

EMPIRICAL ARTICLE

Heterogeneity of adolescent bullying perpetrators: Subtypes based on victimization and peer status

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Funding information

Research Council of Finland (INVEST Research Flagship Center), Grant/Award Number: 320162; Eunice Kennedy Shriver National Institute of Child Health and Human Development of the National Institutes of Health, Grant/Award Number: F32HD100054

Abstract

We identified different types of adolescent bullying perpetrators and nonbullies based on peer-reported bullying, victimization, and peer status (popularity, likeability, and rejection) and examined differences between bully subtypes in typical forms of bullying perpetrated. Moreover, we studied how bully subtypes differed from nonbullies with varying levels of victimization and peer status in academic and psychosocial adjustment. The study utilizes data from 10,689 adolescents (48.3% boys, mean age 14.7 years). Latent profile analysis identified three distinct subgroups of bullies: popular-liked bullies (13.5%), popular-rejected bully-victims (5.8%), and bully-victims (6.9%), and four groups on nonbullies. High-status bullies (popular-liked and popular-rejected) resembled nonbullies in many ways and had even lower social anxiety, whereas bully-victims were the most maladjusted group. Overall, popularity seems to protect adolescents from social anxiety, and victimization is related to internalizing problems. Results suggest that bullying, victimization, and peer status can be used to identify distinct subtypes of bullies.

KEY WORDS

bullying, bully-victims, latent profile analysis, peer status, popularity, victimization

For half a century, researchers have attempted to understand what kind of children and adolescents bully their peers at school. Bullying perpetration has been associated with a plethora of negative correlates such as externalizing and internalizing problems as well as academic challenges (Cook et al., 2010), but also with more adaptive outcomes such as high peer status (Garandeau et al., 2014) and access to romantic partners (Volk et al., 2022). The somewhat discordant findings may be due to focus on continuous variables, rather than person-oriented analyses which can identify heterogeneity among bullying perpetrators (Peeters et al., 2010), as well as the fact that the correlates of bullying vary across development (Cook et al., 2010).

Adolescence in particular is a developmental period when different types of bullying perpetrators are likely to be detected. For some youth, bullying behavior might be driven by characteristics or cognitions (e.g., lack of empathy;

attitudes approving aggression; problems in emotional and behavioral regulation) that have developed early on and contributed to aggressive behavior (including bullying) throughout school years. For others, bullying may be motivated by status concerns, or susceptibility to peer influence, both of which are prominent in adolescence. Among adolescents (unlike earlier in development), bullying perpetration is often rewarded with popularity among peers (Pouwels, Lansu, & Cillessen, 2018), which may especially encourage individuals with strong status goals to engage in bullying. Adolescents are particularly sensitive to peer feedback (Laursen & Veenstra, 2021) and might also join in bullying just to conform to group norms favoring such behavior (Burns et al., 2008). The prevalence of bullying perpetrators tends to increase from childhood to adolescence (López-Castro et al., 2023), further suggesting that some individuals may only begin bullying during this developmental period.

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In addition, previous person-centered studies have found popular and liked students to be one group for younger grades, but in older grades popular and liked adolescents formed distinct profiles (van den Berg et al., 2015), indicating that adolescence might be particularly informative developmental stage to consider various peer status measures in relation to bullying.

The heterogeneity of bullies has so far been addressed in two distinct literatures: first, the literature on “pure bullies” versus “bully-victims” (e.g., Yang et al., 2016) and second, research focusing on the peer status (popularity, likeability, and/or rejection) of bullies (Wiertsema et al., 2022). Consequently, we know that some bullies are also victimized, whereas others are not and that some bullies are popular and others are not. However, we still do not have a comprehensive understanding of different types of bullies taking both victimization and peer status simultaneously into account. Bringing together the two lines of research, we examine the subtypes of adolescent bullying perpetrators based on their peer-reported bullying and victimization, as well as different facets of peer status (popularity, likeability, and rejection). We further investigate the forms of bullying among the identified bully subtypes, as well as academic difficulties and psychosocial adjustment comparing different types of bullies to each other and to nonbullies with varying levels of victimization and peer status.

Heterogeneity of bullies

Previous research has identified the need to differentiate between students who bully others instead of assuming them to be a homogeneous group (Peeters et al., 2010). Traditionally, researchers have been interested in whether bullying perpetrators are victimized or not by examining differences between bully-victims and pure bullies (e.g., Guy et al., 2019; Solberg et al., 2007; Veenstra et al., 2005). Another line of research has differentiated bullies based on their popularity, likeability, or rejection (e.g., Berger et al., 2015; de Bruyn et al., 2010). Although some youth who bully their peers are rejected and marginalized (e.g., bully-victims, Cook et al., 2010), for others, bullying may be an effective way to use their well-developed social cognition and manipulating skills (Sutton et al., 1999a, 1999b) to gain or maintain popularity and social dominance (Caravita & Cillessen, 2012; de Bruyn et al., 2010; Juvonen et al., 2013). Indeed, previous research (identifying subgroups only based on bullying and victimization) has found that bully-victims had lower peer status than pure bullies (Guy et al., 2019). Despite considerable amount of research on these topics, victimization and peer status have not simultaneously been used to identify heterogeneous groups of bullying perpetrators. However, a recent study (Malamut et al., 2022) did identify different subgroups of victimized adolescents based on peer status and found a group of popular victimized youth; this group was more aggressive than their lower-status victimized peers and used more (proactive and indirect) aggression than

peers who were popular but not victimized. Still, this study only considered popularity as an indicator of peer status.

Whereas popularity entails one's reputation as being visible and influential in the peer group (usually measured by asking peers whom they see as most popular), likeability (social acceptance) and rejection reflect more affective and relational responses by asking students who they like the most or the least (Cillessen & Marks, 2011; van den Berg et al., 2020). Bullying and popularity have consistently been positively related, and the association becomes stronger by age (Guy et al., 2019; Mayeux et al., 2011; Pouwels, van Noorden, et al., 2018), which may be due to the increasing value of popularity and to aggression being an effective way to obtain it in adolescence (Caravita & Cillessen, 2012; Duffy et al., 2017; Pouwels, Lansu, & Cillessen, 2018). This is in line with resource control theories suggesting that some aggression is functional and leads to adaptive outcomes (Hawley, 2003; Hawley et al., 2007), and it further highlights adolescence as an important developmental period to study bullying in relation to peer status. A common perception is that “bullies may be popular, but not well-liked” (e.g., de Bruyn et al., 2010; van den Berg et al., 2020), as studies have also found positive associations between bullying and rejection (Lee, 2009; Salmivalli et al., 1996; Wiertsema et al., 2022), and either nonsignificant or negative associations between bullying and likeability (Wiertsema et al., 2022). However, it has rarely been examined whether the same aggressive students are perceived popular *and* disliked/rejected. In person-centered analyses, highly popular perpetrators have been found to be socially skilled (Peeters et al., 2010) and viewed by their peers as cool (Rodkin et al., 2006), but yet disliked (Berger et al., 2015; Farmer, Estell, Bishop, et al., 2003). Conversely, Vaillancourt et al. (2003) identified a group of bullies who were both popular and well-liked.

Indeed, recent research has challenged the perception that bullying is unilaterally associated with being disliked. For example, Pozzoli and Gini (2021) found that bullying did not predict social preference over time, suggesting that bullying may not necessarily come at the cost of disliking by the majority of the group, but perhaps only by few peers, especially those victimized by them (see also Hafen et al., 2013; Veenstra et al., 2010). It is also possible that some popular bullies are disliked/rejected, whereas others are well liked. However, to date only few studies have examined whether the same aggressive students are perceived popular *and* disliked/rejected (Berger et al., 2015; Farmer, Estell, Bishop, et al., 2003; Vaillancourt et al., 2003), and none of the previous studies have taken their level of victimization into account: The extent to which bullies are popular and/or disliked might vary depending on whether they are only perpetrators or also targets of aggression.

Forms of bullying

Bully-victims differ from pure bullies in that they demonstrate higher levels of direct (physical and verbal) bullying

(Marengo et al., 2021; Yang & Salmivalli, 2013). In a study comparing adolescent bully-victims and pure bullies, verbal bullying was the most prevalent form among bully-victims, while relational bullying was the most common form among pure bullies (Shahrour et al., 2020). It has been hypothesized that being socially powerful and well-connected in the peer network makes it easier to engage in indirect or relational bullying (Garandeau et al., 2014) that demand sophisticated, even manipulative, social skills (Juvonen & Graham, 2014). There is indeed some support for indirect forms of bullying being more strongly associated with popularity than direct forms (Cillessen & Mayeux, 2004; Peeters et al., 2010; Prinstein & Cillessen, 2003). There is also some evidence that bully-victims are higher in cyberbullying perpetration than pure bullies (Yang & Salmivalli, 2013)—but cyberbullying has also been associated with higher popularity. Badaly et al. (2013) discovered that more popular youths were concurrently more aggressive (but also more victimized) online than their peers, and popularity was associated with increases in online aggression over time.

As elaborated above, previous studies have found bully-victims to be more likely than pure bullies to engage in direct (verbal and physical) bullying and popular bullies to be more likely than less popular ones to engage in indirect bullying. Regarding cyberbullying, the evidence is mixed. None of the previous studies, however, have taken victimization and peer status of the perpetrators into account at the same time—this might lead to a more comprehensive view of the forms of aggression among different subtypes of bullies.

Psychosocial adjustment of different types of bullies

Bully-victims face the most significant challenges of all children and youth involved in bullying across a multitude of outcomes (Kennedy, 2021; Loch et al., 2020; Yang et al., 2016). They tend to be more victimized than pure victims (Demaray & Malecki, 2003) and more aggressive than pure bullies (Kim et al., 2006; Salmivalli & Nieminen, 2002). They also have fewer friends (Eslea et al., 2004), more academic difficulties (Graham et al., 2006) and internalizing problems (Haynie et al., 2001; Özdemir & Stattin, 2011), lower self-esteem (O'Moore & Kirkham, 2001; Pollastri et al., 2010), and more externalizing problems and suicidal ideation (Kelly et al., 2015) than either pure bullies or victims. Even bully-victims, however, seem to comprise a diverse array of individuals, in particular during adolescence (Ettekal & Ladd, 2017).

Further, both pure bullies and bully-victims have been found to be more maladjusted than nonbullies, although in somewhat different ways. Both groups show elevated levels of externalizing behaviors, such as aggression, hyperactivity and conduct problems, delinquency, and substance use, and both tend to struggle academically (Baiden et al., 2020; Bardach et al., 2022; Farmer, Estell, Leung,

et al., 2003; Graham et al., 2006). They also seem to have more favorable attitudes toward aggression (O'Brennan et al., 2009) and lower levels of cognitive and especially affective empathy (van Noorden et al., 2015). Regarding internalizing symptoms, the results are more mixed. Although in some studies both groups have been found to portray anxiety and depression (Holt & Espelage, 2007) or psychosomatic problems (Gini & Pozzoli, 2013), other studies have found pure bullies to resemble noninvolved students in self-esteem and depressive symptomatology (Estévez et al., 2009) or to be even less anxious and have more positive self-views than nonbullies (Graham et al., 2006). When bullying perpetration has been associated with internalizing problems, it has typically been measured with self-reports and without controlling for victimization (e.g., Azevedo Da Silva et al., 2020). When peer reports are used and both bullying perpetration and victimization are considered, perpetration might not be associated with internalizing symptoms at all (e.g., Khatri et al., 2000).

In contrast, studies examining psychosocial adjustment of high-status perpetrators are scarce. As an exception, Hartl et al. (2020) found that aggressive popular adolescents were more lonely than bistrategic popular and prosocial popular adolescents. The aggressive popular group was also angrier and more disruptive than all other groups. In addition, research has associated bullying perpetration with adaptive functioning such as advanced social cognitions (Sutton et al., 1999b) and high self-esteem (Olweus, 1993), as well as success in pursuing resources such as social dominance (Reijntjes et al., 2013), social status (Wiertsema et al., 2022), and romantic partners (Volk et al., 2022). Building on these previous disparate literatures, but taking both victimization and peer status into account simultaneously, we aim at providing a broad picture of psychosocial adjustment of bullying perpetrators.

The present study

Although adolescent bullies are not all alike, the heterogeneity of bullies considering both their levels of victimization and peer status has not been addressed in previous studies—instead, the literature on bullies vs. bully-victims has been distinct from the literature on the high peer status of (some) bullies. Therefore, our analyses should be considered explorative in nature. Following a person-centered approach, the current study aims at identifying subtypes of adolescent bullying perpetrators and nonbullies based on peer-reported bullying perpetration, victimization, and three indices of peer status (popularity, likeability, and rejection). We expect to identify at least three subtypes of bullies: popular (but not necessarily well-liked) bullies who are neither victimized nor rejected; bully-victims who are highly victimized and rejected but neither popular nor liked; and “average” perpetrators that are close to nonbullies in victimization and peer status.

We further investigate whether the identified subtypes differ in their typical forms of bullying. Finally, we study differences between the bully subtypes (and the identified nonbully subtypes with varying levels of victimization and peer status) in academic difficulties and psychosocial adjustment.

METHOD

Participants and procedure

Data came from the RCT of the KiVa antibullying program. Among schools with middle school grades providing basic education that had volunteered to participate, stratified random sampling by province and language was used to include schools from all five provinces of mainland Finland (see Kärnä et al., 2013 for a detailed description). This procedure resulted in a sample of 78 schools (39 control and 39 intervention) for Grades 7–9. The present study utilized the first wave (pretest) of the RCT, in which the original middle school sample included 12,750 participants. All students with an active parental consent and with data on peer-reported bullying perpetration measure ($N = 10,830$) were included in the study. Because the variables used to identify the subgroups of bullies in the current study were based on peer nominations, we ensured reliability (i.e., enough peers giving nominations, Garandeau et al., 2023) by excluding classrooms with fewer than 10 students and classrooms with students in multiple grades. Classroom is used as a reference group in peer nominations, since in Finland students study in classrooms with same peers most of the time even in middle school, and therefore, they know their classmates better than other potential reference groups, for example, grade mates. The final analytic sample included 10,689 students (48.3% boys, mean age 14.7 years) from 70 schools and 614 classrooms. The classroom size ranged from 10 to 27 students ($M = 19.98$, $SD = 2.92$), and the average participation rate across classrooms was 94.4%. Overall, the sample was demographically representative of middle schools in Finland and most adolescents were native Finns, with the proportion of immigrants (i.e., individuals born outside of Finland) being less than 2%.

The data were collected in the end of spring term during regular school hours in the schools' computer labs. The process was administered by teachers who had been provided with detailed instructions and who were offered support via phone or e-mail prior to and during the data collection. Students logged into an online questionnaire with individual passwords. At the beginning of the session, bullying was defined according to the Olweus Bully/Victim Questionnaire (Olweus, 1996), emphasizing the repetitive nature of bullying, intention to harm, and power imbalance between the bully and the victim. A shortened version of the definition was visible at the upper part of the computer screen while questions related to bullying and victimization were being

answered. The order of the questions was randomized across the participants.

Measures

Peer nomination measures

Bullying and victimization

Peer-reported bullying perpetration and victimization were measured with bullying and victimization subscales from the Participant Role Questionnaire (PRQ, Salmivalli & Voeten, 2004). Three items assessed bullying (initiates bullying; encourages others to join in bullying; always finds new ways of harassing the victim) and three others victimization (is pushed and hit; is called nasty names or made fun of; is talked about in a mean way). For all the items, students could nominate an unlimited number of classmates from the name list on the computer screen, being also allowed to select “no one.” Those without parental consent or not participating in the study for other reasons could also be nominated, but they were excluded from the final study sample. To avoid response bias, the order of the names was randomized across participants. Nominations received for each item were divided by the number of possible nominations in the classroom, resulting in a proportion score ranging from 0.00 to 1.00 for each student on each item. The three items of each subscale were averaged to form composite scores for peer-reported bullying ($\alpha = .93$) and victimization ($\alpha = .76$).

Rejection, likeability, and popularity

Following a procedure similar to peer-reported bullying and victimization, students were asked to choose from a list of their classmates an unlimited number of classmates they liked the least (rejection) and the most (likeability), and those they perceived as most popular (popularity). For each question, the number of nominations received was divided by the possible number of nominations to form a proportion score ranging from 0.00 to 1.00 for each student.

Self-report measures

Bullying forms

Questions about nine specific ways of bullying others from the revised Olweus Bully/Victim Questionnaire (Olweus, 1996) were used to measure forms of bullying. Students reported on a 5-point scale (0 = not at all, 1 = only once or twice, 2 = two or three times a month, 3 = about once a week, and 4 = several times a week), how often they had bullied others at school in the last couple of months in different ways. Following Olweus et al. (2019), three scales were created to capture *verbal bullying* ($\alpha = .71$; I called someone by nasty names, laughed at their face or teased them in insulting ways; I called someone by nasty names or remarks about their race or color; I bullied someone by names, signs or acts with sexual connotation), *physical bullying* ($\alpha = .79$;

I hit, kicked, or pushed someone; I took money or other things from someone or damaged their belongings; I threatened someone or forced them to do things they did not want to do), and *indirect bullying* ($r = .44$; I ignored or excluded someone; I spread lies about someone and tried to make others to dislike them). Further, one item was used to measure *cyberbullying* (I bullied someone via mobile phone or internet by nasty or hurtful messages, phone calls, photos, or other means).

Academic difficulties

Four-item scale asking about difficulties in reading, reading comprehension, math, and foreign languages was used to assess academic difficulties. Students evaluated on a 4-point scale (0 = no difficulties, 1 = small difficulties, 2 = medium difficulties, and 3 = large difficulties) whether they had difficulties in each domain. Scores of the four items were averaged ($\alpha = .67$).

Depressive symptoms

Seven items derived from the Beck Depression Inventory (Beck et al., 1988) were used to measure depressive symptoms. Students responded on a 5-point Likert scale to questions such as “How is your mood? (0 = Sunny and good, 4 = So depressed and melancholic that I cannot stand).” Scores of the seven items were averaged ($\alpha = .90$).

Social anxiety

Nine-item version of the Social Anxiety Scale for Adolescents (SAS-A; La Greca & Lopez, 1998) was used to measure social anxiety. Students responded on a 5-point Likert scale (0 = not at all; 4 = all the time) to items such as “I worry about what others think of me” and “I’m afraid to invite others to do things with me because they might say no.” Scores of the nine items were averaged ($\alpha = .92$).

Self-esteem

Students’ self-esteem in the peer context was measured on a ten-item scale derived from the Rosenberg Self-Esteem Scale (Rosenberg, 1965). The questions were slightly adapted by instructing students to “report the way you feel about yourself when around peers” (Salmivalli & Isaacs, 2005). Participants responded on a 5-point Likert scale (0 = not true at all, 4 = exactly true) to items such as “I feel that I have a number of good qualities” and “Sometimes I feel really useless.” Five negatively worded items were reversely coded. Scores of the ten items were averaged ($\alpha = .87$).

Antibullying attitudes

We used nine, slightly modified items from the Pro-victim Scale (Rigby & Slee, 1991) to measure antibullying attitudes. The items were a broadly representative sample of items with the highest factor loadings from the original twenty-item Pro-victim Scale. Both attitudes toward bullying, such as “It is wrong to join in bullying,” and attitudes on victims such as “Kids who are weak are just asking for trouble,”

were included. Students responded on a 5-point scale ranging from 0 = completely disagree to 4 = completely agree. Six negatively worded items were reversely coded. Scores of the items were averaged ($\alpha = .77$).

Empathy toward victims

Seven items designed for the evaluation of the KiVa program were used to measure empathy toward victims of bullying. The scale consists of items such as “When a bullied child is sad, I feel sad as well.” Students evaluated on a 5-point scale (0 = never to 4 = always) how often the statements were true for them. The item scores were averaged ($\alpha = .90$).

Analytic strategy

The analyses were conducted in two phases. First, latent profile analyses (LPA) with $k=2$ to $k=9$ profiles were estimated to identify the optimal number of latent profiles utilizing *mplus.lca* function from the R-package Misty (Yanagida, 2024) to run Mplus statistical package (Version 8.8; Muthén & Muthén, 1998–2022) with peer-reported bullying, victimization, rejection, likeability, and popularity as profile indicators. Instead of using a cut-off criterion to select the bullying perpetrators (as, e.g., Peeters et al., 2010 did), we conducted the LPA among the entire adolescent sample. This was done to take into account the full range of bullying perpetration, as well as to potentially find profiles of nonbullies with similar peer status than the bully subtypes. This enables us to compare bullies and nonbullies with various victimization and peer status profiles and thus try to determine whether it is indeed bullying perpetration (and not victimization or peer status) that explains potential differences between the profiles in academic and psychosocial adjustment. In all analyses, the COMPLEX command was used to take into account the possible differences between classrooms (Muthén & Muthén, 1998–2022) to estimate the model at the level of the whole sample but correct for distortions in standard error estimates caused by the clustering of observations (i.e., between-level variation). Bullying, victimization, and peer status variables were standardized within classroom to examine status relative to one’s own peer group. We examined nine within-profile variance–covariance structures (Table 2), resulting in 8 ($k=2$ to $k=9$ profiles) \times 6 (within-profile variance–covariance structures) = 48 latent profile models. Descriptions of the different variance–covariance structures are presented in Appendix S1. The within-profile variance–covariance structures represent different assumptions about the variance and covariance of the indicators both within and between latent profiles. In order to identify the best model, all the different structures must be tested as the best within-profile variance–covariance structure is not known a priori (Masyn, 2013).

Statistical indicators as well as theoretical considerations were combined to select the optimal latent profile model from the 48 models. As statistical indicators, we used Akaike information criterion (AIC), Bayesian

information criterion (BIC), sample size adjusted BIC (aBIC), Lo–Mendell–Rubin likelihood ratio test (LMR–LRT), Lo–Mendell–Rubin adjusted LRT test (A–LRT), the entropy value as a measure of classification accuracy, and profile prevalence (i.e., profiles with less than 5% of participants dismissed). Across the within-profile variance–covariance structures, the model with the lowest value for AIC, BIC, and aBIC is judged as the relative best. Along with theoretical considerations and the interpretability of the profiles, we relied on the principle of parsimony, which states that the more parsimonious solution should be selected if the additional profile in a k profile model represents only a slight variation on a profile found in a $k-1$ profile model. All analyses were conducted using the maximum likelihood estimation method with robust standard errors (MLR). We requested 100 random sets of starting values with 50 initial stage iterations and 10 final stage optimizations. To ensure that the estimation process found the global solution, we checked whether the highest log-likelihood was replicated in at least two final stage optimizations and when necessary, increased the specifications up to 500 random sets of starting values, 50 initial stage iterations, and 50 final stage optimizations.

In the second phase of the analyses, manual three-step procedure with BCH weights (Bolck et al., 2004; Vermunt, 2010) was used to examine mean differences between bully subtypes in distal outcomes of forms of bullying perpetration, as well as relative use of forms within each subtype with Mplus statistical package (Version 8.8; Muthén & Muthén, 1998–2022). Similarly, mean differences between bully subtypes and nonbullies were examined in academic (academic difficulties) and psychosocial adjustment (depressive symptoms, social anxiety, self-esteem, antibullying attitudes, and empathy toward the victim). In the three-step procedure, after establishing the latent profile model for clustering (step 1), the class membership and BCH weights (inversely related to the classification error probabilities) for the selected latent profile model were obtained and saved (step 2), and these predicted scores were used to assess mean differences in the distal outcome variables between the classes (weighted ANOVA, step 3) (Bakk et al., 2013; Bakk & Vermunt, 2016). BCH weighing adjusts for the downward bias in the SEs (Bakk et al., 2013) and avoids shifts in latent class in the final stage (Asparouhov & Muthén, 2021; Nylund-Gibson et al., 2019) that the standard three-step method is susceptible to. Further, BCH seems to be robust to nonnormality in the outcome variables (Bakk & Vermunt, 2016). To account for familywise error rates for multiple hypothesis tests, Holm's Sequential Bonferroni Procedure (Holm, 1979) was followed separately for each distal outcome. All self-reported variables considered were unstandardized.

Due to our inclusion criteria, all participants in the sample had peer-nomination data, so there were no missing data on variables in the main analyses (LPA). Missing data in the self-reported outcome variables ranged from 5.6% (academic difficulties) to 6.6% (anxiety). In all analyses, in order to use all available data to estimate the model without

imputing it, full information maximum likelihood (FIML) estimation was used to handle the missing data (Muthén & Muthén, 1998–2022).

RESULTS

Descriptive analyses

The descriptive statistics of the study variables, along with their intercorrelations, are presented in Table 1. In the whole sample, peer-reported bullying correlated positively with both popularity and rejection. The negative correlation between peer-reported bullying and likeability was also significant, albeit considerably weaker. Peer-reported bullying and victimization were not significantly correlated. Peer-reported bullying correlated positively with all self-reported bullying forms. Further, it correlated positively with depressive symptoms and academic difficulties, and negatively with social anxiety, self-esteem, anti-bullying attitudes, and empathy toward victims.

Identifying subtypes of bullies

Latent profile analyses were run with bullying, victimization, rejection, likeability, and popularity as profile indicators. The results of the latent profile models with all 6 within-profile variance–covariance structures with $k=2$ to $k=9$ profiles are presented in Table 2. All 48 models converged, with the highest log-likelihood value replicated. Overall, the models with within-profile variance–covariance structure F (Class Varying θ_{mm} , Class Varying Unrestricted Σ_k) with $k=7$ to $k=9$ latent profiles yielded the lowest AIC, BIC, and aBIC values. The Lo–Mendell–Rubin likelihood ratio tests (LMR–LRT) for the $k=8$ and $k=9$ latent profile model were statistically not significant, and these models were therefore dismissed. The $k=6$ latent profile model included only two groups of bullying perpetrators (popular bullies and somewhat popular bully-victims), and it was dismissed due to the interpretability of these profiles. Next, we investigated the $k=7$ profile model, which had an acceptable classification accuracy according to the entropy value. For this model, the LMR–LRT and A–LRT were statistically significant (see Table 2).

To take the theoretical considerations carefully into account, we also examined models with within-profile variance–covariance structures A–E. Despite the high entropy values in within-profile variance–covariance structures A, C, and D, these models included groups with small number of students (less than 5% of the sample) starting already in the $k=5$ profile model. Within-profile variance–covariance structures B and E yielded only two groups of bullies in the $k=4$ (B) and $k=6$ (E) models, in which the LMR–LRT and A–LRT were statistically significant. Therefore, due to smaller AIC, BIC, and aBIC values, $k=7$ profile model of within-profile variance–covariance structure F was finally selected.

TABLE 1 Descriptive statistics and correlations among study variables.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1. Bullying															
	N	M (SD)													
	10,689	-0.02 (0.89)													
2. Popularity	10,689	-0.00 (0.97)	.33												
3. Likeability	10,689	0.04 (0.97)	-.03 ^b	.40											
4. Rejection	10,689	-0.03 (0.96)	.24	-.14	-.51										
5. Victimization	10,689	-0.01 (0.97)	.00 ^a	.57	-.20	-.41									
6. Verbal bullying	10,071	0.26 (0.55)	.16	.08	.02 ^c	-.01 ^a	.08								
7. Physical bullying	10,070	0.08 (0.38)	.11	.06	.01 ^a	-.03 ^b	.07	.61							
8. Indirect bullying	10,071	0.19 (0.49)	.10	.05	-.01 ^a	.04	.04	.57	.60						
9. Cyber bullying	10,067	0.07 (0.41)	.09	.05	-.02 ^c	.04	.04	.67	.51						
10. Academic diff.	10,083	0.58 (0.50)	.12	.01 ^a	-.07	.09	.14	.12	.12						
11. Depressive symptoms	9975	0.77 (0.73)	.05	-.05	-.09	.09	.15	.18	.17	.26					
12. Anxiety	9970	1.30 (0.78)	-.05	-.14	-.12	.08	.03 ^b	-.02 ^c	.04	.15	.34				
13. Self-esteem	9980	2.65 (0.74)	-.06	.06	.10	-.09	-.12	-.09	-.11	-.30	-.63	-.46			
14. Anti-bullying attitudes	9985	2.90 (0.68)	-.17	-.10	.03 ^b	-.05	-.30	-.19	-.20	-.16	-.11	-.02 ^c	.20		
15. Empathy	9976	1.37 (0.69)	-.10	-.04	.04	-.03 ^b	.04	-.13	-.10	-.08	-.07	.17	.05	.48	

Note: Variables 1–5. were z-standardized within classroom, and variables 6–15. were unstandardized. All correlations are significant at $p < .001$, except for those with the subscripts a (= non-significant), b (= significant at .01), and c (= significant at .05).

TABLE 2 Latent profile analyses results for bullying, likeability, rejection, popularity, and victimization.

Model	#Class	#Par	LL	LL Rep	AIC	BIC	aBIC
A: Class invariant θ_{mm} , diagonal Σ_k	2	16	-68,327.4	Yes	136,686.8	136,803.2	136,752.3
	3	22	-64,139.3	Yes	128,322.5	128,482.6	128,412.7
	4	28	-61,814.3	Yes	123,684.5	123,888.2	123,799.3
	5	34	-60,270.2	Yes	120,608.3	120,855.7	120,747.7
	6	40	-58,982.3	Yes	118,044.7	118,335.7	118,208.6
	7	46	-58,177.6	Yes	116,447.3	116,782.0	116,635.8
	8	52	-57,545.5	Yes	115,195.1	115,573.4	115,408.2
	9	58	-56,990.0	Yes	114,096.1	114,518.1	114,333.8
	B: Class varying θ_{mm} , diagonal Σ_k	2	21	-61,715.0	Yes	123,472.1	123,624.9
3		32	-55,778.6	Yes	111,621.2	111,854.0	111,752.3
4		43	-53,020.8	Yes	106,127.6	106,440.5	106,303.8
5		54	-51,798.1	Yes	103,704.2	104,097.1	103,925.5
6		65	-51,009.8	Yes	102,149.5	102,622.5	102,415.9
7		76	-50,302.4	Yes	100,756.7	101,309.7	101,068.2
8		87	-49,859.0	Yes	99,891.9	100,524.9	100,248.5
9		98	-49,466.7	Yes	99,129.4	99,842.4	99,531.0
C: Class invariant θ_{mm} , Class invariant unrestricted Σ_k		2	26	-63,651.1	Yes	127,354.3	127,543.4
	3	32	-60,956.3	Yes	121,976.6	122,209.5	122,107.8
	4	38	-59,290.5	Yes	118,657.0	118,933.4	118,812.7
	5	44	-57,936.5	Yes	115,961.1	116,281.2	116,141.4
	6	50	-57,201.2	Yes	114,502.5	114,866.3	114,707.4
	7	56	-56,616.6	Yes	113,345.3	113,752.7	113,574.8
	8	62	-56,121.2	Yes	112,366.5	112,817.6	112,620.5
	9	68	-55,609.8	Yes	111,355.5	111,850.3	111,634.2
	D: Class invariant θ_{mm} , class varying unrestricted Σ_k	2	36	-63,555.7	Yes	127,183.4	127,445.3
3		52	-60,737.3	Yes	121,578.6	121,956.9	121,791.7
4		68	-58,990.6	Yes	118,117.3	118,612.0	118,395.9
5		84	-57,631.5	Yes	115,431.0	116,042.2	115,775.2
6		100	-56,562.7	Yes	113,325.3	114,052.9	113,735.1
7		116	-55,933.5	Yes	112,098.9	112,942.9	112,574.3
8		132	-55,442.9	No	111,149.7	112,110.1	111,690.6
9		148	-55,081.5	No	110,459.1	111,535.9	111,065.6
E: Class varying θ_{mm} , class invariant unrestricted Σ_k		2	31	-58,459.0	Yes	116,980.1	117,205.6
	3	42	-54,750.1	Yes	109,584.1	109,889.7	109,756.3
	4	53	-52,237.2	Yes	104,580.4	104,966.1	104,797.6
	5	64	-51,190.2	Yes	102,508.3	102,974.0	102,770.6
	6	75	-50,487.8	Yes	101,125.5	101,671.2	101,432.9
	7	86	-49,864.5	Yes	99,901.1	100,526.8	100,253.5
	8	97	-49,449.7	Yes	99,093.4	99,799.2	99,490.9
	9	108	-49,103.1	Yes	98,422.2	99,208.0	98,864.8
	F: Class varying θ_{mm} , varying unrestricted Σ_k	2	41	-57,091.9	Yes	114,265.8	114,564.1
3		62	-53,071.2	Yes	106,266.4	106,717.6	106,520.5
4		83	-51,171.8	Yes	102,509.6	103,113.5	102,849.7
5		104	-50,248.9	Yes	100,705.8	101,462.5	101,132.0
6		125	-49,602.1	Yes	99,454.3	100,363.8	99,966.6
7		146	-49,148.4	Yes	98,588.8	99,651.1	99,187.1
8		167	-48,806.1	Yes	97,946.2	99,161.3	98,630.6
9		188	-48,567.8	Yes	97,511.5	98,879.4	98,282.0

Note: $N = 10,689$ students. The selected model in bold.

Abbreviation: #Class, number of estimated profiles; #Par., number of estimated parameters; aBIC, sample size adjusted BIC; AIC, akaike information criterion; A-LRT, Lo-Mendell-Rubin adjusted LRT test; BIC, Bayesian information criterion; LL Rep, log-likelihood replicated at least 3 times; LL, log-likelihood; LMR-LRT, Lo-Mendell-Rubin likelihood ratio test; Model, Estimated variance-covariance structure.

LMR-LRT	A-LRT	Entropy	Number of students in each profile									
			1	2	3	4	5	6	7	8	9	
<0.001	<0.001	0.952	9336	1342								
<0.001	<0.001	0.955	1133	8334	1211							
<0.001	<0.001	0.934	1436	978	1190	7074						
<0.001	<0.001	0.946	1500	1159	682	448	6889					
<0.001	<0.001	0.935	1161	6426	1484	497	661	449				
<0.001	<0.001	0.935	1156	6219	487	690	1427	269	430			
<0.001	<0.001	0.920	1185	449	1130	480	830	5722	634	248		
<0.001	<0.001	0.924	415	469	5647	741	1153	1109	224	640	280	
<0.001	<0.001	0.835	6256	4422								
<0.001	<0.001	0.815	2664	4859	3155							
<0.001	<0.001	0.812	3971	2522	2118	2067						
0.313	0.316	0.794	3814	1883	1828	876	2277					
0.356	0.358	0.768	1924	2857	837	1705	1644	1711				
0.119	0.12	0.761	1875	1842	1454	1235	2662	697	912			
0.002	0.002	0.749	1646	2366	1435	692	1749	1075	514	1201		
0.003	0.003	0.746	1640	2455	1648	571	994	1011	588	1280	491	
<0.001	<0.001	0.968	9497	1181								
<0.001	<0.001	0.958	8532	1114	1032							
<0.001	<0.001	0.939	7323	1019	1318	1018						
<0.001	<0.001	0.949	7156	701	1005	420	1396					
<0.001	<0.001	0.939	1394	413	6729	979	669	494				
<0.001	<0.001	0.924	964	423	1180	651	6214	748	498			
<0.001	<0.001	0.923	932	483	6074	1122	724	440	632	271		
<0.001	<0.001	0.926	664	1042	893	385	6012	218	314	470	680	
<0.001	<0.001	0.967	9482	1196								
<0.001	<0.001	0.957	8490	1128	1060							
<0.001	<0.001	0.937	1339	1035	7250	1054						
<0.001	<0.001	0.948	7079	1428	697	1040	434					
<0.001	<0.001	0.851	2264	969	421	1405	4938	681				
<0.001	<0.001	0.855	947	442	414	1407	4799	2005	667			
<0.001	<0.001	0.858	1949	1370	430	668	4638	928	275	420		
<0.001	<0.001	0.867	4622	1346	682	1910	917	394	104	288	415	
<0.001	<0.001	0.838	6306	4372								
<0.001	<0.001	0.818	5003	3389	2286							
<0.001	<0.001	0.798	4105	2595	2021	1957						
0.001	0.001	0.779	1850	3883	1994	2019	932					
0.001	0.001	0.751	3199	1951	1715	1505	880	1428				
0.246	0.250	0.750	2958	1847	633	839	1860	1347	1194			
0.066	0.067	0.735	1044	1615	1719	624	1215	2536	505	1420		
0.006	0.007	0.733	1626	2553	1321	564	985	1620	479	1020	510	
<0.001	<0.001	0.845	5542	5136								
0.006	0.006	0.753	3433	2910	4335							
0.018	0.018	0.771	2279	2668	3561	2170						
0.002	0.002	0.747	3534	2254	1784	928	2178					
0.002	0.002	0.729	2035	843	2950	1481	1827	1542				
<0.001	<0.001	0.722	2605	1717	734	615	1647	1920	1440			
0.056	0.057	0.708	1608	1574	2295	1477	582	594	1350	1198		
0.252	0.254	0.701	1500	1160	1561	503	589	499	1342	2202	1322	

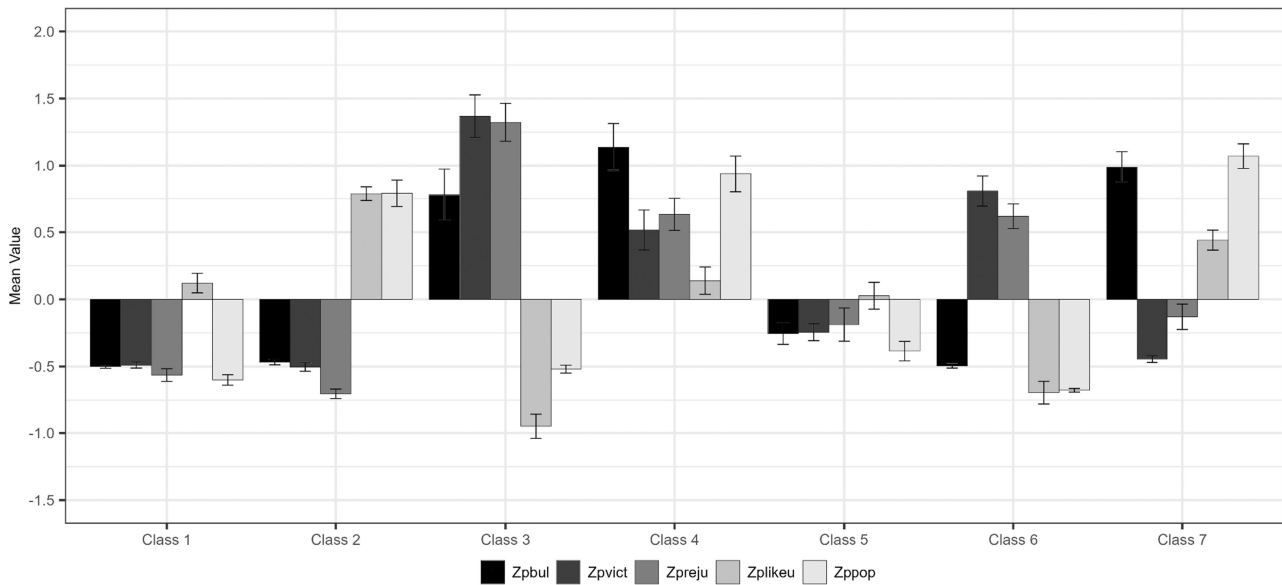


FIGURE 1 Identified seven profiles for bullying, victimization, and peer status. All variables are standardized within classroom. Zpbul = peer-reported bullying; Zpvict = peer-reported victimization; Zpreju = rejection; Zplikeu = likeability; Zppop = popularity.

Graphical representation of the profiles is presented in Figure 1, and descriptive information on bullying, victimization, and peer status across the profiles is available in Appendix S2. Because all variables were standardized within classroom, data for each profile can be interpreted as the degree to which the average profile mean for each measure was below or above the average classroom mean. Out of the seven profiles, there were three profiles of bullying perpetrators and they consisted altogether 26.1% of the entire sample ($n=2788$). Profile 3 ($n=734$, 6.9% of the sample, 26.3% of the bullies) was labeled *bully-victims (BV)*, and it represented perpetrators that are highly rejected and victimized and very low in likeability and popularity. Profile 4 ($n=615$, 5.8% of the sample, 22.1% of the bullies) had high level of bullying and popularity, but were also above average in victimization and rejection, and it was labeled *popular-rejected bully-victims (PRBV)*. Finally, Profile 7 ($n=1440$, 13.5% of the sample, 51.6% of bullies), *popular-liked bullies (PB)*, was characterized with high level of bullying and popularity and above average level of likeability, but below average levels of rejection and victimization. Four remaining profiles were nonbullies. Profile 1 ($n=2605$, 24.4%), characterized by a below average level in all variables except for likeability was the largest, and it was labeled as *unpopular nonbullies (UN)*. Profile 2 ($n=1717$, 16.1%), the *popular nonbullies (PN)*, was above their classroom average in likeability and popularity, but below average in all other profile indicators. Profile 5 ($n=1647$, 15.4%), the *average nonbullies (AV)*, displayed average levels of all profile indicators (within 0.5 SD around classroom average). Profile 6 ($n=1920$, 18%), the *victimized students (V)*, was above average in victimization and rejection and below average in other variables.

Regarding gender differences, boys were overrepresented among all the bully profiles (BV 78.3%, PRBV 67.6%,

PB 74.2%) and among the average nonbullies (52.6%), and girls were overrepresented among the unpopular nonbullies (67.8%), popular nonbullies (68.4%), and victimized students (56.1%), $\chi^2(6) = 1231.97$, $p < .001$, $V = 0.34$. There were no differences between grade levels; students in Grade 7 and Grade 8 were just as likely to be in all the profiles $\chi^2(6) = 4.29$, $p = .637$, $V = 0.02$. All bully subtypes had higher mean levels of peer-reported bullying than all nonbully subtypes. PRBV ($M = 1.18$, $SD = 1.50$) and PB ($M = 1.14$, $SD = 1.08$) bullied their peers more than BV ($M = 0.94$, $SD = 1.19$). All other mean differences between the profiles in the variables used in LPA were statistically significant except UN, PN, and PB did not differ in victimization, PRBV and V as well as AV and PB did not differ in rejection, and UN and PRBV did not differ in likeability.

Forms of bullying among the bully subtypes

There were no statistically significant differences between the bully subtypes in the forms of bullying (Table 3). Regarding *relative use* of different forms within each subtype, verbal bullying was the most common form among all groups, followed by and differing from indirect bullying (PRBV: $d = 0.26$; BV: $d = 0.26$; PB: $d = 0.33$), physical bullying (PRBV: $d = 0.36$; BV: $d = 0.41$; PB: $d = 0.47$), and cyberbullying (PRBV: $d = 0.39$; BV: $d = 0.46$; PB: $d = 0.53$). Following verbal bullying, all groups perpetrated more indirect than physical (PRBV: $d = 0.09$, BV: $d = 0.13$; PB: $d = 0.15$) or cyberbullying (PRBV: $d = 0.13$, BV: $d = 0.19$; PB: $d = 0.22$). For popular-liked bullies, the difference between physical bullying and cyberbullying was also significant ($d = 0.08$) indicating that they perpetrated more physical than cyberbullying, whereas the two other groups perpetrated physical and cyberbullying to the same extent.

TABLE 3 Differences between bully subtypes in self-reported bullying forms.

Variable	3: Bully-victims <i>M</i> (SD)	4: Popular-rejected bully-victims <i>M</i> (SD)	7: Popular-liked bullies <i>M</i> (SD)
Global item	0.80 ^a (1.08)	0.73 ^a (1.08)	0.67 ^a (0.93)
Verbal bullying	0.49 ^{a,A} (0.82)	0.48 ^{a,A} (0.78)	0.44 ^{a,A} (0.71)
Physical bullying	0.20 ^{a,B} (0.60)	0.21 ^{a,B} (0.68)	0.15 ^{a,B} (0.51)
Indirect bullying	0.28 ^{a,C} (0.72)	0.28 ^{a,C} (0.72)	0.23 ^{a,C} (0.56)
Cyberbullying	0.15 ^{a,B} (0.64)	0.18 ^{a,B} (0.72)	0.11 ^{a,D} (0.54)

Note: Values with different superscript letters in a row (small letters, three comparisons/outcome) and in a column (capital letters, six comparisons/outcome) are significantly different ($p < .05$) in a BCH weighted mean difference test with Holm's Bonferroni-adjusted p -value.

Abbreviations: *M*, arithmetic mean; SD, standard deviation.

TABLE 4 Differences between bully subtypes and nonbullies in academic and psychosocial adjustment.

Variable	1: Unpopular nonbullies <i>M</i> (SD)	2: Popular-liked nonbullies <i>M</i> (SD)	3: Bully-victims <i>M</i> (SD)	4: Popular-rejected bully-victims <i>M</i> (SD)	5: Average nonbullies <i>M</i> (SD)	6: Victims <i>M</i> (SD)	7: Popular-liked bullies <i>M</i> (SD)
Academic diff.	0.50 ^a (0.43)	0.49 ^a (0.45)	0.65 ^{bc} (0.55)	0.68 ^c (0.55)	0.58 ^b (0.50)	0.63 ^{bc} (0.52)	0.66 ^c (0.56)
Depressive symptoms	0.72 ^a (0.66)	0.69 ^a (0.63)	0.92 ^b (0.91)	0.81 ^{ab} (0.86)	0.74 ^a (0.68)	0.91 ^b (0.78)	0.69 ^a (0.73)
Social anxiety	1.35 ^a (0.69)	1.20 ^b (0.65)	1.44 ^{ac} (0.94)	1.18 ^{be} (0.88)	1.23 ^b (0.74)	1.58 ^{cd} (0.79)	1.05 ^e (0.79)
Self-esteem	2.69 ^{ab} (0.70)	2.76 ^a (0.70)	2.47 ^c (0.78)	2.62 ^{bc} (0.69)	2.67 ^{ab} (0.73)	2.55 ^c (0.79)	2.68 ^{ab} (0.72)
Anti-bull. attitudes	3.05 ^a (0.61)	3.06 ^a (0.60)	2.67 ^{be} (0.72)	2.73 ^{bcd} (0.73)	2.83 ^c (0.67)	3.12 ^a (0.63)	2.57 ^e (0.69)
Empathy toward victims	1.43 ^a (0.61)	1.54 ^b (0.63)	1.22 ^{cd} (0.77)	1.26 ^{cd} (0.78)	1.27 ^c (0.66)	1.55 ^b (0.68)	1.14 ^d (0.67)

Note: Values with different superscript letters on a row are significantly different ($p < .05$) in a BCH weighted mean difference test with Holm's Bonferroni-adjusted p -value (21 comparisons/outcome).

Abbreviations: *M*, arithmetic mean; SD, standard deviation.

Academic and psychosocial adjustment of the bully subtypes and noninvolved students

Results regarding academic and psychosocial adjustment of the subtypes are presented in Table 4. All bully subtypes, as well as victimized students, had more academic difficulties than unpopular (PRBV: $d = 0.38$; BV: $d = 0.32$; PB: $d = 0.32$; V: $d = 0.28$) and popular-liked (PRBV: $d = 0.38$; BV: $d = 0.33$; PB: $d = 0.33$; V: $d = 0.29$) nonbullies. When comparing bullies and nonbullies with similar victimization and peer status profiles, bully-victims or popular-rejected bully-victims did not differ from victimized students, but popular-liked bullies had more academic difficulties than popular-liked nonbullies. Popular-liked bullies ($d = 0.16$) and popular-rejected bully-victims ($d = 0.20$) had also more academic difficulties than average nonbullies.

Bully-victims and victimized students had more depressive symptoms than popular-liked bullies (BV: $d = 0.28$; V: $d = 0.28$), unpopular nonbullies (BV: $d = 0.26$; V: $d = 0.25$), popular-liked nonbullies (BV: $d = 0.31$; V: $d = 0.31$), and average nonbullies (BV: $d = 0.28$; V: $d = 0.28$). Popular-rejected bully-victims did not differ from bully-victims or victimized students in depressive symptoms. Regarding social anxiety, bully-victims and victimized students were the most anxious groups, differing from popular-rejected bully-victims (BV:

$d = 0.29$; V: $d = 0.49$) and popular-liked bullies (BV: $d = 0.45$; V: $d = 0.68$), but also from popular-liked nonbullies (BV: $d = 0.30$; V: $d = 0.53$) and average nonbullies (BV: $d = 0.25$; V: $d = 0.46$). Popular-liked bullies scored the lowest in social anxiety, differing even from the popular-liked nonbullies ($d = 0.21$). Bully-victims and victimized students also had the lowest self-esteem differing from popular-liked bullies (BV: $d = 0.28$; V: $d = 0.18$), but also from popular-liked nonbullies (BV: $d = 0.39$; V: $d = 0.28$), unpopular nonbullies (BV: $d = 0.30$; V: $d = 0.20$), and average nonbullies (BV: $d = 0.27$; V: $d = 0.16$). Popular-rejected bully-victims had lower self-esteem than popular-liked nonbullies ($d = 0.19$).

All bully groups had lower level of anti-bullying attitudes than most nonbullies, including victimized students (PRBV: $d = 0.57$; BV: $d = 0.66$; PB: $d = 0.384$), unpopular nonbullies (PRBV: $d = 0.48$; BV: $d = 0.57$; PB: $d = 0.75$), and popular-liked nonbullies (PRBV: $d = 0.49$; BV: $d = 0.59$; PB: $d = 0.76$). Popular-liked bullies ($d = 0.38$) and bully-victims ($d = 0.23$) had also lower anti-bullying attitudes than average nonbullies. Finally, all bully groups also had less empathy toward victims than most nonbullies, including victimized students (PRBV: $d = 0.39$; BV: $d = 0.45$; PB: $d = 0.61$), unpopular nonbullies (PRBV: $d = 0.24$; BV: $d = 0.31$; PB: $d = 0.46$), and popular-liked nonbullies (PRBV: $d = 0.40$; BV: $d = 0.46$; PB: $d = 0.63$). Popular-liked bullies

($d = 0.38$) had also less empathy toward victims than average nonbullies ($d = 0.20$).

DISCUSSION

We identified subtypes of adolescent bullying perpetrators and nonbullies based on peer-reported bullying, victimization and peer status (popularity, likeability, and rejection). We further examined the typical forms of bullying among the bully subtypes, as well as differences in academic and psychosocial adjustment between all subtypes. Previous research has examined victimization and peer status of bullies separately, and this study is the first one to consider both constructs simultaneously when examining different types of bullying perpetrators. In addition to the two subtypes of bullies (popular and victimized) we expected to find, we identified a group of popular-rejected bully-victims who were popular but also rejected and victimized—albeit not to the same extent as bully-victims. The third bully subtype we expected, average bullies, did not emerge.

In total, over two thirds of the bullying perpetrators were popular among their peers, which underscores that bullying is a successful way to obtain and maintain popularity among this age group (Juvonen et al., 2013; Mayeux et al., 2011). Our person-centered approach allowed us to detect two types of popular bullies: a larger group that was both popular and liked and a smaller group that was popular but disliked. The common perception of bullies being popular, but not well-liked (e.g., van den Berg et al., 2020) was challenged; in adolescence, bullying perpetrators who are popular and well-liked are more prevalent. The two popular bully groups bullied their peers more than bully-victims and resembled each other in academic and psychosocial adjustment: They did not differ from nonbullies in depressive symptoms, and they were even less socially anxious than unpopular nonbullies. Thus, popularity seems to be protective against internalizing symptoms even among those bullying perpetrators who are rejected and (somewhat) victimized.

Despite the similarities, there were also differences between the two groups of popular perpetrators. In addition to being less liked, more rejected, and more victimized than popular-liked bullies, popular-rejected bully-victims had also more anti-bullying attitudes. Although we had not expected this group to emerge, this finding is in line with studies indicating that high status in adolescence can also be associated with victimization (Dawes & Malamut, 2020). Further, popularity has been found to be a significant moderator enhancing the association between indirect (self-reported) victimization and later aggression (Malamut et al., 2020). In another study examining victims with high and low status, Malamut et al. (2022) identified a group of bully-victims with high status, who had higher concurrent and prospective levels of peer-reported bullying than lower-status victims. These studies examining bullying and/or aggressive behavior of high-status victims suggest that at least some high-status youth might respond to victimization with

aggression, possibly in retaliation or in order to protect their high status (Dawes & Malamut, 2020; Juvonen et al., 2013; Mayeux et al., 2011). Although the current study approaches the topic from the perspective of bullying perpetrators instead of victims, we identified a similar group of bullies that are popular, but also more rejected and victimized than their classmates.

On average, popularity seems to protect adolescents from social anxiety; all groups with popularity scores above (or scoring less than 0.5 *SD* below) their classroom average had lower social anxiety than unpopular groups. However, bullying perpetration together with high status (popularity and likeability) seems to predict low social anxiety the most. Popular groups did not systematically differ from the unpopular ones in other adjustment variables. Popular-liked bullies differed from popular-liked nonbullies in some ways: They had more academic difficulties and less social anxiety, empathy toward victims, and anti-bullying attitudes. Popular-rejected bully-victims had more academic difficulties, lower self-esteem, and less empathy toward victims and anti-bullying attitudes popular-liked nonbullies. Overall, the two groups of popular perpetrators did not differ much from each other or from popular-liked nonbullies in internalizing problems.

Victimization, on the other hand, was to some degree indicative of poorer adjustment. As expected, bully-victims stood out as feeling worse than other bully subtypes. They reported the highest levels of depressive symptoms and social anxiety, as well as lower self-esteem than most other subtypes. Also, victimized students were feeling worse than most other groups, resembling bully-victims in many ways. They did not differ in internalizing problems or academic adjustment, but victims had more anti-bullying attitudes and empathy toward victims than bully-victims (and popular-rejected bully-victims). Thus, it seems that victimization is indicative of internalizing problems regardless of bullying perpetration, but high status protects even the victimized students from social anxiety.

The bully subtypes also resembled each other in some of the examined outcomes. First, all subtypes had more academic difficulties than nonbullies (except for victimized students), which is in line with previous studies indicating that poor academic performance (Cook et al., 2010) and learning difficulties (Kaukiainen et al., 2002; Rose et al., 2011) are associated with bullying perpetration. It is possible, as Turunen et al. (2021) hypothesized, that adolescents with academic difficulties are particularly concerned about their position in the peer group and try to gain status by aggressive means, such as bullying others. The similarity across subgroups suggests all perpetrators struggle academically despite their peer status or victimization. Second, all subtypes had also lower anti-bullying attitudes and less empathy toward victims than most nonbullies, which is not surprising as previous research has found that youth who bully tend to report more favorable attitudes toward aggression (O'Brennan et al., 2009) and have less empathy (van Noorden et al., 2015). Third,

contrary to our expectations, the subtypes did not differ from each other in bullying forms. In addition, following verbal bullying, all bully subtypes perpetrated more indirect bullying than physical bullying, thus challenging the view that socially powerful and well-connected peers find it particularly easy to engage in indirect forms of bullying. At least in this developmental period, there were no differences between bullies with high and low peer status in the forms of bullying used.

Strengths and limitations

The key strength of this study is the simultaneous consideration of two previously separately studied sources of heterogeneity among bullying perpetrators: victimization and peer status. We examined a large sample of adolescents and utilized peer reports in identifying subtypes among them based on bullying, victimization, and peer status. This enabled us to identify three bully subtypes, to assess self-reported differences between them in the forms of bullying they perpetrate, and to compare their academic and psychosocial adjustment to the four subtypes of nonbullies with various levels of victimization and peer status.

However, the study also has some limitations. First, the study design is cross-sectional and does not consider possible changes in bullying perpetration, victimization, or peer status in identifying the subtypes. Thus, it remains unknown whether some subtypes are more likely to continue bullying their peers for longer periods of time, whereas for others it is a short-lived tendency. Further, as also the forms of bullying and adjustment variables were measured at the same time, the results describe how peer-reported bullies act, think, and feel at the time point the study was conducted. In the future, it would be important to examine the longitudinal disparities between the subtypes, both in the short (e.g., the following school year) and in the long term—all the way to adulthood, to understand their developmental trajectories. Second, forms of bullying perpetrated were assessed with self-reports and thus depend on whether peer-reported bullies admit that they bully their peers. As with overall bullying perpetration (Cole et al., 2006), peer reports might give more reliable estimates of bullying forms regardless of social desirability bias or inability to see one's own behavior as bullying. Third, it would be important in the future to examine other characteristics (e.g., social competence) and behaviors (e.g., delinquency and substance use), as well as the motivations for bullying among the different subtypes. Fourth, we examined LPA indicator variables as continuous proportion scores standardized within classroom and thus who nominated who remains unknown. It might be useful to examine dyadic nominations, for example, which peers consider popular bullies as likeable or who reject and bully popular-rejected bully-victims. Fifth, although LPA identified profiles of nonbullies that resembled bully subtypes in victimization and peer status (e.g., bully-victims

and victimized students were both above average in victimization and below average in peer status), there were still significant differences in victimization and peer status between the profiles. Therefore, it is still to some extent unclear whether the adjustment differences between the groups are related to bullying perpetration or to differences in the level of victimization or peer status. Sixth, the reliability of the academic difficulties variable was relatively low. Although bullying has also previously been associated with academic difficulties (Cook et al., 2010), it would be important to utilize a more reliable measure in the future to see whether different types of bullies differ from each other in academic difficulties. Finally, we expected adolescence to be a developmental period when different types of bullying perpetrators would be likely to be detected. We identified three bully subtypes that were clearly distinct regarding victimization and peer status and that differed to some degree also in psychosocial adjustment. In order to see whether these subtypes are specific to adolescence, heterogeneity among younger bullying perpetrators needs to be examined in future research.

Conclusions and practical implications

The results of this study add to the vast literature on bullying perpetration by zooming in and clarifying differences between bully subtypes. Adolescents who bully their peers differ in their status and treatment in the peer group, but these differences cannot be captured by just referring to them as “pure” bullies vs. bully-victims or as popular vs. unpopular bullies. Our findings provide a more nuanced and comprehensive perspective of the heterogeneity of bullying perpetrators.

First, over two thirds of the adolescent perpetrators are viewed by their peers as popular and there are two types of popular perpetrators: those that are popular *and* liked, and those that are popular *but not* liked, and even victimized. Thus, researchers should take this into account and consider both peer status and victimization when examining heterogeneity among bullies. Second, previous studies have rarely considered other factors than simultaneous victimization (bully-victims) when examining psychosocial adjustment of bullying perpetrators, leading to a deficient view of adjustment among “pure” bullies (Cook et al., 2010). According to our results, “pure” (i.e., nonvictimized or only somewhat victimized) bullies can be divided into popular-liked and popular-rejected subtypes. Similarly, bully-victims can be divided into high-status and low-status bully-victims (the former referred to as popular-rejected bully-victims in the current study). Compared to nonbullies, these three subtypes shared similarities in their academic and psychosocial adjustment, but there were also differences especially when it comes to internalizing symptoms. Overall, it seems that most bullies do not suffer psychologically. It is mostly the low status bully-victims who have a lot of internalizing symptoms.

Both popular subtypes, regardless of whether they are victimized or not, mostly seem to be doing as well or even better than most nonbullies. Finally, regardless of bullying perpetration, popularity seems to protect adolescents from social anxiety, and victimization is related to internalizing problems.

It is important to share these findings with practitioners, as it is still common to view bullies as maladjusted youth with low status and problematic peer relations, and parents and teachers may struggle to identify popular, well-liked, and well-adjusted adolescents as school bullies. Consequentially, the victims of these bullies may remain unnoticed and lacking appropriate help from adults. By educating school personnel about heterogeneity among bullies, it could be possible to enhance the effects of the anti-bullying efforts conducted in the schools.

ACKNOWLEDGMENTS

The writing of this article was supported by the INVEST Research Flagship Center (Research Council of Finland Flagship Program, decision number: 320162) and partially supported by the Eunice Kennedy Shriver National Institute of Child Health & Human Development of the National Institutes of Health (F32HD100054; awarded to the second author). The data used in this study were collected during a randomized controlled evaluation trial of the KiVa program developed at the University of Turku. The authors wish to thank the whole KiVa project team for their continued support.

CONFLICT OF INTEREST STATEMENT

The authors have no competing interests to declare that are relevant to the content of this article.




DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

PARTICIPANT CONSENT STATEMENT

All participants have parental consent as well as their own assent to participate in the study.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: Turunen, T., Malamut, S. T., Yanagida, T., & Salmivalli, C. (2024). Heterogeneity of adolescent bullying perpetrators: Subtypes based on victimization and peer status. *Journal of Research on Adolescence*, 00, 1–17. <https://doi.org/10.1111/jora.12986>