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Patterns of peer- and teacher-rated aggression, victimization, and prosocial behavior in an urban, predominantly African American preadolescent sample: Associations with peer-perceived characteristics

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ABSTRACT

This study investigated peer-perceived social/reputational correlates of patterns of aggression, victimization, and prosocial behavior. Participants were a predominantly African-American (i.e., 87%) sample of 320 fourth and fifth graders (45% male, Mean age = 10.4 years) attending six urban public elementary schools. Using latent profile analysis, profiles of peer-perceived and teacher-perceived aggressive, victimized, and prosocial youth were identified. These latent profiles were then compared on a range of peer-perceived social/reputational characteristics. Results indicated that teachers and peers identified similar profiles of normative and prosocial students. However, whereas peers distinguished between aggressive and victimized profiles, the teacher-identified victimized profile was also perceived as aggressive. Results also indicated that there was modest agreement between peers and teachers about who was involved in peer victimization. Findings underscore the importance of including both informants in efforts to identify youth involved in peer victimization.

1. Introduction

Peer victimization, defined as aggressive actions taken by one or more peers (perpetrators) with the specific intention of inflicting physical or psychological pain or injury on a designated victim (Vernberg, Jacobs, & Hershberger, 1999), is common. Thirty to 60% of school-age youth report being the victim (Card & Hodges, 2008) and 25–35% report perpetrating peer victimization within a school year (Nansel et al., 2001; Wang, Iannotti, & Nansel, 2009). These aggressive acts primarily take two forms, namely overt aggression, which includes hitting, pushing, threatening and name-calling, and relational aggression, which includes intentionally damaging the victim's peer relationships and social standing through rumor spreading and exclusion from group activities (Card, Stucky,

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Sawalani, & Little, 2008). Past research has found high correlations between overt and relational aggression and overt and relational victimization (Card et al., 2008) indicating that youth often perpetrate or experience peer victimization in multiple forms. Peer victimization becomes more common and problematic as youth move toward adolescence and transition to middle school because peer relationships and concerns about social standing within the peer network become increasingly important (Nansel, Haynie, & Simons-Morton, 2003; Parker, Rubin, Price, & DeRosier, 1995). Therefore, it is critical to identify youth involved in peer victimization before these patterns become entrenched as peer victimization involvement is linked with a variety of negative long-term consequences, including anxiety, suicide, antisocial behavior, substance abuse, and incarceration (Clemans, Musci, Leoutsakos, & Ialongo, 2014; Fergusson, Horwood, & Ridder, 2005; Huesmann, Eron, & Dubow, 2002; Ladd, Ettekal, & Kochenderfer-Ladd, 2017; McDougall & Vailliancourt, 2015).

1.1. Differences in adjustment among youth involved in peer victimization

1.1.1. Perpetrators of peer victimization

Youth involved in peer victimization reflect a heterogeneous group who differ in the extent to which they perpetrate and experience victimization, and in their social, emotional, behavioral, and academic functioning (see Schwartz, Proctor, & Chien, 2001 for a review). Typical perpetrators of peer victimization, often identified as non-victimized aggressors, are perceived as physically strong, and though not necessarily well-liked, maintain high levels of perceived popularity in the peer network (e.g., Cillessen & Borch, 2006; Giang & Graham, 2008; Hess & Atkins, 1998; Juvonen, Graham, & Schuster, 2003; Olweus, 1978; Schwartz, 2000; Veenstra et al., 2005). However, these non-victimized aggressors also exhibit a variety of conduct and academic problems (e.g., Bradshaw, Waasdorp, Goldweber, & Johnson, 2013; Estell, Farmer, & Cairns, 2007; Haynie et al., 2001; Lovegrove, Henry, & Slater, 2012; Schwartz, 2000; Veenstra et al., 2005). Some research has identified a subgroup of aggressive youth who also engage in high levels of prosocial behavior. These youth, termed bistrategic controllers, use a combination of aggressive and prosocial strategies to win influence over their peers and enjoy greater peer regard and higher perceived popularity than their purely aggressive peers (Hawley, 2003; Hawley, Little, & Card, 2007; Hawley, Little, & Card, 2008; Wurster & Xie, 2014).

1.1.2. Victims of peer victimization

Typical victims of peer victimization, often referred to as non-aggressive victims, are perceived as physically weak, shy, socially withdrawn, submissive, unpopular, and not well-liked (Hess & Atkins, 1998; Olweus, 1978; Perry, Hodges, & Egan, 2001; Schwartz, 2000). They also experience significant internalizing behavior problems (e.g., anxiety, sadness, low self-esteem) (Giang & Graham, 2008; Olweus, 1978; Perry et al., 2001; Schwartz, 2000), and academic performance difficulties (Giang & Graham, 2008; Graham, Bellmore, & Mize, 2006). Many studies have identified a subgroup of victimized youth who are also perpetrators of peer victimization (e.g., Bettencourt & Farrell, 2013; Bettencourt, Farrell, Liu, & Sullivan, 2013; Giang & Graham, 2008; Lovegrove et al., 2012; also see Schwartz et al., 2001 for a review). These youth, referred to as aggressive-victims, tend to fare more poorly than any other subgroup involved in peer victimization. They are less popular, and more rejected, anxious, sad, and lonely than non-victimized aggressors, and more emotionally and behaviorally dysregulated than non-aggressive victims (e.g., Giang & Graham, 2008; Hawley et al., 2007; Hess & Atkins, 1998; Schwartz, 2000; Schwartz et al., 2001; Toblin, Schwartz, Gorman, & Abou-ezzeddine, 2005). These youth also tend to exhibit more conduct and academic difficulties compared to all other subgroups (Bradshaw et al., 2013; Giang & Graham, 2008; Haynie et al., 2001; Toblin et al., 2005; Veenstra et al., 2005).

Given that youth involved in peer victimization differ in both their role in these experiences and in their social, emotional, behavioral, and academic adjustment, they are likely to benefit most from interventions tailored to meet their unique needs. A first step toward addressing the unique needs of these subgroups is accurately identifying who is involved in peer victimization and what role they play in these experiences. Being able to correctly identify non-victimized aggressors, bistrategic controllers, non-aggressive victims, and aggressive-victims will aid school professionals in selecting appropriate targeted interventions designed to provide students with the specific skills and supports needed to address the psychosocial consequences of their involvement and prevent subsequent involvement in peer victimization.

1.2. Identifying subgroups of youth involved in peer victimization

There are several important factors to consider when attempting to identify youth involved in peer victimization. One important consideration is the method of assessment of aggression, peer victimization, and their correlates. A second important consideration is the method used to assign youth to subgroups involved in peer victimization. We review existing research on both key considerations in the sections below.

1.2.1. Assessment method

Aggression, peer victimization, and their correlates are typically measured using reports from one or more informants, including self-, peer-, and teacher-reports (Crothers & Levinson, 2004). Self-reports, which usually take the form of surveys/rating scales, are the most commonly used approach to assess children's social-emotional, behavioral, and academic adjustment. The benefits of self-report measures are that they do not require much time or people resources to administer, there is evidence of adequate reliability and validity, and they allow for capturing the child's perspective on their own experiences (Card & Hodges, 2008; Crothers & Levinson, 2004). However, researchers have expressed concern that self-reports may be highly susceptible to under and over-reporting biases (Card & Hodges, 2008; Perry, Kusel, & Perry, 1988).

Peer-reports typically take the form of a peer nomination inventory wherein children nominate classmates who fit a particular criterion or behavioral descriptor (Card, Hodges, Little, & Hawley, 2005; Pelligrini, 2001). Peer nomination inventories have previously been used to assess aggression, peer victimization, shyness/withdrawal, anxiety and sadness, social preference (i.e., liked most/liked least), popularity, and academic performance (Card et al., 2005; Gest, Domitrovich, & Welsh, 2005; Hodges, Malone, & Perry, 1997; Masten, Morison, & Pellegrini, 1985). There are a number of variations within this approach including whether participants are given a list of their peers or asked to recall names from memory, asked to complete the inventory in groups or individually, and given the opportunity to nominate as many peers as they choose or a set number (Card & Hodges, 2008; Pelligrini, 2001). Peer reports have been shown to be reliable and valid estimates of who is involved in peer victimization and students' reputational characteristics because peers have more opportunities to observe other students in unsupervised contexts where victimization tends to occur, and they are less susceptible to underreporting biases (Crothers & Levinson, 2004; Gest et al., 2005; Hodges et al., 1997; Ladd & Kochenderfer-Ladd, 2002; Masten et al., 1985; Pelligrini, 2001). However, some research suggests that peer nominations may be biased by the racial/ethnic context of the classroom with children more likely to nominate more students and provide more positive nominations for students when the student's racial/ethnic group was in the majority in the classroom (Bellmore, Nishina, Witkow, Graham, & Juvonen, 2007; Jackson, Barth, Powell, & Lochman, 2006).

Teacher-reports typically involve either identifying students from the class roster who fit behavioral descriptors similar to peer nominations or completing ratings of individual children's social, emotional, behavioral, and academic functioning similar to self-report instruments (Cairns, Leung, Gest, & Cairns, 1995; Card & Hodges, 2008; Crothers & Levinson, 2004; Cullerton-Sen & Crick, 2005; Gest et al., 2005). Teacher-reports have previously been used to measure children's aggression, peer victimization, prosocial behavior, withdrawn-submissive behavior, anxiety and sadness, and academic performance (e.g., Estell et al., 2007; Gest et al., 2005; Hess & Atkins, 1998; Ladd & Kochenderfer-Ladd, 2002; Schwartz, 2000; Toblin et al., 2005). The benefits of teacher reports are that teachers can easily provide ratings on a large number of students with whom they interact regularly and such approaches have adequate psychometric properties (Card & Hodges, 2008). However, there are some concerns that teachers may not notice subtler instances of victimization or those occurring outside their purview (Card & Hodges, 2008; Crothers & Levinson, 2004; Ladd & Kochenderfer-Ladd, 2002), and that their ratings can be biased by teachers' own cultural perspective, which may particularly disadvantage male and African American students (Bean, 2013; Kozlowski, 2015; McGrady & Reynolds, 2013; Wright, 2015).

Most studies of subgroups involved in peer victimization have relied on a single informant to measure aggression and victimization and their correlates, with self-reports being the most common followed by peer reports (Ladd & Kochenderfer-Ladd, 2002; Schwartz et al., 2001). Researchers have raised concerns about relying on a single informant given the unique biases inherent in each informant's perspective and the context-specific nature of different behaviors, and therefore recommend incorporating multiple informants whenever possible (Achenbach, McConaughy, & Howell, 1987; Card & Hodges, 2008). The overreliance on self-reports is of particular concern given that self-reported aggression and victimization typically show low correlations with peer and teacher reports of the same behaviors (Ladd & Kochenderfer-Ladd, 2002; Pelligrini, 2001), calling in to question their validity.

Teacher reports of aggression and victimization tend to show higher correlations to peer- reports than to self-reports, suggesting that teachers and peers hold similar perceptions of an individual's behavior in the school setting (Ladd & Kochenderfer-Ladd, 2002). Some research, however, suggests that peers and teachers may differ in their perceptions of aggressive and victimized students. For instance, Estell et al. (2007) found that, whereas teachers considered students identified as bullies to be more aggressive than victims and noninvolved students, peers perceived bullies to be more aggressive than all other groups (victims, aggressive-victims, and noninvolved students). Thus, it is important to gather data from multiple informants as each may lend unique information that will improve identification of youth involved in peer victimization.

1.2.2. Cut-off score vs. person-centered approaches

Some controversy exists regarding how best to identify youth involved in peer victimization. The traditional approach (Schwartz et al., 2001) has been to use midpoint or standard deviation cutoffs on measures of aggression and peer victimization that were selected a priori based on theoretical and empirical research to assign youth to different subgroups. For example, Toblin et al. (2005) used cutoff scores of 0.75 standard deviations above and below the mean on peer nominations of aggression and victimization to identify four subgroups of youth – bullies (10% of sample), aggressive-victims (10%), passive-victims (10%), and normative contrasts (70%). Estell et al. (2007) used a combination of peer nominations and teacher ratings of aggression and victimization to classify youth. Those receiving a positive z-score on teacher ratings of aggression and a peer nomination for aggression were classified as bullies, and the same approach was taken for ratings and nominations of victimization. This approach identified four subgroups – bullies (12%), victims (13%), aggressive-victims (4%), and uninvolved (71%). Finally, Unnever (2005) used a cutoff of perpetrating or experiencing peer victimization two or more times per month based on self-reports of aggression and victimization to classify youth into three subgroups – bullies (8%), pure victims (21%), and aggressive-victims (8%).

Giang and Graham (2008) provide an excellent summary of the limitations of traditional methods of categorizing aggressors and victims. Cutoff scores are mostly arbitrary and fail to account for heterogeneity within subgroups and homogeneity between subgroups, including similarities between students who fall just above and below the cutoff. Differences across studies in the number of items used to measure aggression and victimization (e.g., 1–9 items), the informant source, and selected cutoff score also results in wide variation in subgroup prevalence rates (e.g., 1.5% to 24% for bullies, 7% to 25% for passive-victims, 2% to 29% for aggressive-victims; Schwartz et al., 2001). This traditional approach also provides no way to account for participants whose behaviors fall outside the previously determined subgroup structure.

The person-centered approach of latent class analysis addresses each of these limitations. Rather than imposing pre-existing theoretical distinctions to classify participants into subtypes, latent class analysis is an exploratory approach that identifies subtypes

of individuals in a population based on pattern similarity on a set of indicators (McCutcheon, 1987). These indicators can be categorical or continuous; the use of continuous indicators, as is done in the present study, is called latent profile analysis (LPA). Classes, or profiles, are created in such a way as to maximize homogeneity within class and heterogeneity between classes. Models with varying numbers of classes are compared using examination of fit statistics and theoretical interpretation to determine the best class structure for the data (Nylund, Asparouhov, & Muthén, 2007). Comparisons of latent class analysis and traditional approaches to identifying subgroups of youth involved in peer victimization suggest that subgroups identified using latent class analysis are more predictive of subsequent adjustment difficulties than subgroups constructed using traditional classification methods (Nylund, Bellmore, Nishina, & Graham, 2007). Moreover, latent class analysis does a better job of classifying youth who do not cluster near the extreme ends of a scale (Nylund et al., 2007).

Several recent studies have employed latent class analysis to investigate patterns of aggression and victimization in youth (Bettencourt & Farrell, 2013; Bettencourt et al., 2013; Giang & Graham, 2008; Lovegrove et al., 2012; Williford et al., 2011). The majority of these studies have used self-report measures of aggression and victimization as latent class indicators and found support for the same subgroups identified with traditional approaches: non-victimized aggressors, non-aggressive victims, aggressive-victims, each usually comprising 10 to 25% of the sample, and a larger class of normative or uninvolved students. These studies have also identified similar patterns of associations of subgroup membership with indicators of adjustment. Specifically, there was evidence of greater externalizing behavior in non-victimized aggressors and aggressive-victims (Bettencourt & Farrell, 2013), greater internalizing behaviors among non-aggressive victims and aggressive-victims (Bettencourt et al., 2013; Giang & Graham, 2008), reduced academic success, school attachment and school engagement (Giang & Graham, 2008; Lovegrove et al., 2012), and increased rejection by peers across all three involved subgroups (Giang & Graham, 2008).

1.3. Demographic considerations in studying youth involved in peer victimization

While many studies suggest that boys are more likely than girls to be involved in peer victimization as aggressors, victims, or aggressive-victims (Estell et al., 2007; Lovegrove et al., 2012; Nansel et al., 2001; Nylund et al., 2007; Schwartz et al., 2001; Toblin et al., 2005), several studies have found no evidence of gender differences or that boys are less likely to be aggressive-victims (i.e., Bettencourt & Farrell, 2013; Bettencourt et al., 2013; Hess & Atkins, 1998; Unnever, 2005). Notably, most of the studies finding no evidence of gender differences have focused on urban samples that included a large proportion of African American youth, which is consistent with other research indicating that rates of aggression are similar among African American girls and boys (Bradshaw, Schaeffer, Petras, & Ialongo, 2010; Miller-Johnson, Moore, Underwood, & Coie, 2005). In addition, studies of youth who are both prosocial and aggressive (bistrategic controllers) have also yielded mixed findings, with some indicating that boys are more likely to be members of this subgroup (Hawley et al., 2007), and others finding no gender differences (Hawley, 2003; Hawley et al., 2008) or that girls are more likely to be bistrategic controllers (Wurster & Xie, 2014). In light of these mixed findings, it is important to continue to explore gender differences in subgroup membership.

The number of children living in poverty has steadily increased over the past twenty years (Shaefer & Edin, 2013), and children of color, particularly African American children, are disproportionately represented in these numbers (Child Trends Databank, 2015). Growing up in poverty increases the chances that children will be exposed to myriad risk factors such as environmental toxins, neighborhood violence, parental mental health and substance abuse problems, trauma and abuse, and inadequate nutrition (e.g., Barajas-Gonzalez & Brooks-Gunn, 2014; Evans, 2004). Research indicates that youth raised in impoverished urban environments, where exposure to multiple risk factors is common, are at increased risk for exhibiting impairments in prosocial behavior skills (Brooks-Gunn & Duncan, 1997; Conger et al., 1992; Mistry, Vandewater, Huston, & McLoyd, 2002;) and for becoming involved in peer victimization (Bettencourt et al., 2013; Goldweber, Waasdorp, & Bradshaw, 2013). Moreover, although the majority of research on peer victimization has focused on White children, there is growing evidence from studies with more diverse samples that African American youth may be more likely to be involved in peer victimization (Bettencourt & Farrell, 2013; Goldweber et al., 2013; Lovegrove et al., 2012; Schuster et al., 2012; Wang et al., 2009). Taken together, these data underscore the importance of pinpointing the most effective methods for identifying and intervening with urban African American youth involved in peer victimization experiences.

1.4. The present study

The present study focused on three aims. The first aim was to use data from peer nominations and teacher ratings to identify subgroups of preadolescents who differ in their patterns of aggression, victimization and prosocial behavior using LPA. Prior research has examined patterns of aggression and victimization using person-centered approaches (e.g., Bettencourt et al., 2013; Giang & Graham, 2008; Lovegrove et al., 2012; Williford et al., 2011). However, all but one of these studies has relied on self-reports of these behaviors, which are highly susceptible to reporting biases (Card & Hodges, 2008). Giang and Graham (2008) used peer nominations of aggression and peer victimization and identified five subgroups of youth, including two aggressive-victim subgroups (highly-victimized and highly-aggressive) who differed from each other on measures of loneliness and peer rejection. These findings may be evidence that peer nominations can provide a more nuanced picture of aggression and victimization within the peer setting than can be derived from self-report data. Related to this, teacher reports have rarely been used to identify subgroups of youth involved in peer victimization despite evidence that they can provide reliable reports of these behaviors (Ladd & Kochenderfer-Ladd, 2002), and such reports have never been incorporated into person-centered approaches to identifying youth involved in peer victimization. This study addresses these gaps by using two informant sources that have received less attention in studies focused on

identifying subgroups of youth involved in peer victimization.

Importantly, prosocial behavior has not been included as a behavioral indicator of subgroup membership in studies focused on identifying youth involved in peer victimization despite evidence that some aggressive youth also employ prosocial strategies to achieve social dominance in their interactions with peers (e.g., Hawley et al., 2007, 2008). Based on Hawley et al.' (2007, 2008) research on bistrategic controllers, we expected the addition of prosocial behavior to alter the typical 4-subgroup structure identified in most prior work (see Schwartz et al., 2001 for a review) such that two classes of aggressive youth, one characterized by concurrently high levels of aggressive and prosocial behavior, would be identified. Because aggressive-victims typically show the worst social adjustment (Schwartz et al., 2001), we also expected the aggressive-victims class to be further distinguished from non-aggressive victims by lower levels of prosocial behavior. In line with previous findings suggesting that different forms of aggression and victimization are highly correlated (Card et al., 2008), we did not expect subgroups to be differentiated by overt and relational aggression and victimization.

The second aim was to validate the distinct nature of the peer-perceived and teacher-perceived subgroups of aggressive, victimized and prosocial youth by examining subgroup differences on peer-perceived social and reputational characteristics. Consistent with prior research (e.g., Giang & Graham, 2008; Hess & Atkins, 1998; Schwartz et al., 2001), we hypothesized that aggressive-victims would be perceived as less socially preferred, less popular, having more academic difficulties and being more sad compared to the other subgroups. We also hypothesized that non-aggressive victims would be perceived as more shy (Hess & Atkins, 1998; Schwartz, 2000). Finally, we expected that bistrategic controllers would be perceived as more popular and well-liked than non-victimized aggressors (e.g., Hawley et al., 2008). A related aim was to examine gender differences in subgroup membership. Although the majority of research indicates that boys are overrepresented in subgroups of youth involved in peer victimization, recent research with urban, predominantly African American samples (e.g., Bettencourt & Farrell, 2013; Bettencourt et al., 2013) has found mixed results. Given that the present study was conducted with an urban, predominantly African American sample, we did not expect to find gender differences in subgroup membership.

The third aim of this study was to examine similarities and differences in the subgroups of youth identified by peers and teachers as involved in peer victimization. Based on limited prior work examining agreement among peer- and teacher-reports of victimization (Ladd & Kochenderfer-Ladd, 2002), we expected to find modest agreement about class membership across teacher and peer informants. Related to this, the inclusion of peer-perceived social/reputational characteristics in this study allowed us to determine whether the subgroups identified by teachers and peers were similar in ways that go beyond their involvement in aggression, victimization, and prosocial behavior. No hypotheses were made a priori due to the exploratory nature of this analysis.

2. Method

2.1. Setting and participants

2.1.1. Setting

Participants were fourth and fifth grade students and teachers from 22 classrooms in six elementary schools in a large urban public school system in the mid-Atlantic region of the United States. Participants completed measures in the spring semester of the school year as part of a larger study evaluating the relative impact of two classroom-based universal preventive interventions targeting students' aggressive-disruptive behaviors. All six schools served a predominantly African American student population and were designated as Title I, meaning that 75% or more of students qualified for the federally subsidized school lunch program.

2.1.2. The interventions

The larger trial from which the participants were drawn was designed to test the relative efficacy of the PAX Good Behavior Game (PAX GBG) and the Promoting Alternative Thinking Strategies (PATHS) program. Participating elementary schools were ranked in terms of the proportion of student suspensions that occurred in the prior school year, and then triads of schools closest in rank were formed. These triads were then randomly assigned to one of three conditions: PAX GBG only, PATHS to PAX (the integration of PAX GBG with PATHS), or a control condition (Domitrovich et al., 2016). There were no significant differences between intervention conditions at the fall baseline assessment on student outcomes, including measures of aggression, disruptive behavior, conduct problems, social competence, and emotion regulation. PAX GBG (Embry, Staatemeier, Richardson, Lauger, & Mitich, 2003) uses a team-based, token economy to reward groups or teams of students for inhibiting off-task and aggressive-disruptive behaviors in the classroom. The team-based approach allows the teacher to make use of peer pressure in managing student behaviors in the classroom setting. Prior to intervention implementation, teachers and students collaborate to identify the behaviors they feel will create a high functioning classroom and appropriate rewards for inhibiting off-task behaviors. These rewards typically include fun classroom activities such as blowing bubbles, or listening to music. PATHS (Greenberg, Kusche, & Riggs, 2004; Kusche & Greenberg, 1994) is focused on improving children's social and emotional competence in four domains: emotional understanding and emotional expression skills, self-control/emotion regulation, problem-solving skills, and prosocial friendship skills. Teachers implement PATHS lessons during classroom instruction two to three times per week for approximately 30 min each time. On average, teachers in the PATHS to PAX condition played the PAX GBG 154.22 times over the school year for 1583.43 min while teachers in the PAX GBG condition played 150.8 times for 1431.84 min. In addition, teachers completed an average of 71.8% of scheduled PATHS lessons over the course of the school year.

Table 1
Consent and peer nomination participation rates by school and classroom.

Classroom	% of students with consent to participate	% of students with consent who completed nominations
School A Classroom 4A	34.8%	39.1%
School A Classroom 4B	53.8%	65.4%
School A Classroom 5A	35.7%	60.7%
School B Classroom 4	54.2%	54.2%
School B Classroom 5	68.2%	72.7%
School C Classroom 4	54.5%	72.7%
School C Classroom 5	40.9%	40.9%
School D Classroom 4A	66.7%	74.1%
School D Classroom 4B	66.7%	76.2%
School D Classroom 4C	55.6%	77.8%
School D Classroom 5A	33.3%	33.3%
School D Classroom 5B	24.0%	24.0%
School E Classroom 4A	56.5%	60.9%
School E Classroom 4B	70.8%	75.0%
School E Classroom 5	64.3%	64.3%
School F Classroom 4A	13.8%	13.8%
School F Classroom 4B	62.1%	69.0%
School F Classroom 4C	73.3%	73.3%
School F Classroom 4D	46.4%	57.1%
School F Classroom 5A	57.7%	61.5%
School F Classroom 5B	68.2%	68.2%
School F Classroom 5C	36.0%	40.0%

Note. The designations 4A, 4B etc. refer to different sections of 4th or 5th grade. Consent rate reflects the number of students in the classroom whose parents provided consent to participate out of the total students enrolled in the classroom. Participation rate refers to the number of students in the classroom who completed peer nominations out of the total students enrolled in that classroom.

2.1.3. Study design and student participants

The current study used a cross-sectional design. In order to maximize sample size, we included students and teachers from both the control and intervention conditions of the trial in the present study. While it would have been preferable to use data collected at baseline prior to intervention implementation, peer nomination data were not collected at that time due to limited project resources. However, intervention condition was included as a covariate in all analyses to account for potential differences in patterns of teacher and peer ratings due to participation in the intervention conditions. The student sample comprised 320 students across 22 classrooms (Average class size = 25.2 students) for whom parental consent to participate was obtained (classroom consent rate = 59.2%). There were no significant differences between students with and without consent to participate in peer nominations on free and reduced price meals status (χ^2 (1) = 2.85, p = 0.09), special education status (χ^2 (1) = 0.23, p = 0.63), or chronic absenteeism, (χ^2 (1) = 0.36, p = 0.55). However, there were significant differences on gender (χ^2 (1) = 9.25, p = 0.002), and race/ethnicity (χ^2 (34) = 17.02, p = 0.002). Students with consent were more likely to be female (54.5%) compared to those without consent (38.8%). There was also a larger proportion of Hispanic (2.9%) and White (10.0%) and a smaller proportion of African American students (86.1%) among those with consent compared to those without consent (0.0% Hispanic, 1.5% White, 97.1% African American).

Of the 320 students with parental consent, 290 were present during data collection and filled out peer nomination surveys (classroom participation rate = 53.7%). Table 1 displays consent and participation rates by classroom. Nonparticipation among students with parental consent was due to absence during both initial data collection and subsequent make up days or to recent transfer to another school. However, nonparticipants with parental consent were still eligible to receive nominations from their peers. The sample was 45% male, average age was 10.4 years, and the majority of participants were in fourth grade (58%). In terms of ethnicity, 86.5% described themselves as African American, 9.7% as non-Hispanic White, 2.8% as Hispanic or Latino, and 1.0% as Asian.

2.1.4. Teacher participants

The teacher sample included 22 fourth and fifth grade teachers who consented to participate in this study. The sample was majority female (86.4%). While teachers ranged in age from 20 to over 60 years old, most teachers were between 20 and 40 years of age (26.3% were between 20 and 30; 42.1% between 31 and 40) and about a third were over the age of 40 (5.3% between 41 and 50; 15.8% between 51 and 60; 10.5% were over 60). On average, teachers in this sample had 17.2 years of teaching experience, with 15.8% having five or fewer years of experience, 21.1% having six to twelve years of experience, 26.3% having 13 to 19 years of experience, and 36.8% having 20 or more years of experience. In addition, 95% of the sample had obtained regular or standard teaching certificates, and 70% had obtained a graduate degree. Data on individual teachers' race/ethnicity was not collected in this study. However, district-level data indicate that 46.6% of teachers in this school system are White, 40.3% are African American, and 13.1% are from another racial/ethnic group. On average, teachers had known the students for nine months at the time of providing the ratings of their behavior used in this study.

2.2. Measures

2.2.1. Teacher ratings of aggression and victimization

Items from the Children's Social Behavior Scale –Teacher Form (Crick, 1996) were used to assess relational aggression (7 items; α = 0.96; e.g., "Tries to get others to dislike certain peers by telling lies about the peer to others") and overt aggression (4 items, α = 0.94; e.g., "Hits, shoves, or pushes peers"). Items from the Social Experiences Questionnaire –Teacher Report (Cullerton-Sen & Crick, 2005) were used to assess relational victimization (3 items, α = 0.91; e.g., "Is the target of rumors or gossip in the peer group"), and overt victimization (3 items, α = 0.92; e.g., "Gets hit or kicked by peers"). Teachers rated each student in their class on a 5-point Likert scale where 1 = *Never true* to 5 = *Always true*. Item ratings were averaged to create separate scale scores for relational aggression, overt aggression, relational victimization, and overt victimization. These variables were positively skewed and were transformed with the natural log function prior to standardization within classroom, after which their distributions better approximated normality.

2.2.2. Teacher ratings of prosocial behavior

Prosocial behavior was assessed with one item ("Was helpful to others, cooperated with peers, shared with others") that was created by the study team to align with one of the prosocial items used in the peer nomination assessment in this study. Teachers rated each student in their class on a 6-point Likert scale where 1 = *Never* to 6 = *Almost always*.

2.2.3. Peer nominations of aggression and victimization

Items used to assess relational and overt aggression were adapted from the Children's Social Behavior Scale – Peer Report (Crick & Grotpeter, 1995). The original scale included a 3-item overt aggression scale and a 4-item relational aggression scale. The adapted version used in this study included a 2-item Overt Aggression (α = 0.94; e.g., "Which kids start fights, say mean things, and hit other kids?") and a 3-item Relational Aggression scale (α = 0.90; e.g., "Which kids talk bad about other people behind their backs or tell stories about people to make others not like them?"). Items used to assess overt and relational victimization were adapted from the Social Experiences Questionnaire –Peer Report (SEQ-P; Crick & Bigbee, 1998). The original measure included three overt victimization items and three relational victimization items. The adapted version include a 2-item overt victimization scale (α = 0.91; e.g., "Which kids get picked on, beat up, yelled at, or hit a lot by other kids?") and an unchanged 3-item relational victimization scale (α = 0.81; e.g., "Which kids get talked about behind their backs or have rumors or lies told about them?"). Adaptations were made to reduce demands on participants who were being asked to provide nominations about many different behaviors in addition to aggression, prosocial behavior, and peer victimization. Adaptations took the form of combining multiple items covering the same form of behavior into a single item (e.g., For overt aggression, three original items "Starts fights", "Hits, pushes others," and "Calls others mean names were combined into a single item "Starts fights, say mean things, and hit other kids") to streamline the assessment. All behaviors assessed by the peer nomination items reflected widely accepted definitions of the aggression and victimization constructs (e.g., Card et al., 2008).

2.2.4. Peer nominations of prosocial behavior

Prosocial behavior was measured with a 2-item scale (α = 0.86). One item, "Which kids are helpful to others, cooperate with others, or share with others?," was drawn from previously used peer nomination assessments of prosocial behavior (Conduct Problems Prevention Research Group, 1999; Marks, Babcock, Cillessen, & Crick, 2013; Wentzel, 1993). The other item, "Which kids encourage other kids to cooperate and share?" was created for this study to assess which students have a prosocial influence on other students' behaviors.

Nominations for each item were summed and divided by the number of raters in the classroom to create an item proportion score. Scale scores were created by averaging proportion scores for the items in that scale and standardizing within classroom. Aggression and victimization variables were positively skewed and were transformed via the square root function prior to standardization, after which their distributions better approximated normality.

2.2.5. Peer nominations of additional peer-perceived characteristics

Additional peer nomination items used in prior research were included in the present study to measure *social preference* ("Which kids do you like the most?" minus "Which kids do you like the least?" Coie, Dodge, & Coppotelli, 1982), *perceived popularity* ("Which kids are the coolest/most popular in your grade?" minus "Which kids are the least cool/least popular in your grade?"; Sandstrom & Cillessen, 2006), *academic reputation* ("Which kids get good grades and usually know the right answer when a teacher asks a question?" minus "Which kids don't get very good grades and don't often know the right answer when a teacher asks a question?"; Gest et al., 2005), *shyness* ("Which kids are shy, don't talk much, or would rather play alone a lot?"; Coie & Dodge, 1983), and *sadness* ("Which kids are sad a lot?"; Masten et al., 1985). Nominations for each item were summed and divided by the number of raters in the classroom to create an item proportion score. Variables representing shyness and sadness were positively skewed and were transformed using the square root function prior to standardization, after which their distributions better approximated normality.

2.3. Procedures

All procedures were approved by the University's Institutional Review Board. Students completed peer nomination surveys in one-

on-one sessions with research assistants lasting an average of 20 min during the spring semester. For each item in the peer nomination survey, the research assistant would read the question aloud and ask the student to fill in circles next to the appropriate names on a roster of their classmates; to reduce order bias in the nominations, student names were randomly ordered with order varying from question to question. The rosters included the names of all students in their classroom, including those without parental consent, to reduce the potential bias of over-nominating someone just because their name is on the list rather than nominating the person the child really thinks fits the category but is not included in the list. Students were allowed to nominate as many classmates as they liked for each item. Any nominations obtained for students who did not have parental consent to participate were excluded from the dataset after the data was standardized by classroom.

Teachers completed behavior ratings for each participating child in their classroom during fall and spring semesters. On average, ratings took three to four minutes per student and teachers received $20 per semester for completing ratings for all students with consent in their classroom. In all schools, students remained with a single set of students throughout the day, although the class switched between two and three teachers for different subjects in some schools. In these cases, ratings were completed by the primary or homeroom teacher. Ratings from the spring were used when available given alignment with the timing of peer nominations; if students did not have spring teacher ratings (17.8% of sample); teacher ratings from the fall of the same year were used. Students without a spring teacher rating did not significantly differ from their peers with spring teacher ratings in terms of gender (χ^2 (1) = 0.02, p = 0.90), race/ethnicity (χ^2 (3) = 6.2, p = 0.10), receiving special education services (χ^2 (3) = 3.69, p = 0.16), or chronic absenteeism (χ^2 (1) = 2.56, p = 0.11). However, the two groups did differ on free or reduced price meals status with students missing spring teacher scores more likely to qualify for free or reduced price meals (χ^2 (1) = 4.8, p = 0.03).

To account for the fact that each classroom had a different set and number of raters for both the peer nominations and teacher ratings, all variables were standardized within classroom before being used in analyses. Standardizing by class transforms the raw scores into z-scores, and the variables now represent levels of aggression, victimization, and prosocial behavior with respect to peer-perceived and teacher-perceived classroom means (Cillessen, 2009). The benefits of this method are that a) it eliminates the impact of different numbers of raters in every classroom; b) it corrects for any potential differences in class culture; and c) it corrects for the fact that not every student had the opportunity to rate all of the participants in the sample (Cillessen, 2009). This procedure is used regularly in peer nominations research (e.g., Crick & Grotpeter, 1995; Cullerton-Sen & Crick, 2005; Gest et al., 2005; Hess & Atkins, 1998).

Analytic Plan.

Descriptive statistics were used to examine means and standard deviations for peer nominations. Correlations were conducted to examine bivariate relations between peer and teacher perceived behaviors. LPA accounting for nesting within classroom was then conducted to identify distinct profiles of youth who differed on measures of aggression, victimization, and prosocial behavior. All models were estimated using *Mplus,* Version 7.4 (Muthén and Muthén, 1998–2015). Guided by substantive theory, the number of profiles was determined based on comparison of fit statistics, and profile size considerations for a series of models. Model fit was assessed with the Bayesian information criterion (BIC) and the sample size-adjusted BIC (aBIC) based on evidence that the BIC and aBIC perform the best of the information criteria (Nylund et al., 2007). Decreases in the BIC and aBIC were considered evidence of improvement in model fit. Scree plots of BIC and aBIC values were examined to select the best fitting model based on where values no longer displayed meaningful declines (Masyn, 2013). The Vuong-Lo-Mendell-Rubin Likelihood Ratio Test (VLMR) was used to compare relative fit of a model with *k* profiles to a model with *k-1* profiles. Significant *p* values on these tests indicate that the k-1 profile model should be rejected in support of the k profile model (Nylund et al., 2007). However, it should be noted that when accounting for clustering as was done in this study, the VLMR is less reliable. Entropy and average posterior probabilities, which range from zero to one, were also examined with higher values indicating better classification accuracy.

Once peer- and teacher-reported LPA models were established, we used the auxiliary function in *Mplus* to investigate profile differences in peer-perceived social and behavioral characteristics. All models controlled for gender and intervention condition. Finally, the posterior class probabilities, values that indicate the individual's probability of being in each latent profile based on their pattern of responses (Nylund, 2007), were used to assign individuals to the profile for which their probability of membership was highest. Profile membership was then exported to SPSS, and a crosstabs was conducted to examine consistency between peer-identified and teacher-identified profiles.

3. Results

3.1. Descriptive statistics

Means and standard deviations for the number of nominations received and the number of students nominated for all peer-rated items are reported in Table 2. Correlations among the teacher and peer ratings of aggression, victimization, and prosocial behavior are displayed in Table 3. The majority of variables were significantly correlated. As expected, there were strong correlations between overt and relational forms of aggression and overt and relational forms of victimization within informant. Specifically, peer-perceived overt and relational aggression are highly correlated (r = 0.78) as are peer-perceived overt and relational victimization (r = 0.65). Similarly, teacher-rated overt and relational aggression are highly correlated (r = 0.71) as are teacher-rated overt and relational victimization (r = 0.67). Peer-perceived prosocial behavior was negatively correlated with overt (r = − 0.53) and relational aggression (r = − 0.37) as was teacher-perceived prosocial behavior (Overt aggression r = − 0.29; Relational aggression r = − 0.27) providing preliminary evidence that neither peers nor teachers perceive youth as engaging in both prosocial and aggressive behaviors. Cross-informant agreement on measures of aggression and victimization was more modest with the strongest correlation for

Table 2
Means and standard deviations for peer nomination items.

Item	M (SD) number of nominations	M (SD) number of students nominated
Which kids start fights, say mean things, and hit other kids?	3.25 (3.40)	3.28 (2.81)
Which kids try to keep other people from being in their group during activities, or tell their friends not to hang out with other people?	2.63 (2.44)	2.73 (3.11)
Which kids talk bad about other people behind their backs, or tell stories about people to make others not like them?	3.18 (2.87)	3.27 (3.34)
Which kids tell friends they will stop liking them unless their friends do what they say?	1.86 (2.09)	1.92 (2.83)
Some kids bully others. Who are these kids?	2.75 (3.05)	2.81 (3.05)
Some kids get bullied a lot. Who are these kids?	2.07 (2.75)	2.17 (2.32)
Which kids get picked on, beat up, yelled at, or hit a lot by other kids?	2.02 (2.47)	2.10 (2.48)
Which kids get left out of the group when one of their friends is mad at them?	2.21 (2.04)	2.27 (2.85)
Which kids get talked about behind their backs or have rumors or lies told about them?	2.91 (2.34)	3.05 (3.49)
Which kids get ignored by the group when someone is mad at them?	2.20 (1.87)	2.30 (3.05)
Some kids are helpful to others, cooperate with others, or share with others. Who are these kids?	7.21 (3.96)	7.27 (4.25)
Which kids encourage other kids to cooperate and share?	4.26 (3.51)	4.32 (3.54)
Some kids are shy, don't talk much, or would rather play alone a lot. Who are these kids?	1.79 (2.19)	1.73 (2.69)
Some kids get good grades and usually know the right answer when a teacher asks a question. Who are these kids?	5.53 (4.43)	5.54 (3.82)
Some kids don't get very good grades and don't often know the right answer when a teacher asks a question. Who are these kids?	3.74 (3.42)	3.85 (3.26)
Some kids are sad a lot. Who are these kids?	1.22 (1.82)	1.25 (1.79)
Which kids do you like the most?	6.40 (3.36)	6.47 (4.11)
Which kids do you like the least?	3.57 (2.67)	3.63 (2.24)
Which kids are the coolest/most popular in your grade?	4.38 (3.34)	4.49 (3.69)
Which kids are the least cool/least popular in your grade?	3.63 (2.97)	3.72 (3.58)
Which kids do you hang out with a lot?	4.41 (2.72)	4.47 (3.23)

Note. Means represent the average number of nominations received by a single student from their classmates on that item and the average number of students nominated for each item.

Table 3
Correlations among peer-perceived and teacher-rated aggression, victimization, and prosocial behavior.

Variable	1	2	3	4	5	6	7	8	9
1. Peer-perceived overt aggression	1.00								
2. Peer-perceived relational aggression	0.78**	1.00							
3. Peer-perceived overt victimization	−0.12*	−0.08	1.00						
4. Peer-perceived relational victimization	0.03	0.19**	0.65**	1.00					
5. Peer-perceived prosocial behavior	−0.53**	−0.37**	−0.06	0.01	1.00				
6. Teacher-rated overt aggression	0.43**	0.34**	0.02	0.04	−0.31**	1.00			
7. Teacher-rated relational aggression	0.31**	0.32**	−0.01	0.03	−0.17**	0.71**	1.00		
8. Teacher-rated overt victimization	0.18**	0.10	0.25**	0.19**	−0.22**	0.60**	0.43**	1.00	
9. Teacher-rated relational victimization	0.22**	0.22**	0.18**	0.18**	−0.16**	0.59**	0.63**	0.67**	1.00
10. Teacher-rated prosocial behavior	−0.29**	−0.27**	−0.17**	−0.19**	0.24**	−0.55**	−0.36**	−0.37**	−0.42**

* $p < 0.05$.
** $p < 0.001$.

overt aggression and the weakest correlation for relational victimization (Overt aggression: $r = 0.43$; Relational aggression: $r = 0.32$; Prosocial behavior: $r = 0.24$; Overt victimization: $r = 0.25$; Relational victimization: $r = 0.18$).

3.2. LPA classifications

A series of LPA was conducted separately for teacher- and peer-reported measures of aggression, victimization, and prosocial behavior to address the hypothesis regarding the number of latent profiles. Solutions specifying one to six profiles were compared (see Table 4).

3.3. Peer report

Initial comparison of fit statistics suggested that a six-profile solution fit the data best as the BIC and aBIC values were the lowest. However, examination of a scree plot of BIC values revealed that the line flattened between the four and five profile solutions indicating a minimal decrease in BIC values at this point. The VLMR indicated that a five-profile model fit the data better than a four-profile model. Examination of profile plots for the four and five-profile solutions revealed that the five-profile solution included a very

Table 4
Fit statistics for peer-identified and teacher-identified 1- through 6-class models.

	BIC	aBIC	LMR-LRT	LMR-LRT *p-value*	Entropy	Smallest class
Peer-identified						
1-class	4484	4453	N/A	N/A	N/A	100.0%
2-class	4259	4208	252.6	< 0.001	0.76	47.3%
3-class	4162	4093	127.6	0.05	0.82	24.1%
4-class	4102	4013	92.7	0.46	0.80	20.2%
5-class	4065	3957	69.3	< 0.001	0.83	4.6%
6-class	4034	3907	63.4	0.35	0.85	4.1%
Teacher-identified						
1-class	4252	4214	N/A	N/A	N/A	100.0%
2-class	3742	3690	529.6	< 0.001	0.92	32.7%
3-class	3679	3609	94.8	0.02	0.88	11.0%
4-class	3654	3566	57.3	0.33	0.87	6.7%
5-class	3633	3525	54.7	0.30	0.86	5.7%
6-class	3632	3505	34.0	0.35	0.86	5.6%

Note. BIC = Bayesian information criterion; aBIC = sample size-adjusted BIC; LMR-LRT = Lo-Mendell-Ruben likelihood ratio test.

small, not particularly meaningful profile (4.6% of sample) that reflected students who were not well known to their peers as evidenced by their receipt of very few nominations for any behaviors. Therefore, further analyses focused on the four-profile solution because it was generally supported by fit statistics, had high average posterior probabilities for membership in each of the profiles (0.88, 0.92, 0.91, 0.84 for profiles 1 through 4 respectively) and was consistent with theory and prior research (Schwartz et al., 2001).

3.3.1. Profile indicator patterns

Fig. 1 presents peer-nominated aggression, victimization, and prosocial behavior means for the four-profile solution. Examination of indicator patterns suggested the following profile structure: (1) a *Normative* profile (33.1%), characterized by scores within 0.5 SD of the classroom average on all indicators; (2) a *Prosocial* profile (26.4%), characterized by low aggression, low to average levels of victimization, and high levels of prosocial behavior; (3) an *Aggressive* profile (20.2%), characterized by high levels of relational and overt aggression, low to average levels of victimization, and low prosocial behavior; and (4) a *Victimized* profile (20.3%), characterized by high levels of relational and overt victimization and average levels of aggression and prosocial behavior.

3.3.2. Effects of gender and intervention condition on latent profiles

We next examined gender and intervention condition as covariates in the 4-profile model; neither variable was a significant predictor of profile membership.

3.3.3. Teacher report

Comparison of fit statistics for models with one to six teacher-reported profiles suggested that a six-profile solution fit the data best as the BIC and aBIC values were the lowest. However, examination of a scree plot of BIC values revealed that the line flattened between the three and four-profile solutions indicating a minimal decrease in BIC values at this point. The VLMR indicated that a three-profile model fit the data better than a two-profile model, but that a four-profile model was not a significantly better fit than a three-profile model. Moreover, examination of profile plots for the three and four-profile solutions revealed that the four-profile solution included a small class (6.7% of the sample) that reflected the division of one class in the three-class solution, into two smaller, less meaningful classes. Further analyses focused on the three-class solution because it was supported by fit statistics, had high average posterior probabilities for membership in each of the profiles (0.95, 0.86, 0.98 for profiles 1 through 3 respectively) and was relatively consistent with theory (Schwartz et al., 2001).

3.3.4. Profile indicator patterns

Fig. 1 presents teacher-rated aggression, victimization, and prosocial behavior means for the three-profile solution. Examination of indicator patterns suggested the following profile structure: (1) a *Normative* profile, characterized by the highest profile membership (58.6%) and ratings within 0.5 SD of the mean on all indicators; (2) a *Prosocial* profile (10.9%), characterized by low levels of aggression and victimization and high levels of prosocial behavior; and (3) an *Aggressive-victims* profile (30.4%), characterized by high levels of aggression and victimization and low levels of prosocial behavior.

3.3.5. Effects of gender and intervention design on latent profiles

We next tested both gender and intervention condition as covariates in the three-profile model. Only gender was a significant predictor of profile membership. Males were significantly less likely to be in the Normative profile compared to the Aggressive-victims profile (OR = 0.6, 95% CI [0.4, 0.8]).

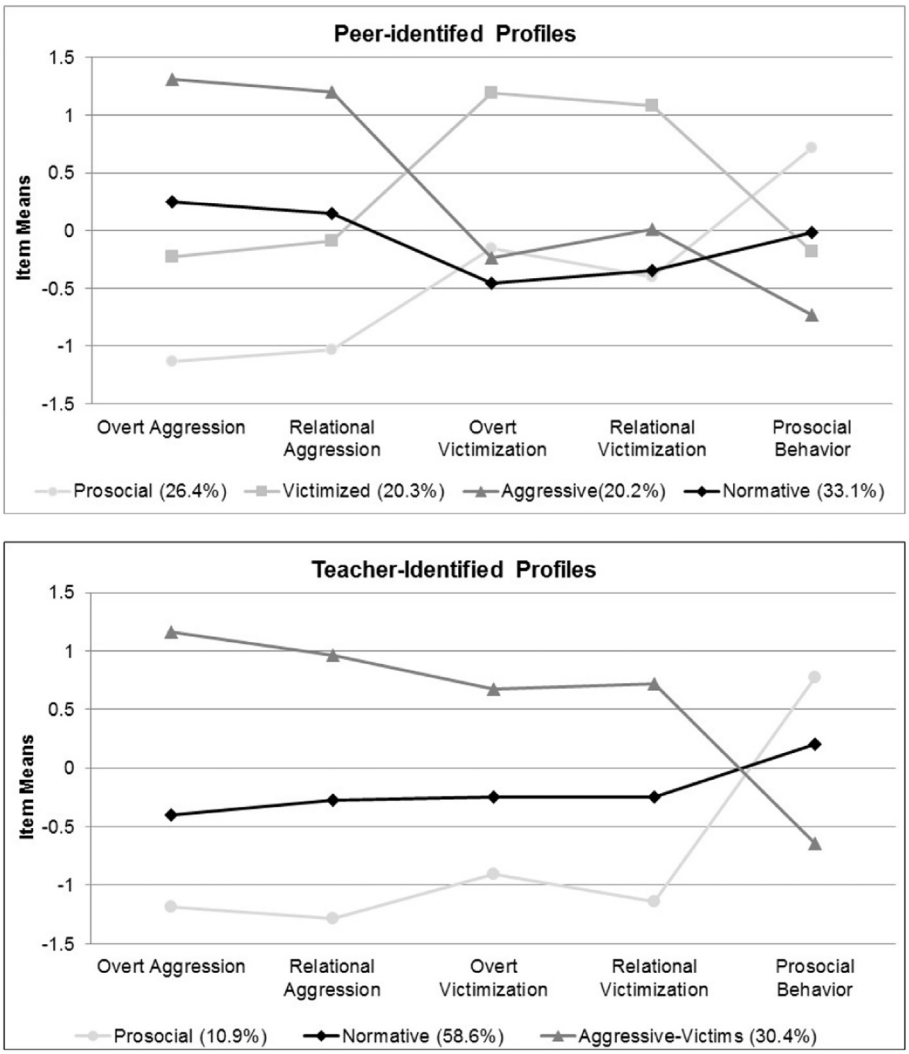

Fig. 1. Item mean plots in LPA model. Item responses that make up the latent classes are listed along the x-axis. The mean of each item is reported by class membership. Values shown on the y-axis indicate the mean of a particular item for participants within each latent profile. The percentage of preadolescents in each class in the peer-identified and teacher-identified classes are shown below the figures.

3.4. Comparing profiles on peer-identified characteristics

We next examined differences within peer and teacher-identified profiles on a range of peer-perceived social and reputational characteristics, including social preference (how well liked the student was by peers), perceived popularity, academic reputation, shyness, and sadness to validate the distinct nature of the profiles. These analyses were conducted separately for each model using the BCH auxiliary function in M-plus, which uses a measurement error weighted model to identify differences in a continuous distal outcome (Asparouhov & Muthen, 2014; Bakk, Tekle, & Vermunt, 2013). Table 5 presents means and standard errors for peer- and teacher-identified classes. Subscripts indicate a statistically significant pairwise comparison within each informant and variable category at the $p < 0.05$ level. Significant differences were present between all peer-identified classes. Teacher-identified classes demonstrated at least one significant class difference for all variables except perceived popularity.

3.4.1. Peer-identified profile differences

Students in the peer-identified Prosocial class were perceived as the most well liked ($M = 0.76$) and as having the best academic ability ($M = 0.82$) compared to all other groups. On other peer-perceived characteristics, Prosocial students tended to fall at or within one standard deviation of the mean (Popular $M = -0.02$; Shy $M = 0.18$; Sad $M = -0.09$); they were perceived as less popular and more shy and sad than Normative students, more popular but less shy and sad than Victimized students, and more shy than Aggressive students. Students in the Aggressive and Victimized classes were perceived as having poorer academic abilities (Aggressive $M = -0.77$; Victimized $M = -0.63$) and were less well liked (Aggressive $M = -0.84$; Victimized $M = -0.60$) than Normative and Prosocial students, but did not differ from each other on either of these characteristics. Conversely, Aggressive

Table 5
Latent profile means on social and reputational characteristics.

	Liked	Popular	Academic ability	Shy	Sad
Peer-identified classes					
Normative	$0.28(0.10)_a$	$0.54(0.09)_a$	$0.21(0.12)_a$	$-0.33(0.11)_a$	$-0.46(0.10)_a$
Prosocial	$0.76\ (0.09)_b$	$-0.02\ (0.09)_b$	$0.82(0.09)_b$	$0.18(0.16)_b$	$-0.09(0.12)_b$
Aggressive	$-0.84(0.11)_c$	$0.28(0.18)_{ab}$	$-0.77(0.12)_c$	$-0.40(0.12)_{ac}$	$-0.07(0.14)_{ab}$
Victimized	$-0.60\ (0.11)_c$	$-1.09\ (0.12)_c$	$-0.63(0.14)_c$	$0.66(0.15)_b$	$0.89(0.20)_c$
Teacher-identified classes					
Normative	$0.10(0.05)_a$	$-0.05(0.04)$	$0.03(0.05)_a$	$0.04(0.05)_a$	$0.07(0.04)_a$
Prosocial	$0.40(0.21)_a$	$0.07(0.14)$	$0.66(0.20)_b$	$0.15(0.29)_{ab}$	$-0.40(0.21)_b$
Aggressive-victims	$-0.32(0.09)_b$	$0.09(0.08)$	$-0.26(0.09)_c$	$-0.17(0.07)_b$	$-0.02(0.08)_{ab}$

Note. Parentheses contain standard errors. "Liked" indicates social preference. Within a specific auxiliary variable and informant type (e.g., within peer-identified class comparisons on the "Popular" variable), means with different subscripts indicate a statistically significant difference on that characteristic across profiles at $p < 0.05$. Subscripts do not indicate significant differences across informants.

students were more popular ($M = 0.28$) and less shy ($M = -0.40$) and sad ($M = -0.07$) than Victimized students, who were the most shy ($M = 0.66$) and sad ($M = 0.89$) and least popular ($M = -1.09$) across all four groups. Normative students were perceived as generally well liked ($M = 0.28$), the most popular ($M = 0.54$), as doing pretty well in school ($M = 0.21$) and as not shy ($M = -0.33$) or sad ($M = -0.46$).

3.4.2. Teacher-identified profile differences

Teacher-identified Prosocial and Normative students were largely similar on peer-perceived characteristics with two exceptions; teacher-identified Prosocial students were perceived as performing better academically ($M = 0.66$) and as being less sad ($M = -0.40$) than teacher-identified Normative students who were at the mean for both characteristics (Academic ability $M = 0.03$ Sad $M = 0.07$). On the other hand, students in the teacher-identified Aggressive-victims profile were perceived as less well liked ($M = -0.32$) and as performing poorly in school ($M = -0.26$) compared to students in the Normative and Prosocial profiles, and were perceived as less shy ($M = -0.17$) than teacher-identified Normative students ($M = 0.04$). The three groups were all close to the mean for perceived popularity and did not differ significantly from each other.

3.5. Comparing peer- and teacher-identified profiles

3.5.1. Crosstabs analyses

Table 6 provides results of crosstab analyses between the peer four-profile and teacher three-profile models, using most likely profile assignments for each participant based on posterior profile probabilities. There was modest agreement between peers and teachers regarding which students were and were not involved in peer victimization ($\chi^2\ (6) = 42.96, p < 0.001$). Specifically, over half of peer-identified Normative students were also identified as Normative by teachers and 22% of peer-identified Prosocial students were identified as such by teachers. There also seemed to be some fluidity between these two uninvolved profiles with 68% of peer-identified Prosocial students identified as Normative by teachers and 7.8% of peer-identified Normative students identified as Prosocial by teachers.

There was also modest agreement among peers and teachers about which students exhibited aggression and/or experienced victimization. Teachers identified 51% of peer-identified Aggressors as Aggressive-victims and just under a third of peer-identified Victimized students were identified as both aggressive and victimized by teachers. Interestingly, teachers identified a large proportion of peer-identified Aggressive (46.0%) and peer-identified Victimized (65.7%) students as Normative, whereas approximately 37% of peer-identified Normative students were identified as Aggressive-victims by teachers.

Table 6
Comparison of peer and teacher-identified classes.

Peer classes	Teacher classes			Total
	Normative	Prosocial	Aggressive-victims	
Normative	57 (55.3%)	8(7.8%)	38(36.9%)	103
Prosocial	58(68.2%)	19(22.4%)	8(9.4%)	85
Aggressors	29(46.0%)	2(3.2%)	32(50.8%)	63
Victims	44(65.7%)	4(6.0%)	19(28.4%)	67
Total	188	33	97	318

Note: Percentages reflect the percent of students in the peer class who were identified by teachers as being in the Normative, Prosocial, and Aggressive-victims classes, respectively.

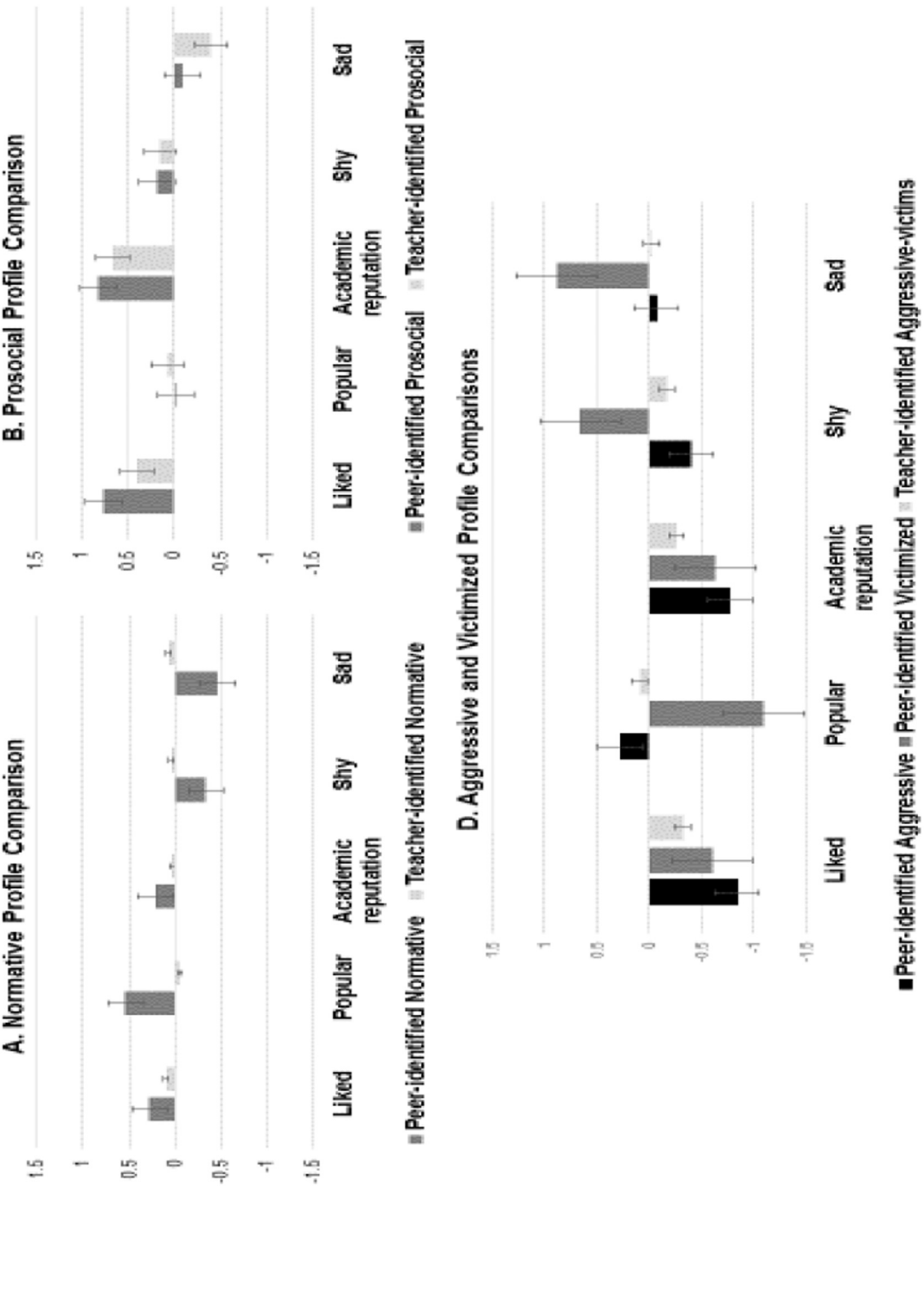

Fig. 2. Cross-informant latent profile means for social and reputational characteristics, organized by profile label. "Liked" indicates social preference. *Y*-axis values represent standard deviations from classroom mean. Brackets represent standard errors.

3.5.2. Comparing peer and teacher-identified profiles on peer-identified characteristics

To facilitate an examination of similarities and differences between peer- and teacher-identified latent profiles on other peer perceived characteristics, Fig. 2 displays means and standard errors on all peer perceived characteristics for each latent profile. Note that because the peer and teacher profiles were identified in separate models, we were unable to conduct direct tests of significance for cross-informant comparisons.

Peer- and teacher-identified Prosocial profiles tended to follow the same general pattern: Each profile was very close to the sample mean on perceived popularity, just slightly above the mean on shyness, at or slightly below the mean on sadness depending on the reporter group, and well above the mean on social preference and academic reputation. In terms of the Normative profiles, both peer- and teacher-identified Normative youth fell at or within one-half standard deviation of the mean on all characteristics. However, at times the characteristics were in different directions. Specifically, peer-identified Normative youth were above the mean on social preference, popularity, and academic reputation, and below the mean on shyness and sadness; teacher-identified Normative youth were at or just above the mean on all characteristics. Peer-identified Aggressive and teacher-identified Aggressive-victims profiles likewise demonstrated a similar pattern of characteristics. Both were somewhat above average in perceived popularity though teacher-identified aggressive-victims were closer to the mean than peer-identified Aggressive students, below average in social preference, academic reputation, and shyness, and relatively close to average in sadness.

The biggest observed differences between peer- and teacher-identified profiles concerned the two victimized profiles, peer-identified Victimized students and teacher-identified Aggressive-victims. Peer-identified Victimized students and teacher-identified Aggressive-victims were below the mean on social-preference and academic reputation. However, whereas peer-identified Victims had moderate to large deviations from average in perceived popularity, shyness, and sadness, teacher-identified Aggressive-victims did not differ substantially from the mean on these three characteristics.

4. Discussion

The majority of previous research examining subgroups of youth involved in peer victimization has relied on predetermined cutoff scores and the perspective of a single informant (Schwartz et al., 2001) to identify these youth. In addition, prior work has only included indicators of aggression and victimization to identify youth involved in peer victimization despite evidence that some youth use a combination of aggression and prosocial behavior to exert social dominance over peers (e.g., Hawley et al., 2007, 2008; Wurster & Xie, 2014). In contrast, the present study used LPA and data from peers and teachers to determine if patterns of aggression, victimization, and prosocial behavior could be represented by the hypothesized aggressor/victim profiles, and to examine whether peers and teachers perceive the same students as serving the same roles in peer victimization experiences.

Our results indicate that peer- and teacher-reports together with LPA can be used to identify subgroups of youth involved in peer victimization that show a pattern of involvement and related social/reputational correlates that are consistent with prior research (e.g., Bettencourt & Farrell, 2013; Giang & Graham, 2008; Schwartz et al., 2001). Specifically, peers identified youth involved in peer victimization as non-victimized aggressors and non-aggressive victims while teachers identified youth who were both aggressive and victimized. As expected, there was also modest agreement between peers and teachers about who was and was not involved in peer victimization. This underscores the value of including both informants in efforts to identify youth involved in peer victimization. We turn now to discuss similarities and differences between peer-identified and teacher-identified subgroups in more detail.

4.1. Similarities and differences between peer- and teacher-identified profiles

A primary similarity between informants was that *form* of aggression or victimization (i.e., overt or relational) did not distinguish any profiles from one another. These findings echo similar patterns in prior LCA research (Giang & Graham, 2008; Nylund et al., 2007; Williford et al., 2011) and suggest that youth perpetrate and experience victimization in multiple forms. This is supported by evidence of high correlations between overt and relational forms of aggression and victimization in the present study as well as in prior studies (Card et al., 2008).

Both peers and teachers identified a largest profile of Normative students who were within a half standard deviation of the mean on all profile indicators and social/reputational characteristics, which is consistent with studies using self- or peer-reports that have found large profiles of normative students using both traditional and person-centered approaches (e.g., Bettencourt et al., 2013; Lovegrove et al., 2012; Schwartz, 2000). Interestingly, just over half of peer-identified Normative students were identified as such by teachers while the greatest share of the remainder were identified as aggressive and victimized by teachers. While the specific race/ethnicity of the teachers in this study was not collected, we hypothesize that some of these differences may be explained by cultural mismatch between students and teachers wherein teachers, particularly non-Hispanic White teachers, tend to rate African American students as exhibiting more disruptive behaviors in the classroom, which leads to significantly more disciplinary referrals for these students (e.g., Bean, 2013; Kozlowski, 2015; McGrady & Reynolds, 2013). The student sample used in the present study was predominantly African American, which might heighten the chances that students were rated as being involved in peer victimization by their teachers. It is also possible in light of the different contexts (e.g., classroom versus cafeteria or playground) in which teachers and peers have the opportunity to interact with students that they hold different expectations for behavior such that what teachers perceived as aggression and victimization was perceived differently (e.g., as play fighting) by peers (Pellegrini, 2003; Smith, Smees, Pellegrini, & Menesini, 2002).

Some research indicates that the racial/ethnic context of the classroom influences peers' nominations of other students, particularly of African American students, with students from the racial/ethnic group holding the classroom majority being nominated

more frequently and more positively, particularly if the rater is from the same racial/ethnic group (Bellmore et al., 2007; Jackson et al., 2006). In light of the fact that 19 of the 22 classrooms in this study were majority (> 75%) African American, this bias might be at play in peers' nominations of aggressive and victimized students. Unfortunately, due to the small number of classrooms sampled and the lack of variability in racial/ethnic composition of the classrooms we were unable to examine the influence of the racial/ethnic composition of the classroom on the latent profiles. Future research with more diverse samples should explore the potential role that classroom composition plays on both peer nominations, which particularly focus on observable behavior, and teacher reports of behavior.

Both peers and teachers also identified profiles of Prosocial students, characterized by high levels of prosocial behavior, below average levels of aggression and victimization, and being perceived as well liked and academically successful. However, less than a quarter of peer-identified Prosocial students were identified as such by teachers whereas most peer-identified Prosocial students were labeled as Normative by teachers. Again, this disagreement may suggest that peers and teachers hold different expectations for what constitutes prosocial behavior driven by the differing contexts in which they interact with students. It is also possible that the use of different numbers of items for assessing prosocial behavior by peers versus teachers contributed to variation in who was identified as prosocial.

Prosocial behavior has not been included as a profile indicator in prior studies investigating patterns of aggression and victimization. Contrary to our hypotheses, the addition of prosocial behavior did not result in the identification of a bistrategic controller profile, characterized by elevated levels of aggression and prosocial behavior, and perceived as well-liked and popular (e.g., Hawley et al., 2007, 2008; Wurster & Xie, 2014). Though members of the Prosocial profiles were perceived as well liked in our study, they were not rated as particularly popular or as engaging in aggression. Instead, it appears that the inclusion of prosocial behavior helped further differentiate youth not involved in peer victimization. Specifically, Prosocial and Normative profiles were significantly different for all social and reputational characteristics in the peer model, validating the existence of the Prosocial profile as a qualitatively different subset of students in the eyes of peers. Among teachers, these two subgroups differed significantly in level of sadness and academic skills, which also suggests they may be qualitatively different students according to teachers. Therefore, future studies investigating patterns of aggression and victimization may benefit from inclusion of prosocial indicators.

Both peers and teachers identified students involved in aggression and victimization though peers appeared to be making distinctions between classmates who were aggressors and classmates who were victims, whereas teachers saw all victims as concurrently aggressive.

There may be several reasons different victimization patterns arose between peers and teachers. First, peers may be privy to more of the nuances of peer conflict than teachers are, particularly the reasons that disagreements and fights between students begin as well as when student actions are indicative of peer conflict versus play fighting (Smith et al., 2002). As children approach adolescence, they begin to spend more time with peers away from direct supervision by adults (Nansel et al., 2003) and become more adept at hiding behavior from adults. Many peer disagreements, then, may only come to the attention of teachers when they escalate – for instance, when a provoked student retaliates and starts a fight. It is possible that teachers do not see many instances of victimization among students because they are subtle or do not provoke retaliation, minimizing distinctions in teachers' perception between victims who retaliate and victims who remain passive. This may also explain why teachers identified just under half of peer-identified Aggressive and approximately two thirds of peer-identified Victimized students as Normative. Another possible explanation for these differences is that teacher ratings, because of the repetitiveness of filling out surveys for multiple students in the same sitting, may be more susceptible to bias. Specifically, such ratings may be prone to a halo effect wherein ratings for a particular student tended to be "good" or "bad" across the board and nuances between aggression and victimization were less evident. As has already been noted, teacher ratings are also susceptible to bias due to cultural mismatch wherein teachers tend to perceive African American students as more aggressive/disruptive than their non-African American peers (McGrady & Reynolds, 2013; Wright, 2015).

Gender was only a significant predictor of class membership in the teacher-identified model with boys being more likely than girls to be in the Aggressive-victims class compared to the Normative class. Although a number of prior studies have found that boys engage in more overt aggression than girls and are therefore overrepresented in aggressor and aggressive-victim subgroups (e.g., Estell et al., 2007; Lovegrove et al., 2012; Nansel et al., 2001; Nylund et al., 2007; Schwartz et al., 2001; Toblin et al., 2005), this difference has at times been attenuated among urban African-American youth (Bradshaw et al., 2010; Miller-Johnson et al., 2005). Accordingly, studies using primarily African-American samples and self-reports of aggression and victimization have found a similar lack of gender differences in aggressive and victimized class membership or that boys are less likely to be aggressive-victims (Bettencourt & Farrell, 2013; Bettencourt et al., 2013). The fact that teachers perceived boys as more likely to be in the Aggressive-victims subgroup is not entirely surprising in light of research that African American males in particular are more likely to be viewed by teachers as disruptive/aggressive (Wright, 2015).

4.2. Strengths and limitations

The analytical approach of LPA offers considerable strengths over traditional classification methods for aggressive and victimized subgroups of youth. For instance, our analyses suggested that whether a student engages in any aggression or victimization, rather than the form of the behavior, is a better indicator of distinctions between subgroups. The analyses also suggested that, contrary to expectation, teachers in this community did not make distinctions between aggressors and victims, whereas peers were less likely to identify classmates as engaging in both behaviors. It would likely have been difficult to identify these differences using traditional approaches that impose a predetermined class structure derived from standard deviation cutoff scores. The inclusion of prosocial behavior as an indicator of profile membership was also a strength as it supported further differentiation of students who were not

involved in peer victimization identifying two meaningfully different subgroups – Normative and Prosocial youth. Finally, the use of both peer and teacher report as informant sources was an additional strength given that both are under-utilized informant sources in research on person-centered approaches to identifying youth involved in peer victimization to date. Considering that we found both similarities and differences in profile structure compared to prior research using person-centered approaches with self-reported indicators, further studies using these informants are needed to replicate and validate our results.

Two characteristics of sample selection may limit the conclusions we can make from this research. Nylund et al. (2007) recommend relatively large sample sizes (i.e., $N \geq 500$) when utilizing LPA in order to have enough power to detect class or profile differences. In order to maximize sample size, we included classrooms from the intervention group and the control group in our sample, as well as a few classrooms with relatively low overall participation rates for the peer nomination survey. To account for potential differences due to intervention condition, we standardized all variables within-classroom, which eliminated variation at the classroom level from the model (this accounted for differences in teachers' interpretations of survey ratings as well). Thus, variables should be interpreted as levels of aggression, victimization, prosocial behavior, and other characteristics *relative to one's classmates*, rather than as levels relative to the population. The lack of a significant effect of intervention condition suggests that profile structure and membership within each classroom was not affected by intervention group assignment. It should be noted that limited sample size also prevented the exploration of classroom-level effects (e.g., classroom racial/ethnic composition) on peer and teacher ratings.

Low participation rates in a few classrooms may limit the reliability of some peer-nominated data, most notably the social preference variable. Crick and Ladd (1990) have suggested that participation rates under 60% may produce unreliable social preference scores. Our results for social preference demonstrated concurrent validity in that profiles expected to be low in social preference (Aggressive, Victimized, and Aggressive-Victim classes) did in fact show this pattern; however, we recommend that these results be viewed with caution. Peer nominations of reputational characteristics, however, are substantially more robust than social preference to low sample sizes. Marks et al. (2013) have shown that ratings of prosocial behavior and popularity are reliable at 30% participation rates, and aggressive behavior is reliable at as low as 10% participation rates. All but two of the 22 classrooms had participations rates above 30%, suggesting that participation rate is unlikely to have significantly affected the reliability and validity of our profile indicators or the reputational characteristics.

Though the use of a majority African-American urban sample is a strength of this study due to the underrepresentation of this population in research on subgroups of aggression and victimization to date, the generalizability of our results may be limited due to unique characteristics of the sample and the neighborhoods in which the schools were located. Many of the schools in which data collection took place were characterized by high levels of disruptive behavior and teacher turnover. It is possible that different profile structures would be identified or significant gender differences in class membership would be present using other populations. In addition, research on cultural mismatch theory suggests that teacher ratings can be biased when rating students from a cultural group different than their own (McGrady & Reynolds, 2013; Wright, 2015). Unfortunately, we did not have access to information on teacher's racial/ethnic group membership. We were therefore not able to explore whether differences in teacher and student race/ethnicity influenced teacher ratings.

4.3. Implications

The current findings have important implications for efforts to identify youth involved in peer victimization. In light of the significant social, reputational, and psychological correlates and consequences of involvement in peer victimization as a victim, perpetrator, or both (e.g., Clemans et al., 2014; Darney, Reinke, Herman, Stormont, & Ialongo, 2013; Hawker & Boulton, 2000; Juvonen et al., 2003; Ladd et al., 2017; Lovegrove et al., 2012; McDougall & Vailliancourt, 2015; Reinke, Herman, Petras, & Ialongo, 2008), early identification of youth involved in peer victimization is critical. Our findings illustrate that both peers and teachers distinguish between youth involved and not involved in peer victimization, but these informants do not completely agree on which specific students are involved and what role they play. It is important to remember that each informant possesses his/her own biases based on their cultural backgrounds and experiences, and that each informant's reports are shaped by the different contexts in which they interact with students. Therefore, this study underscores the importance of incorporating data from multiple informants when attempting to identify youth involved in peer victimization (Achenbach et al., 1987; Card & Hodges, 2008). For practicing school psychologists, the results of this study also emphasize the importance of observing children in multiple contexts, in the classroom and perhaps in play environments, in order to gather a complete picture of child behavior. If practitioners rely solely on teacher reports, or observing children in the classroom, they may miss key behaviors.

This study also has implications for intervention efforts. Our findings illustrate that youth involved in peer victimization reflect a heterogeneous group characterized by distinct patterns of aggression, victimization, and prosocial behavior, and these behavioral differences are associated with unique social and reputational challenges. In light of these differences, these groups are likely to benefit most from interventions that target their unique needs (Farrell, Henry, & Bettencourt, 2013) as opposed to or in addition to universal prevention efforts. For example, perpetrators (non-victimized aggressors and aggressive-victims) of peer victimization might benefit most from interventions targeting social-cognitive deficits known to contribute to aggression such as self-regulation skill deficits and beliefs supporting the use and benefits of aggression (e.g., Coping Power; Lochman, Wells, Qu, & Chen, 2013). On the other hand, victims of peer aggression might benefit most from interventions helping them to process their traumatic experiences of being victimized (e.g., Trauma-focused Cognitive Behavioral Therapy; Cohen, Mannarino, & Deblinger, 2010) as well as developing social skills to make new healthier friendships. In addition, teachers may benefit from interventions designed to strengthen their classroom management skills (e.g., PAX GBG, Embry et al., 2003; Incredible Years - Teacher Classroom Management Program, Webster-Stratton, Reid, & Hammond, 2004) as off-task/disruptive behaviors in the classroom not only detract from instruction and

reduce teachers' feelings of confidence, but also provide opportunities for peer victimization to occur.

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