

Adolescent Male Bullies, Victims, and Bully-Victims: A Comparison of Psychosocial and Behavioral Characteristics

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Objective To determine among male adolescents whether bully-victims would report the poorest psychosocial health, the worst attitudes toward school, more problem behavior (delinquency, weapons possession, and substance use), and more physical injury compared with bullies, victims, and neutral students. We also assessed ethnic differences in bullying category membership. **Methods** Employing multisample latent variable models, we contrasted 1,312 males in grades 7–12 classified as bullies ($n = 299$), victims ($n = 180$), bully-victims ($n = 195$), and neutral ($n = 638$) on school attitudes, psychosocial health, problem behaviors, and physical injury. **Results** Hypotheses were generally confirmed, especially contrasts between bully-victims and neutrals. However, bullies did not have better school attitudes than bully-victims, and victims only marginally reported better psychological health than bully-victims. The boys of mixed ethnicity were more likely to be victims. **Conclusions** Greater awareness of the problems associated with boys who both bully and are victimized is necessary for improved intervention.

Key words bullies; bully-victims; mixed ethnicity; victims; weapon possession.

Bullying is an aggressive behavior characterized by three defining conditions: (a) negative or malicious behavior intended to harm or distress, (b) behavior repeated over a time period, and, most importantly, (c) a relationship in which there is an *imbalance* in strength or power between the parties involved [American Psychological Association (APA), 2005; Gini, 2004; Nansel et al., 2001; Olweus, 1993]. The power asymmetry can be physical or psychological. Four groups have been distinguished: pure bullies, those who bully other children only; pure victims, who are children who are victimized by bullies; bully-victims, who are children who are involved in bullying other children and who also are victims of bullying, and neutral children (Haynie et al., 2001; Schwartz, 2000; Woods & White, 2005).

The horrendous shootings at Columbine High School in 1999 have fueled a national concern over peer bullying and victimization. Students involved in school shootings have been characterized as chronic bullying

victims who in turn have victimized their peers (Unnever, 2005). Approximately, two-thirds of all school-associated violent deaths in the United States are caused by other students (Centers for Disease Control and Prevention, 2002). In comparison with other acts of aggression often seen in schools such as school vandalism or assaults on teachers, bullies are more likely to engage in proactive or reactive aggression (Camodeca, Goossens, Terwogt, & Schuengel, 2002). Proactive aggression is deliberate and goal-directed and does not need any stimulus. Reactive aggression is a defensive response to provocation and usually accompanied by anger (Camodeca et al., 2002; Crick & Dodge, 1996). Bullies are also more likely to carry a weapon (Nansel et al., 2004). It has been estimated that more than two million youth in the United States are involved in bullying as bullies, victims, or both (Nansel et al., 2001).

Bullying and victimization are universal phenomena that are recognized and studied internationally. Groups

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of researchers around the world who are concerned about these behaviors and their impact on society are conducting important research to elucidate causes, concomitants, and outcomes of bullying behaviors and victimization (e.g., Nansel et al., 2004). For instance, Eslea and an international consortium of colleagues from seven different nations (2004) contrasted bullies and victims on a variety of variables. They found several cultural variations and few consistent patterns cross-culturally but did conclude that victims were worse off on the measures in the samples where differences were found. Woods and White (2005) recently examined and contrasted arousal levels among students in the United Kingdom based on their membership in one of the four bully-victim categories. Bully-victims had the highest levels of arousal, whereas pure bullies had low levels of arousal. Kokkinos and Panayiotou (2004) compared Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) symptoms among junior high school students in Cyprus who were classified as bullies, victims, or bully-victims. Bully-victims reported the greatest amount of conduct disorder.

Correlates of Bullying and Victimization

Most studies, no matter where they are conducted, find bullying and victimization linked with other problems among youth. Bullies have been reported to be more prone to excessive substance and alcohol use, psychiatric symptoms later in life, difficulty with rules, and poor school adjustment (Kaltiala-heino, Rimpela, Tantanen, & Rimpela, 2000; Kumpulainen & Räsänen, 2000; Nansel et al., 2004; Olweus, 1993). Victims, on the contrary, have been found to exhibit difficulty making friends, loneliness, physical and psychological distress, submissiveness, depression, social anxiety, and a negative self-image (Eslea et al., 2004; Grills & Ollendick, 2002; Haynie et al., 2001; Kokkinos & Panayiotou, 2004; Nansel et al., 2001; Olweus, 1993; Schwartz, 2000; Storch, Brassard, & Masia-Warner, 2003). Both bullies and victims have been reported to be more prone to eating disorders, tobacco use, and low self-esteem (Kaltiala-heino et al., 2000; Kokkinos & Panayiotou, 2004; Nansel et al., 2001).

Special Problems Among Bully-Victims

Although extensive research has been conducted on bullies and victims, recently the focus has shifted to the victims of bullying who also bully other children. They are most at risk for major aggressive behaviors against their peers (Unnever, 2005) and at the greatest risk for

various psychosocial problems. Such problems include poor social adjustment (Nansel et al., 2001), psychological disturbance (Kumpulainen et al., 1998), social isolation (Juvonen, Graham, & Schuster, 2003; Veenstra et al., 2005), alcohol use (Nansel et al., 2004), depression (Juvonen et al., 2003), anxiety (Kaltiala-heino et al., 2000), health problems (Nansel et al., 2004), Attention Deficit Hyperactivity Disorder (ADHD) (Schwartz, 2000), conduct disorder (Kokkinos & Panayiotou, 2004), and disturbed personalities (Kaltiala-heino et al., 2000). In a relatively rare 7-year longitudinal study, bully-victims were found to be more prone to psychiatric symptoms, relationship difficulties, and problem-internalizing and -externalizing behavior in later years (Kumpulainen & Räsänen, 2000).

Because of their externalized problem behaviors, members of social networks of bullies and bully-victims are at a higher risk for injury (Veenstra et al., 2005). Bully-victims are also more likely to have academic and social problems at school. Bully-victims have lower GPAs, lower achievement test scores, and lower school adjustment (Nansel et al., 2004; Schwartz, 2000). Considering that bully-victims experience greater social isolation, injury, and lower academic success, overall they represent an extremely high-risk group (Nansel et al., 2001).

Gender Differences

Several studies report that physical bullying and violence is more common among boys than among girls (e.g., Grills & Ollendick, 2002; Nansel et al., 2001). Kumpulainen et al. (1998) found that boys were 4–5 times more likely to be bullies or bully-victims than girls, and boys who bully are often stronger than their victims (APA, 2005; Björkqvist, Lagerspetz, & Kaukiainen, 1992; Nansel et al., 2001; Olweus, 1993). Camodeca et al. (2002) found that reactively aggressive boys are more often bullies than reactively aggressive girls. Also, boys are more likely to report being physically victimized than girls (Nansel et al., 2001; Storch et al., 2003) and are also more likely to be bully-victims than girls (Veenstra et al., 2005).

Current Study

In light of the findings regarding their higher rates of physical aggression, this study focuses on power imbalances combined with physical aggression among boys and hypothesizes that bully-victims will have the worst psychosocial problems. With an alarming rise in school violence, specifically acts of aggression, it is important to investigate possible correlates of aggressive behavior

among boys who bully or who are bullies/victims. Furthermore, there are few studies looking at relationships between physical injury caused by others and status as a bully, victim, bully-victim, or neutral. Past research states that victims, in general, tend to be quiet (Olweus, 1993), are physically weaker than bullies and have difficulties asserting themselves (APA, 2005); thus, injuries among these children may play an important role in identifying children who are bully-victims or potential bully-victims, as well as developing high-quality bullying interventions. It is also important to confirm and distinguish correlates related to victimization to further improve current interventions. Taking this into account, we hypothesized that compared with other groups, bully-victims would report the poorest psychosocial health, worst attitude toward school, and the most problem behavior and injury.

Furthermore, globally there has been a paucity of research examining whether there are ethnic differences in bullying (Nguy & Hunt, 2004). We were interested in determining whether we could uncover ethnic differences even though other studies have reported few differences among different ethnic groups (e.g., Seals & Young, 2003). In a large epidemiological study of over 15,000 students in grades 6–10 in the United States, modest ethnic differences were noted with Hispanic students reporting somewhat more bullying of others and Black students reporting less bullying by others (Nansel et al., 2001). Our study includes a large sample of boys from various ethnic groups including a substantial number of boys of mixed ethnicity which is an understudied subpopulation. We could find no other study on bullying that used mixed ethnicity as a category in addition to Whites, Blacks, and Hispanics. We were interested in seeing whether the boys of mixed ethnicity would be more likely to belong to one of the four bullying categories.

Method

Participants

The entire population of students from the four middle schools and two high schools in a suburban school district in Colorado Springs, Colorado, was eligible to participate in the survey. The response rate was 67%. Students may not have participated in the survey because of absence from class during the testing session, moving or dropping out of school after the school census date but before testing, and refusals. Of the 2,902 students who participated in the survey, 1,451 were male. On the basis of responses to a series of questions about bullying and victimization by bullies (described

below), we were able to classify 1,312 of the males into four distinct sets of bullies, victims, bully-victims, and neutrals based on their responses to a series of questions about victimization and bullying. The remainder of the males ($n = 139$) could not be classified into any one of the groups; so, these cases were not used in the analyses.

Twenty-four percent of the final male sample was white, 19% were African American, 25% were Hispanic, 23% described themselves as mixed (parents of different ethnicity), nearly 5% were Asian, and 3% were Native Americans. We verified the accuracy of responses about mixed ethnicity by cross-tabulating reported ethnicity of the mother and the father. Thirteen percent of the sample reported that their parents had less than a high school education, 27% of the parents were high school graduates, over 25% of the parents had attended college or a trade school, and over 33% were college graduates or had advanced degrees.

Instrumentation and Procedures

Anonymous responses to a 99-item questionnaire were recorded on a machine-scored form. Respondents completed the survey in an average time of 25 min. School administrators informed parents about the survey in October 2003, and they posted copies of the questionnaire in each school building. Although parents could have requested that their children not participate in the survey, no refusals were reported. Written instructions on the envelope for each classroom requested that students collect completed surveys and seal them in the envelope for delivery to the central office of the school. School personnel sent the envelopes to the district office for transmittal to the researchers. On the instrument, written instructions promised anonymity to the student participants and invited them to decline to answer any items to which they objected or to which they felt their parents might object. The research obtained university Institutional Review Board approval via an expedited process because the questionnaire was anonymous and answering posed minimal risk. The school district assumed passive parental consent after informing parents about the survey.

Measures

Single-Item Variables

Classification into bullying categories. Three items assessing physical bullying based upon McConville and Cornell (2003) asked (1) “During the past 12 months how often have you hit or kicked”; (2) “grabbed or shoved”; and (3) “threatened someone who was *weaker* than you are.” The three victimization items were “During the past 12 months how often have you been” (1) “hit or

kicked,” (2) “grabbed or shoved,” and (3) “threatened by someone who was *stronger* than you?” Responses were recorded on 5-point scales: “Never (1),” “Once (2),” “Twice (3),” “Three or four times (4),” and “Five or more times (5).” Neutrals were classified as those who responded “1” to all items ($n = 638$). Victims were classified as those who responded “1” or “2” to the bullying items and “4” or “5” to the victimization items ($n = 180$). Bullies were those who responded “1” or “2” on victimization items and “4” or “5” to the bullying items (299). Bully-victims responded “4” or “5” to both sets of items ($n = 195$). The items reflected power imbalances.

Demographics. Four dichotomous variables representing ethnicity included White, African American, Hispanic, and mixed. Ethnicity, grade in school (range 7–12), age (range 11–18 years), school grades, and parent education were used in separate analyses described below. Respondents were asked, “What was your average grade on your last report card?” Responses were mostly As, mostly Bs, and so on scored 1–5 (mean score = 3.0). Parental education was assessed by an item that asked, “How much education was completed by your parent who went to school longer?” Response categories and numerical codes ranged from “Grade school or less,” coded “1,” to “Graduate school (doctor, lawyer, PhD),” coded “6.”

Latent Variables

Psychosocial Health was indicated by three items. (1) *Self-esteem* was measured by five positively worded items from Rosenberg’s Self-Esteem Scale (1965) (e.g., “I am satisfied with myself”). Responses were recorded using a 5-point response scale anchored by “Strongly disagree” (“1”) and “Strongly agree” (“5”). The mean of these items was used as one indicator (coefficient $\alpha = .85$). Items (2) and (3) were two items from the *Purpose in Life scale* (Crumbaugh, 1968). The first item stated “My life is . . .” A 7-point response scale was anchored by “empty, filled only with despair” (1) and “running over with exciting good things” (7). The second item stated “My life is . . .” and was anchored by “in my hands and I am in control of it” (7) and “out of my hands; controlled by external factors” (1).

Positive attitudes toward school was indicated by three items. (1) “I enjoy going to school” range: “strongly disagree” (1) to “strongly agree” (5); (2) “How important is it to you to get good grades in school” range: “not important at all” (1) to “very important” (5); (3) “I do not care how I do in school” (reverse-scored) range: “strongly disagree” (1) to “strongly agree” (5).

Problem behavior was indicated by four items that are means of responses to questions concerned with (1) *Weapon possession*: The weapons items assessed possession of a gun or other weapons such as knives or clubs at school, at school-sponsored activities, and while out with friends. Responses were scored on 5-point scales identical to the ones described above for bullying and victimization (coefficient $\alpha = .91$); (2) *Delinquent behaviors*: The heading stated, “During the past twelve months how often have you,” example items include, “Gotten into a serious physical fight,” “Hurt someone enough to need bandages or a doctor,” “Taken something from a store without paying for it,” “Damaged property just for fun (such as breaking windows, scratching cars, painting graffiti),” “Gotten into trouble with the police,” and “Violated curfew.” Responses to all delinquency items were scored on a 5-point scale identical to the ones for bullying and victimization (coefficient $\alpha = .89$); (3) *Common drug use*: Items measuring common drugs included use of alcohol (beer, wine or wine coolers, and hard liquor), marijuana, and cigarettes (coefficient $\alpha = .88$); and (4) *Hard drug use* included amphetamines and barbiturates, psychedelics (lysergic acid diethylamide [LSD], phencyclidine [PCP], or other psychedelics), cocaine (or crack), “club” drugs, heroin, steroids, and inhalants. Responses for both common and hard drugs were scored on a 7-point scale: “Never tried (1),” “Tried once or twice in past but quit (2),” “Occasionally but not in the last 30 days (3),” “Once/twice in the last 30 days (4),” “Three to five times in the last 30 days (5),” “Six to fifteen times in the last 30 days (6),” and “Over fifteen times in the last 30 days (7).” Coefficient α was .93.

Injury was indicated by four items. A header asked, “During the last twelve months, how many times have you been injured by someone enough to need bandages or a doctor?” Individual items stated, “At school,” “Going to and from school,” “In my neighborhood,” and “While out with friends.” Responses were recorded on 5-point scales identical to those used for bullying and victimization.

Analyses

Assessments Based on Group Membership

Cross-tabulations and ANOVA were used to assess associations of bullying and victimization group membership with ethnicity, age, parent education, and grade point averages.

Latent variable analyses. We performed latent variable analyses using the EQS structural equations modeling program (Bentler, 2006). Latent variables are hypothesized underlying constructs that explain the shared variance among indicator variables. They are considered to be

error free, and they represent a higher order of abstraction than measured variables. We evaluated the goodness-of-fit of the models using the maximum likelihood χ^2 statistic, the Comparative Fit Index (CFI), and robust fit statistics: the Satorra–Bentler χ^2 (S–B χ^2) and the Robust CFI (RCFI). We used the S–B χ^2 in addition to the maximum-likelihood fit statistics, because the data were multivariately kurtose (Bentler, 2006). The CFI and RCFI, which range from 0 to 1, report the improvement in fit of the hypothesized model over a model of complete independence adjusted for sample size. We also used the root mean square error of approximation (RMSEA) which is a measure of fit per degrees of freedom, controlling for sample size. Values less than 0.06 indicate a relatively good fit between the hypothesized model and the observed data (Bentler, 2006).

Confirmatory factor analyses. Confirmatory factor analyses were performed for each separate group. These analyses tested the plausibility of the measurement model within each group and provided the correlations among the latent variables and with the single-item variable of grade in school. Grade in school was included to control for maturation. For instance, we expected grade in school to be significantly related to use of common drugs. To improve fit, we added a minimal number of correlated error residuals suggested by the Lagrange Multiplier (LM) Test provided these correlated error residuals were plausible and logical (Bentler, 2006). We attempted to have the same correlated error residuals for all four groups.

Multisample analyses. We contrasted the four groups (neutrals, bullies, victims, and bully-victims) through the use of multisample-constrained models. First, after assessing a baseline unrestrained model, multiple-group latent variable models tested the equivalence (invariance) of the measurement model among the groups (Byrne, Shavelson, & Muthén, 1989; Stein, Lee, & Jones, in press). The factor loading of each measured variable on its latent factor was constrained to equality across the four groups. The LM test in this context reports which constraints are untenable. We then contrasted the covariances between the variables in the model to determine whether these relationships were similar for the groups. The plausibility of the equality constraints was determined with χ^2 difference tests.

We also assessed whether there were significant group differences in the latent means of the latent constructs in the model. We used the bully-victims as the reference group for the latent means analysis because we had hypothesized that they would show the poorest adjustment among the four groups. This analysis constrains the item means to equality, and the LM test reports which of these constraints are untenable.

Results

Cross-Tabulations and ANOVAs

Chi-square expectancy tests showed an effect of ethnicity on group membership. Boys who identified themselves as “mixed” were more likely to be in the victims group ($p \leq .02$). There were no differences in the group membership distribution among the white, African-American, and Hispanic boys. There was a significant effect of age ($p \leq .01$). The overall mean age was 14.0 years; bully-victims were older (mean = 14.3 years) and victims were younger (mean = 13.6 years). There were no significant differences by group based on parent education or grade point average.

Confirmatory Factor Analyses

After minimal model modification, the CFAs had an excellent fit in all groups for both ML and robust solutions (Neutrals: ML $\chi^2 = 172.66$, 77 *df*; CFI = .96, RMSEA = .044; S–B $\chi^2 = 116.50$, 77 *df*; RCFI = .95, RMSEA = .028; Bullies: ML $\chi^2 = 114.18$, 78 *df*; CFI = .97, RMSEA = .039; S–B $\chi^2 = 95.77$, 78 *df*; RCFI = .98, RMSEA = .028; Bully-Victims: ML $\chi^2 = 101.28$, 78 *df*; CFI = .97, RMSEA = .039; S–B $\chi^2 = 88.60$, 78 *df*; RCFI = .98, RMSEA = .026; Victims: ML $\chi^2 = 125.56$, 77 *df*; CFI = .93, RMSEA = .059; S–B $\chi^2 = 97.25$, 77 *df*; RCFI = 0.95, RMSEA = .038). All hypothesized factor loadings for all groups were significant ($p \leq .001$). Similar correlated error residuals were added in each group, and grade in school was added as a predictor of common drug use. Table I summarizes the factor loadings, means, and standard deviations of the measured variables. Table II summarized the correlations among all of the latent variables and with grade in school by group.

Multisample analyses

Before it would be meaningful to contrast the four samples on their correlations and on their means, we had to ascertain that there was reasonable factorial invariance between the two groups. A baseline model provided the benchmark for further comparisons. This model had an outstanding fit [ML $\chi^2(310, n = 1,312) = 513.67$; CFI = .96; RMSEA = .022; S–B $\chi^2 = 402.45$; RCFI = .97, RMSEA = .015]. Adding the invariance constraints on the full measurement model produced a significant decrement in fit (adjusted χ^2 difference = 83.18, 30 *df*), although all of the fit indexes were still excellent. A scaled χ^2 such as the Satorra–Bentler χ^2 cannot be used directly for χ^2 difference testing of nested models because a difference between two-scaled χ^2 is not distributed as chi-square (Satorra Bentler, 2001). An adjustment has been developed to

Table I. Means, Standard Deviations, and Factor Loadings for Each Group

Variable	Neutrals		Bullies		Victims		Bully-victims	
	Mean (SD)	Factor loading	Mean (SD)	Factor loading	Mean (SD)	Factor loading	Mean (SD)	Factor loading
Grade (7 th —12 th)	8.64 (1.88)	na	8.54 (1.82)	na	8.05 (1.72)	na	8.63 (1.92)	na
Problem behavior								
Delinquency (1 = low, 5 = high)	1.46 (0.61)	0.79	2.29 (0.95)	0.90	2.05 (0.88)	0.77	2.86 (1.11)	0.78
Brought weapon to school (1 = never, 5 = 5 or more)	1.23 (0.57)	0.59	1.60 (0.88)	0.67	1.34 (0.60)	0.75	1.96 (1.11)	0.77
Hard drugs (1 = never, 7 = 15+ times in last month)	1.10 (0.38)	0.51	1.47 (0.97)	0.59	1.28 (0.86)	0.53	1.79 (1.39)	0.69
Common drugs (1 = never, 7 = 15+ times in last month)	1.82 (1.24)	0.75	2.70 (1.65)	0.71	2.33 (1.56)	0.63	3.00 (1.76)	0.73
Psychosocial health								
Esteem (1 = low, 5 = high)	4.07 (0.76)	0.54	3.94 (0.79)	0.51	3.86 (0.78)	0.63	3.71 (0.97)	0.74
Control of life (7 = in hands, 1 = out of hands)	5.14 (1.81)	0.59	4.75 (1.86)	0.57	4.93 (1.98)	0.47	4.61 (1.87)	0.48
Life is empty/exciting (1 = empty, 7 = exciting)	4.90 (1.61)	0.67	4.62 (1.72)	0.72	4.69 (1.74)	0.59	4.37 (1.84)	0.51
Injury (1 = never, 5 = 5 or more)								
At school	1.19 (0.64)	0.67	1.35 (0.82)	0.64	1.44 (0.96)	0.56	1.79 (1.20)	0.66
Going to/from school	1.14 (0.59)	0.70	1.42 (0.88)	0.77	1.41 (0.93)	0.62	1.82 (1.35)	0.72
In neighborhood	1.27 (0.80)	0.76	1.70 (1.16)	0.84	1.71 (1.21)	0.85	2.32 (1.55)	0.75
While out with friends	1.24 (0.71)	0.79	1.69 (1.15)	0.80	1.68 (1.22)	0.73	2.29 (1.60)	0.70
Positive attitudes toward school								
Enjoys school	3.17 (1.16)	0.55	2.74 (1.25)	0.41	3.03 (1.18)	0.48	2.54 (1.24)	0.34
Importance of good grades	4.39 (0.87)	0.67	4.09 (1.02)	0.69	4.30 (1.03)	0.73	3.89 (1.25)	0.91
Cares about school performance	4.21 (1.13)	0.40	3.90 (1.29)	0.49	4.18 (1.21)	0.49	3.83 (1.41)	0.49

Table II. Correlations Among Latent Variables and Grade in School

	Problem behavior	Psychological health	Injury	School attitudes
Neutrals (n = 638)				
Problem behavior				
Psychological health	-.15*			
Injury	.20**	-.09		
School attitudes	-.46***	.72***	-.05	
Grade in school	.10*	-.08	-.15***	-.10*
Bullies (n = 299)				
Problem behavior				
Psychological health	-.21**			
Injury	.43***	-.32***		
School attitudes	-.51***	.70***	-.23**	
Grade in school	.09	.10	-.05	-.07
Bully-Victims (n = 195)				
Problem behavior				
Psychological health	-.49***			
Injury	.65***	-.29***		
School attitudes	-.53***	.59***	-.24**	
Grade in school	.17*	-.06	-.01	-.20***
Victims (n = 180)				
Problem behavior				
Psychological health	-.17			
Injury	.34***	-.15		
School attitudes	-.51***	.66***	-.06	
Grade in school	.15	-.10	-.11	-.06

* $p < .05$.** $p < .01$.*** $p < .001$.

counter this problem which is reported in Satorra and Bentler (2001). After dropping three constraints as suggested by the LM test, the adjusted difference was virtually nonsignificant, especially considering the large sample size (χ^2 difference = 40.25, 27 *df*; critical value for χ^2 , $p = .05$, 27 *df* = 40.11). Fit indexes were excellent. Equality constraints that equated the bully-victims and the neutrals on common drug use and hard drug use were reported as untenable by the LM test, and they were dropped. Because of the dropping of three constraints, there is some degree of partial measurement invariance in the multisample model. However, this minimal degree of partial invariance did not preclude us from taking the next steps in the analyses, the comparison of the covariances, and the testing of the means (Aiken, Stein, & Bentler, 1994; Byrne et al., 1989).

When we constrained the covariances in the four groups to equality, several differences were statistically significant. Covariances between problem behavior and injury were significantly different in contrasting bully-victims ($r = .65$) versus neutrals (.20) and bully-victims versus bullies (.43). The covariances between problem behavior and school attitudes also were significantly different for bully-victims ($r = -.53$) and neutrals (-.46). Covariances between psychological health and injury were significantly different for bully-victims (-.29) and neutrals (-.09) and for bully-victims versus bullies (-.15). Although we observed what appeared to be other large differences between the correlations for the different

groups, the covariances were not significantly different, perhaps because of variations in the sizes of standard errors.

Latent Means Comparisons

Bully-victims overwhelmingly reported the most problem behavior, injury, psychological dysfunction, and negative attitudes about school. Using bully-victims as the reference group, we found large differences in latent means almost universally as indicated by the z -scores (a) in favor of the neutral boys [problem behavior, $z = -14.64$ (negative score means a lower score); psychological health, $z = 0.75$; injury, $z = -9.49$; school attitudes, $z = 6.04$]. All probabilities $<.001$; (b) in favor of the bullies [problem behavior, $z = -4.04$ ($p < .001$); psychological health, $z = 2.30$ ($p < .05$); injury, $z = -4.65$ ($p < .001$)]. The difference in school attitudes was not significant, but it was in the predicted direction, ($z = 1.51$); and (c) in favor of victims [problem behavior, $z = -7.61$ ($p < .001$); psychological health, $z = 1.71$ ($p < .05$, one-tailed test only); injury, $z = -3.63$ ($p < .001$); school attitudes, $z = 3.81$ ($p < .001$)].

We also examined whether there were significant mean differences for individual items in this study. The measured items were constrained to equality in the latent means model, and departures from nonsignificant χ^2 values were reported by the LM test. We observed that the bully-victims reported much more weapon possession than the neutrals and the victims, $\chi^2 = 30.28$, 1 df and 20.63, 1 df , respectively (critical value for χ^2 , $p = .05$, 1 $df = 3.84$). Other differences included more common drug use among bully-victims than among neutrals, bullies, and victims ($\chi^2 = 22.07$, 8.07, and 5.87, respectively). These findings in part may be because of the older average age of bully-victims. Also, the bully-victims reported more delinquent behaviors than the neutrals and the victims, $\chi^2 = 23.39$ and 10.87, respectively.

Discussion

Male Bully-Victims

As hypothesized and congruent with other studies, we found that the bully-victims were clearly the most at-risk subgroup within a large and diverse population of middle school and high school males. The bully-victims reported more problem behaviors, the poorest psychological health, the most physical injury, and the poorest school attitudes in comparison with the boys who had been categorized as neutrals, bullies, or victims. The only comparison that was nonsignificant among these four groups was the difference between a positive school

attitude for bully-victims and a positive school attitude for bullies. The greater psychological health reported by the victims was a weaker relationship, but it was significant as a one-tailed test in the predicted direction. Thus, this large sample provides support for violence-prevention intervention strategies that require identifying and targeting those at the highest risk: the bully-victims.

Furthermore, detailed analyses examining item means found more weapon carrying by the bully-victims, a finding that is similar to results from the Nansel et al. (2004) study. The violent events involving weapons reported in secondary schools in recent years are causes for alarm among educators, parents, school officials, and students themselves. Our results indicated that youth who were already most at risk for a variety of maladaptive outcomes because of greater psychological problems, poor attitudes about school, and other delinquent behaviors were also most likely to carry weapons.

Furthermore, the bully-victims reported the most injury as well as weapon carrying. Because of their prior injuries, they may feel particularly vulnerable and believe that they need to carry weapons for self-protection as well as for intimidation of others. This finding is alarming because research has shown that bully-victims have low self-control (Haynie et al., 2001). Thus, educators should be aware that there is a greater possibility for bully-victims to use the weapons. Indeed, these youth are categorized as bully-victims for the very reason that they reported considerable victimization as well as having victimized others. Prior research has found that bully-victims have the "worst of both worlds" (Juvonen et al., 2003; p. 1235).

Ethnic Differences

It was illuminating to find a significant difference among respondents who classified themselves as having mixed ethnicity. No other study has reported this outcome perhaps, in part, because other samples may not have had a sufficiently large number of adolescents of mixed ethnicity. The biracial and multiracial youth were more likely to be victims. It is possible that these adolescents are "picked-on" by individuals in all other ethnic groups and that they feel that they do not have any distinct group to which they belong and with which they can identify. This may have a negative effect on their self-esteem. They may not receive protection from an "in-group" of their own. It is common, furthermore, for victims to be ostracized by their peers (Juvonen et al., 2003), and other classmates often avoid associating with them because of a fear of being bullied themselves (Nansel et al., 2001). Thus, these findings can play an

important role in intervention programs. Children from mixed ethnic backgrounds may need to have specific problem areas addressed that are distinct from other children who also are victims, but who are from a single ethnic background. A possible avenue for adults who work with these youth is a celebration of multiethnic identity along with an increased awareness of potential problems. Extra care should be taken to assure safety for children who may feel marginalized by their peers.

Interventions to Combat Bullying

We found negative attitudes about school among the bully-victims. An increased emphasis on school success and self-esteem within bullying intervention programs may help to mitigate some of the internal distress that bully-victims experience at school, and it may create a more positive association with school and future academic goals (Nansel et al., 2001). Interventions that are designed to promote “win-win” strategies among youth may also be expected to increase social competence and to decrease bullying (Ianni, 1989). School programs that rely on peer support systems have also experienced considerable success (Cowie, Naylor, Chauhan, & Smith, 2002). Bullied children using peer support networks have described these systems as helpful because they show somebody cares (Gini, 2004). The program in the United Kingdom described by Cowie et al. (2002) improved the quality of life at their schools and issued a strong challenge to the dominance of school bullies.

Parental involvement, strong discipline at school, and an emphasis on academics appear to discourage bullying and bullying victimization (Juvonen & Graham, 2004; Samples, 2004). Gini (2004) has described an intervention in Italy that involved teachers, students, and parents working together to achieve a more favorable antibullying climate in the schools. Overall, evaluations of antibullying programs have been encouraging, especially among programs that aim to reduce aggressive behavior among high-risk youth and the incidence of victimization (DeRosier, 2004; Gini, 2004; Juvonen & Graham, 2004; Samples, 2004). Most researchers favor high-quality, long-term educational programs aimed at decreasing use of aggression *and* increasing social competence.

It is essential to identify specific areas that affect bullies, victims, and bully-victims differently to craft interventions that can make lasting changes and reduce the negative long-term consequences associated with bullying. Victims of bullying often suffer from a wide range of problems that last into adulthood, such as psychosomatic symptoms, chronic depression, and suicidal ideation or suicide (APA, 2005; Gini, 2004). In adulthood,

bullies are more likely to commit adult crimes and become abusive spouses and parents (Gini, 2004; Olweus, 1993). Findings from the present study can aid in the development of interventions to help ameliorate bullying among youth as well as the problems that are associated with it.

Limitations

This study was conducted in the United States and may be limited and culture bound in some of its findings. However, our results support other studies that have been conducted in a variety of other nations and cross-nationally (e.g., Nansel et al., 2004). For instance, our findings about more problem behavior among bully-victims corroborate the findings of Kokkinos and Panayiotou (2004) in Cyprus; our other results about the disadvantages of bully-victims support the findings of Veenstra et al. (2005) in the Netherlands and Kumpulainen and Räsänen (2000) in Finland. However, our findings about weapon possession may be more applicable and more of a problem in the United States, although use of weapons could be a problem in other countries.

Furthermore, our study only has measures of physical bullying and a power imbalance in terms of physical aggression. Further study is warranted about relational bullying that is more common among girls than physical bullying. Additional measures, including social shunning, verbal abuse, mocking, and snubbing, would allow us to examine associations among bullying group membership among both boys and girls and the psychosocial variables that were included in our study. In addition, as in so many studies, we are relying on single informant self-reports that may be inaccurate. We do not have corroborative information from parents, peers, or teachers.

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