the relatively large proportion of children in the moderate-increasing class, and their moderate rates of behavioral maladjustment, it may be important to further assess the potential heterogeneity of children in this group. For instance, there may be other individual (child) or peer relational factors that may moderate the behavioral trajectories of children in this victimization trajectory class. That is, some victimized children exhibit relatively high social status, are perceived by peers as being popular, and exhibit fewer social difficulties (Malamut et al., 2021). These relational assets may offset or compensate potentially detrimental victimization experiences, and reduce the likelihood for an escalation in problem behaviors.

Although moderate-increasing victims were not increasing in their problem behaviors, they still maintained significantly higher levels of problem behaviors than low victims. Considering these findings from a developmental perspective, one implication is that experiences of peer victimization in middle childhood may alter the *normative* developmental progression of children's behavioral adjustment during this period. That is, our findings and those of other investigators, indicate a normative decline in externalizing problems and social anxiety in middle childhood (Ladd et al., 2019; Tremblay, 2010). This decline is likely influenced by developmental and maturational processes including gains in children's social-emotional skills and self-regulatory processes; however, these processes may be interrupted when children are persistently victimized, regardless of whether the victimization is high or moderate in magnitude.

Decreasing peer victimization

Two alternative perspectives were proposed to consider how high-decreasing peer victimization is associated with children's behavioral adjustment. According to a recovery model, once the stressors associated with peer victimization are reduced (e.g., harassment, social exclusion, lack of belonging), children are likely to benefit from a more positive social context and more supportive peers. Thus, decreasing victimization would be expected to co-occur with declines in problem behaviors. In contrast to a recovery model which implies that the effects of peer victimization are temporal or transient, a scar model implies that there are more enduring and detrimental long-term effects of early victimization experiences, such that it may continue to have a residual effect on children's behavioral adjustment, even after experiences of victimization have subsided (Ladd et al., 2017).

Taken together, the results varied depending on the form of problem behavior. More specifically, consistent with the recovery model, children (boys and girls) who were high-decreasing victims exhibited significant declines in their social anxiety trajectories, and by Grade 5, their rates of social anxiety were comparable with those of low victims. Interestingly, this pattern of recovery emerged despite high-decreasing victims still exhibiting some (moderate) degree of victimization in Grade 5. In other words, although victimization had not completely desisted for children in this group, they nonetheless exhibited a recovery in terms of their social anxiety. In contrast, although high-decreasing victims also exhibited significant declines in their internalizing and externalizing trajectories, their rates of problem behaviors remained higher than low victims, and were comparable to those of moderate-increasing victims by Grade 5. Thus, it appeared that high-decreasing victims exhibited a more pronounced recovery in social anxiety compared to their rates of internalizing and externalizing problems. However, it is important to note that because children in this group continued to experience victimization (i.e., there was not a complete desistance in their victimization trajectories by Grade 5), the elevated levels of internalizing and externalizing problems (in comparison to low victims) could be related to ongoing victimization, rather than a scarring or residual process.

Limitations and future directions

The findings of this study should be considered in light of several potential limitations. First, peer victimization data was not collected when children first began formal schooling (i.e., in Kindergarten or Grade 1), which precluded the possibility of examining peer victimization as children first transitioned into

elementary school. Thus, it is possible that experiencing peer victimization in earlier grades may have contributed to the elevated rates of problem behaviors that were observed among some of the peer victimization trajectory classes in Grade 2. If this were in fact the case, the escalation model may be more strongly substantiated in earlier grades or developmental periods (e.g., the transition to formal schooling). Moreover, given the focus on the middle childhood years, an important direction for future research may be to further investigate the proposed alternative models during other (or longer) developmental periods. For instance, one important question that could not be addressed is whether certain developmental patterns pertaining to the alternative conceptual models (Figure 1) may be more pronounced during the transition to middle school as children are navigating a new school context and there is a greater reliance on, and influence of, peer relationships. Second, the correlational and analytic design limited causal inferences. Moreover, because the overarching aims of this study were to examine the co-occurring development of peer victimization and problem behaviors, it was outside the scope of this study to assess the direction of effect among these constructs. An interesting direction for future research would be to supplement the current findings with the use of variable centered models (e.g., variants of full panel cross-lagged models) in order to further disentangle the direction of effect among these constructs. Third, the measurement invariance analyses indicated that some measures exhibited partial scalar invariance; however, because only a few items did not exhibit scalar invariance, this issue was not likely to have a significant impact on the model results (Little, 2013). Moreover, due to the limited number of items used to assess peer victimization in the ECLS dataset, we focused our analysis on overall rates of peer victimization encompassing its multiple forms. Because it was not possible to more explicitly examine its specific forms, this may serve as an important direction for future research in order to gain further insights into the developmental course of peer victimization in middle childhood as well as potential informant and demographic differences.

Conclusion

Findings elucidated how children traversed distinct pathways of peer victimization through elementary school. Although most children exhibited low levels of victimization, there was significant heterogeneity in their victimization experiences. Consistent with chronic stress and individual vulnerability perspectives, children who experienced high and chronic levels of victimization also exhibited co-occurring externalizing and internalizing problems. Moreover, findings supporting the escalation model implied that boys had a more pronounced susceptibility to increasing externalizing trajectories, and girls to increasing social anxiety trajectories. In contrast, those with declining peer victimization across time exhibited signs of recovery, particularly with respect to their social anxiety. These findings highlight how peer victimization may have differential effects on children's behavioral adjustment depending on its magnitude and chronicity, as well as the form of problem behavior and by child sex.

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