ISSUES&ANSWERS REL 2011–No. 114

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Regional Educational Laboratory
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Student-reported overt and relational aggression and victimization in grades 3–8

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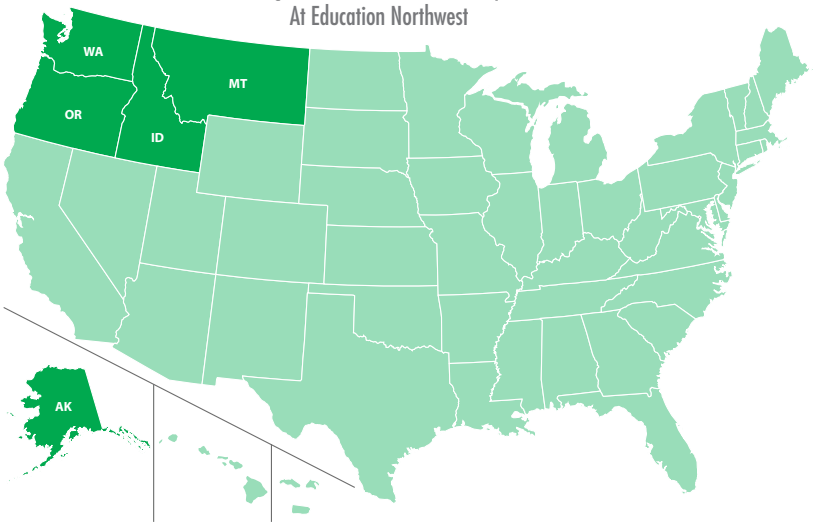

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Summary REL 2011–No. 114

Student-reported overt and relational aggression and victimization in grades 3–8

This secondary analysis of survey data from a voluntary sample of 11,561 grade 3–8 students examines the prevalence and distribution of aggression, victimization, and approval of aggression, both overt (verbally and physically aggressive behavior intended to threaten or harm) and relational (behavior intended to harm someone's relationships with others).

Federal and state laws require schools to develop and implement antibullying policies, with clear procedures for responding to bullying and student aggression. The Oregon Department of Education and the Oregon School Safety Center requested this study to learn more about aggression, victimization, and approval of aggression among elementary and middle school students. Policymakers were particularly interested in relational aggression—behavior intended to hurt someone by harming that person's relationships with others. Specifically, the study asked:

- How prevalent are student-reported victimization, aggression, and agreement with beliefs that approve of aggression among students in grades 3–8?
- How much of the variation in student-reported victimization, aggression, and beliefs about aggression is associated with school characteristics and how much with student characteristics?
- How do student-reported victimization, aggression, and beliefs about aggression differ by gender and grade level for students in grades 3–8?

This secondary analysis of data from two surveys conducted in October 2005 covered a voluntary sample of 11,561 students in rural and urban schools in two Oregon counties. Students in grades 3–5 completed the Normative Beliefs about Aggression Survey (Huesmann and Guerra 1997), and students in grades 3–8 completed the Peer Experiences Questionnaire (Vernberg, Jacobs, and Hershberger 1999). Both surveys gathered information on students' beliefs about aggression. The Peer Experiences Questionnaire also gathered information on how frequently students were the victims or the perpetrators of overt or relational forms of aggression. Overt aggression includes verbal and physically aggressive behavior intended to threaten or physically harm another student. Relational aggression includes behavior intended to harm another student's relationships with others, such as intentionally ignoring or leaving the student out of group activities or telling lies so others will not like the student.

The report presents both descriptive statistics and the results of hierarchical linear modeling (all results are reported at the .05 level of statistical significance). The following are key findings:

- On the Normative Beliefs about Aggression Survey, 1–12 percent of girls and 4–20 percent of boys in grades 3–5 reported that retaliation was "sort of OK" to "perfectly OK." For both girls and boys, the two scenarios with the highest percentage of students believing that retaliation was OK were a girl screaming at a boy who said something bad to her and a girl hitting a boy who hit her first. Aggression in general situations was considered "sort of OK" to "perfectly OK" by 2–5 percent of girls and 4–8 percent of boys.

- For the study sample, school factors were associated with 1–7 percent of the variation in student survey scores, and student characteristics, such as gender and grade level, were associated with 93–99 percent of the variation.

- On the Normative Beliefs about Aggression Survey, boys approved of aggression more than girls did both in general social situations and in situations involving retaliation. Differences were also associated with grade level, with students in grade 5 reporting higher approval of retaliation than students in grade 3.

- On the Peer Experiences Questionnaire, students in grades 7 and 8 reported higher agreement with beliefs that endorsed aggression than did students in grade 3 when asked whether bullying "pays off," whether a student who gets bullied "deserves it," and whether a student should intervene if others are fighting.

- For overt victimization, 12–61 percent of girls and 17–60 percent of boys reported being victimized at least once during the last 30 days, and 2–10 percent of girls and 3–14 percent of boys reported being victimized once or more a week, with the percentage varying by the behavior. For both girls and boys, the three most common types of overt victimization were mean teasing, physical aggression, and verbal threats. Twenty percent of girls also reported being victimized by mean tricks intended to scare them, and 20–22 percent of boys reported being chased by someone threatening to hurt them, having others "gang up" against them, and having mean tricks played on them.

- For relational victimization, 41–48 percent of girls and 31–42 percent of boys reported exposure during the last 30 days, and 4–6 percent of girls and boys reported exposure once or more a week, depending on the behavior. The most common type of relational victimization reported by both girls and boys was being lied about so others would not like them.

- For overt aggression, 3–37 percent of girls and 7–44 percent of boys reported perpetrating such acts during the last 30 days, and 0.4–2 percent of girls and 1–5 percent of boys reported perpetrating such acts once or more a week, depending on the behavior. Mean teasing, physical aggression, verbal threats, and playing mean tricks were the most common types of overt aggression reported by both girls and boys.

- For relational aggression, 21–28 percent of girls and 20–24 percent of boys reported perpetrating such acts during the last 30 days, and 0.8–1 percent of girls and 1–2 percent of boys reported perpetrating such acts once or more a week, depending on the behavior. For both girls and boys, the most common type of relational aggression was ignoring a student on purpose.

- Boys reported more overt victimization, overt aggression, and relational aggression toward other students than did girls. Differences in overt victimization were also associated with grade level, with students in grade 3 reporting more overt victimization than students in grades 5–8. No differences were found between students in grades 3 and 4.

- No significant differences between girls and boys were found in the frequency of relational victimization. However, differences in reported relational victimization between girls and boys varied by grade level, with larger differences in grades 5–8 than in grade 3.

- Differences between overt and relational aggression were also associated with grade level. Students in grades 3–6 reported less overt aggression toward others than did students in grades 7 and 8. Students in grade 3 reported less relational aggression than did students in each of the other grades. The difference between girls and boys was larger in grade 3 than in grade 8.

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This secondary analysis of survey data from a voluntary sample of 11,561 grade 3–8 students examines the prevalence and distribution of aggression, victimization, and approval of aggression, both overt (verbally and physically aggressive behavior intended to threaten or harm) and relational (behavior intended to harm someone's relationships with others).

WHY THIS STUDY?

Bullying diminishes the academic learning and social well-being of student victims, student bullies, and student bystanders (Arseneault et al. 2006; Gini and Pozzoli 2009). Nationally, a third of grade 6–10 students report moderate or frequent involvement in bullying, as victim or bully (Dinkes, Kemp, and Baum 2009a, 2009b; Nansel et al. 2001). School administrators, particularly in middle school, report that bullying is the greatest disciplinary problem in their school. In 2006, 43 percent of middle school administrators and 21 percent of elementary school administrators reported daily or weekly occurrences of bullying in their school (Nolle, Guerino, and Dinkes 2007). Chronically victimized students often avoid restrooms, hallways, and the cafeteria or skip school to avoid being subjected to bullying (DeVoe and Kaffenberger 2005; Dinkes, Kemp, and Baum 2009a, 2009b). Bullying has also been associated with fighting, carrying weapons, and catastrophic events such as school shootings and student suicides (Kim and Leventhal 2008; Vossekuil et al. 2002).

Many aggressive behaviors in schools are associated with bullying (Dinkes, Kemp, and Baum 2009a, 2009b), which is usually defined as an intentional act of overt or relational aggression in situations of unequal power between victim and bully (Nansel et al. 2001; Olweus 1994; Ross 2003). *Overt aggression* refers to verbal aggression, such as mean teasing and threats and physical aggression such as hitting, kicking, and shoving. *Relational aggression* includes behaviors intended to harm someone's social relationships with others, such as intentionally excluding or ignoring someone and spreading harmful lies or rumors (Crick 1996; Underwood, Galen, and Paquette 2001).

Studies of bullying in school

A study by the Kaiser Family Foundation (2001) finds that a majority of elementary and middle school students consider bullying to be a problem in their school. In the nationally representative

Historically, policies and research related to bullying and aggressive behavior in schools have focused on overt aggression. However, evidence is growing that relational aggression is also associated with such negative outcomes

survey, 74 percent of students ages 8–11 reported "kids at their school get teased or bullied" and 55 percent perceived bullying as a big problem in their school. Among students ages 12–15, 86 percent reported bullying in their school and 68 percent stated that it was a big problem. The study did not ask students about their direct experiences with bullying, as victim or aggressor.

Other studies have examined the prevalence of victimization and bullying among U.S. middle school and high school students. Nansel et al. (2001) analyzed responses by a representative sample of 15,686 U.S. students in grades 6–10 to the World Health Organization's Health Behavior in School-aged Children survey. Almost a third (29.9 percent) of U.S. students reported moderate or frequent involvement in bullying incidents: 13 percent were identified as having participated in bullying, 10.6 percent reported being a victim of bullying, and 6.3 percent had been both perpetrator and victim. Middle school students reported more frequent involvement than did high school students.

In 2009, 19.9 percent of grade 9–12 students who completed the biennial U.S. Department of Health National Youth Risk Behavior Survey, a nationally representative survey on the prevalence of victimization and bullying among public and private middle and high school students (U.S. Department of Health and Human Services 2009a), reported being bullied on school property during the previous 12 months (U.S. Department of Health and Human Services 2009b). And 32 percent of students reported being bullied at school during the 2007/08 school year (Dinkes, Kemp, and Baum 2009a), according to the School Crime Supplement of the National Crime Victimization Survey, developed jointly by the National Center for Education Statistics and the Bureau of Justice Statistics and administered to a nationally representative sample of 8,734 students ages 12–18 (U.S. Department of Education and U.S. Department of Justice 2007).

There are no nationally representative data on the prevalence of bullying among U.S. elementary school students, though there is evidence that bullying may be common among this age group. In a survey of a nonrepresentative sample of 7,083 students in grades 4–5, more than a third (33.7 percent) reported victimization by bullying behaviors and almost two-thirds (65.2 percent) reported witnessing bullying incidents (Bradshaw et al. 2007). Using real-time observations, another study found that bullying episodes occurred at an average of twice an hour in participating classrooms and that peers were involved as participants or bystanders in 85 percent of incidents (Atlas and Pepler 1998).

Bullying is associated with school and psychosocial adjustment problems. Bullying has many negative associations with academic achievement and the social and emotional development of elementary and middle school students (Nansel et al. 2004). Elementary school bullies and their victims have more social problems, participate less in classroom activities, are less connected to school, and have poorer academic outcomes than peers who are not involved in bullying (Arseneault et al. 2006; Buhs, Ladd, and Herald 2006; Crick and Grotpeter 1995). Middle school students who bully or are victimized by bullying are also more likely to have problems that interfere with success in school, such as higher rates of physical complaints, truancy or school avoidance, substance abuse, peer rejection, and mental health conditions such as anxiety and depression (DeVoe and Kaffenberger 2005; Dill et al. 2004; Due et al. 2005; Nansel et al. 2001; Skara et al. 2008).

Historically, policies and research related to bullying and aggressive behavior in schools have focused on overt aggression. However, policymakers and educators have become concerned about the growing evidence that relational aggression is also associated with such negative outcomes (Merrell, Buchanan, and Tran 2006). Students subjected to relational forms of aggression, even without overt aggression, are likely to have lower rates of classroom participation and to experience peer

rejection, engage in alcohol or drug use, and have lower self-esteem (Buhs, Ladd, and Herald 2006; Crick, Ostrov, and Werner 2006).

A secondary analysis of data from the 2001 School Crime Supplement of the National Crime Victimization Survey found that 14 percent of secondary students ages 12–18 reported being bullied during the previous six months (DeVoe and Kaffenberger 2005). Of those students, 23.6 percent reported being victims of overt aggression such as threatening or physically aggressive behaviors, 31.3 percent reported being victimized by both overt and relational forms of bullying, and 45.1 percent reported being victimized by relational aggression only. Students who reported being victimized by both forms of aggression experienced more difficulty in school than students who were subjected to only one form.[1]

Student bystanders of bullying also experience social and peer difficulties. They may fear retribution or negative changes in peer relationships if they associate with or stand up for the victim (U.S. Department of Education 1998). Bystanders may also harbor feelings of helplessness or guilt because they fail to intervene or because they give in to peer pressure and join in the bullying (O'Connell, Pepler, and Craig 1999; Salmivalli 1999).

Student characteristics associated with victimization and aggression. Grade level and gender are associated with differences in victimization, aggression, and beliefs about aggression. The 2001 National Crime Victimization Survey and the School Crime Supplement found victimization by school bullying was highest for students in grades 6 and declined for students in higher grades (DeVoe and Kaffenberger 2005). Students who reported being victimized decreased from 24.3 percent in grades 6–8 to 16 percent in grade 8. An investigation of bullying among 130,000 Norwegian students also found higher rates of victimization among students in lower grades (Olweus 1994).

Research comparing the rates of relational aggression perpetrated by girls and by boys has found mixed results (Merrell, Buchanan, and Tran 2006). Some studies suggest that girls are more likely to exhibit relational aggression than are boys (Crick and Grotpeter 1995), while others report that boys exhibit relational aggression at a similar or higher rate than girls (Crick, Bigbee, and Howes 1996; DeVoe and Kaffenberger 2005; Galen and Underwood 1997; Henington et al. 1998). One factor that may influence gender differences associated with relational aggression is the perspective of the victimized student. Crick and Grotpeter (1995) find that boys regard physical aggression (a type of overt aggression) as more hurtful than relational aggression, whereas girls regard relational and physical aggression as equally hurtful.

In addition to age or grade level and gender, studies investigating factors associated with student aggression and victimization suggest that students' normative beliefs about aggression may be important (Aslund et al. 2009; Huesmann and Guerra 1997; Russell and Owens 1999; Xie, Farmer, and Cairns 2003). Students who believe that aggression is acceptable in general social situations or as retaliation to provocation are more likely to act aggressively (Huesmann and Guerra 1997). Students who approve of relational aggression engage in higher rates of relationally aggressive behavior; students who believe that physical aggression is acceptable but that relational aggression is not tend to engage in higher rates of physical aggression (Werner and Nixon 2005).

Study context

Oregon passed legislation in 2001 requiring school districts to adopt policies prohibiting harassment, intimidation, and bullying. Districts were required to address acts of overt aggression that physically harm a student, damage a student's property, place a student in reasonable fear of physical harm, or create a hostile educational setting (Oregon Legislative Assembly 2001). Since then, policymakers

Grade level and gender are associated with differences in victimization, aggression, and beliefs about aggression

Oregon passed legislation in 2001 requiring school districts to adopt policies prohibiting harassment, intimidation, and bullying. State officials requested this study to learn more about aggression, victimization, and approval of aggression among students in elementary and middle school

and educators have become increasingly concerned about relational aggression as awareness of its potential association with negative student outcomes has grown (Merrell, Buchanan, and Tran 2006).

The Oregon Department of Education and the Oregon School Safety Center requested this study to learn more about the prevalence and distribution of aggression, victimization, and approval of aggression among students in elementary and middle school. State officials were particularly interested in learning more about relational aggression and victimization—behaviors intended to hurt someone by harming his or her relationships with others. This study involves a secondary analysis of student survey data collected from a voluntary sample of 38 schools in Oregon. The existing survey data were originally collected in October 2005 from 11,561 students in grades 3–8 in a voluntary sample of schools that were interested in implementing a similar framework of antibullying and violence prevention interventions.

Research questions. Three research questions guided this study:

- How prevalent are student-reported victimization, aggression, and agreement with beliefs that approve of aggression among students in grades 3–8?
- How much of the variation in student-reported victimization, aggression, and beliefs about aggression is associated with school characteristics and how much with student characteristics?
- How do student-reported victimization, aggression, and beliefs about aggression differ by gender and grade level for students in grades 3–8?

Participants and settings. The survey data analyzed for this study were originally collected as part of an external evaluation of the Mid-Valley Partnership Safe Schools/Healthy Students Initiative, which funds school–community collaborations in high-need areas to reduce violence and substance abuse (Nishioka et al. 2006). The initiative was designed to provide elementary and secondary schools in two neighboring counties with a framework for violence prevention services. All participating schools received family advocates and mental health support for at-risk students, along with resources to implement a student threat assessment response protocol for weapons and school violence incidents (as required by district and state policy). On a voluntary basis, schools could also obtain professional development and resources to implement evidence-based violence prevention curricula.

The violence prevention curricula used in the project were *Second Step: A Violence Prevention Curriculum* (Committee for Children 1992) for elementary schools and *Aggressors, Victims, and Bystanders: Thinking and Acting to Prevent Violence* (Slaby, Wilson-Brewer, and Dash 1994) for middle schools. Both aimed to change schoolwide normative beliefs about aggression so that students would be less likely to join in or encourage bullying and more likely to seek adult help to stop it (U.S. Department of Health and Human Services 2006, 2009). Implementation of the curricula was voluntary. Of the 109 public schools in the two-county area that served students in grades 3–8, 69 schools indicated an interest in the curricula for the coming year and were included in plans to disseminate violence prevention curricula. The reasons some schools were not included varied: some schools were not interested, some were implementing a different violence prevention curriculum, and some were implementing the curriculum but did not need grant resources for additional professional development.

At the time of the surveys in October 2005, none of the schools was fully implementing the violence prevention curriculum as recommended by its

developers. Nine schools were teaching the violence prevention curriculum to grades 3–5, with varying levels of fidelity, and 13 schools were planning to receive training during the coming school year. Of the nine schools that were teaching the violence prevention curriculum, four had partially implemented the curriculum for three or more years and five had implemented it for the first time during the previous year. Of the 22 schools serving grades 6–8, four had implemented the selected curriculum schoolwide during the 2004/05 school year, and 18 were in the training or planning stage for implementing the curriculum during the 2005/06 school year.

To provide needs assessment information for the grant and for participating schools, 38 of the 69 urban and rural schools that had received or were scheduled to receive violence prevention were recruited to participate in the surveys. The surveys were administered to all students in these schools. Information about the participating schools and students in the sample of 38 schools and for all 109 schools in the two-county area is in table 1. Box 1 summarizes the study methods and appendix A provides details.

STUDY FINDINGS

An overview of the study findings is presented here, followed by detailed findings by research question.

On the Normative Beliefs about Aggression Survey, from 1.3 percent to 12.4 percent of girls and 3.6 percent to 20.2 percent of boys in grades 3–5 reported that retaliation was "sort of OK" to "perfectly OK"

TABLE 1

Descriptive information about schools in the study sample and in the two-county area, 2005 (number unless otherwise indicated)

		Schools administering each survey		October 1 enrollment		Percent of student enrollment		
Type of school	Schools	Normative Beliefs about Aggression Survey[a]	Peer Experiences Questionnaire[b]	Grades 3–5	Grades 6–8	Free or reduced price lunch	English as a second language	Racial/ ethnic minority
Sample schools								
Elementary (grades K–5)	15	15	14[a]	3,177	0	65.1	28.5	47.0
K–8 or K–12	8	7[b]	8	596	490	40.0	19.1	32.6
Middle school (grades 6–8)	15	0	15	0	9,585	49.3	15.4	35.7
Total sample	38	22	37	3,773	10,075	54.4	10.7	38.1
All schools in the two-county area								
Elementary (grades K–5)	57	na	na	11,480	na	55.9	22.5	43.6
K–8 or K–12	15	na	na	960	895	36.4	12.7	24.5
Middle school (grades 6–8)	19	na	na	na	12,064	52.3	16.2	36.2
Total eligible	91	na	na	12,440	12,959	53.3	19.8	39.8

na is not applicable.

a. One K–5 school did not administer the survey.

b. One K–8 school did not administer the survey.

Source: Authors' analysis using data from U.S. Department of Education (2007); Oregon Department of Education (2005); and University of Oregon (2005a,b).

BOX 1

Study methods

Study sample. The sample of 38 schools included 54 percent of the student population in a two-county area. Students in the sample were similar to the student population in the two-county area in the percentage receiving free or reduced-price lunch (1.1 percentage points higher likelihood) and percentage of racial/ethnic minority students (1.7 percentage points less likely to be of a racial/ethnic minority group). But they were 9.1 percentage points less likely to be English language learner students. Of the 38 schools, 15 were elementary schools serving grades K–5, 8 were K–8 or K–12 schools, and 15 were middle schools serving grades 6–8.

Survey administration. Surveys were administered to students in grades 3–8 during the last two weeks of October 2005 by the prevention coordinator or classroom teacher, following procedures to protect student privacy approved by the University of Oregon's Protection of Human Subjects Institutional Review Board. Surveys were precoded with unique codes identifying the district, school, and classroom. The surveys, available in English and Spanish, were administered schoolwide during homeroom or a block class. For all grade levels, approximately half the participants were girls and half were boys.

Study measures. The data in the two existing databases used in the secondary analysis were collected from the Normative Beliefs about Aggression Survey (Huesmann et al. 1992), administered to students in grades 3–5, and the Peer Experiences Questionnaire (Vernberg 1990; Vernberg, Jacobs, and Hershberger 1999), administered to students in grades 3–8.

The Normative Beliefs about Aggression Survey is a 20-item scale that measures students' general approval of aggression and of retaliation in response to provocation. Questions are asked in relation to specific scenarios between boys, between girls, and between girls and boys. The survey response rate was 83 percent. Internal consistency, measured using Cronbach's alpha, was .77–.89 for the whole sample and .70–.89 for the Spanish-language version.

Data from three of the four Peer Experiences Questionnaire scales (Parts 1, 2, and 4) were also reanalyzed for this study, including information about self-reported victimization, aggression, and attitudes about aggression. Part 3 was not included because its constructs were not fully aligned across elementary and middle school versions. The survey response rate was 85 percent. Cronbach's alpha coefficients were .77–.89 for both the entire sample and the Spanish-language version.

Part 1 (Victimization—What happened to me) and part 2 (Aggression—What I did) are both 10-item scales asking students to report how frequently they experienced or perpetrated specific types of overtly or relationally aggressive behavior during the previous month: 1 = never, 2 = once or twice, 3 = a few times, 4 = about once a week, 5 = a few times a week (Bentley and Li 1996; Bradshaw, Sawyer, and O'Brennan 2007; DeVoe and Kaffenberger 2005; Silvia et al. 2010; Vernberg, Jacobs, and Hershberger 1999; Atlas and Pepler 1998; Bentley and Li 1996; Crick 1996, 1997; Crick, Ostrov, and Werner 2006; Galen and Underwood 1997; Kim et al. 2010; Kuppens et al. 2008; Marini et al. 2006; Rose and Rudolph 2006; Silvia et al. 2010; Vernberg, Jacobs, and Twemlow 1999). Part 4 (Beliefs about aggression—What I think) is a 17-item scale measuring the extent to which students believe that aggression is acceptable and pays off. Students were asked to indicate their level of agreement with each item using a four-point scale: 1 = I don't agree at all, 2 = I agree a little, 3 = I agree a lot, 4 = I completely agree.

Data analyses. This study conducted a secondary analysis of the survey data collected from 11,561 students in grades 3–8 who attended Oregon schools in the voluntary sample. Because the missing responses for each survey were higher than 5 percent of the total records, multiple imputation procedures were used to fill in missing gender, grade level, and item response data, using an iterative procedure based on the Markov Chain Monte Carlo method (Shafer and Graham 2002). The imputation procedures were completed before scale mean scores were calculated.

Means and standard errors were calculated for each scale. Survey item responses for the total sample and by gender are reported in appendixes B

(CONTINUED)

BOX 1 (CONTINUED)

Study methods

and C. Hierarchical linear modeling was used to determine the extent to which variation in student-reported aggression, victimization, and beliefs about aggression were associated with individual student or school characteristics; two-level (students nested within schools) hierarchical linear models were used to analyze the gender and grade-level differences associated with each survey scale (results are in appendix D). Finally, sensitivity analyses were conducted to examine whether the imputed data drove the results; the results based on imputed data were very similar to those based on the raw data (results are in appendix E).

(see table B2 in appendix B). The two scenarios in which the highest percentage of both girls and boys reported retaliation was OK were a girl screaming at a boy who said something bad to her and a girl hitting a boy who hit her first. The percentages were lower for students who indicated that aggression in general situations was "sort of OK" to "perfectly OK" (from 2.1 percent to 4.5 percent for girls and 4.4 percent to 7.9 percent for boys).

Students in the sample who reported being victims of overt aggression during the last 30 days ranged from 11.9 percent to 61.3 percent for girls and 17.2 percent to 59.7 percent for boys across seven types of overt aggression. The three most common types reported by both girls and boys were mean teasing, physical aggression, and verbal threats.

Both girls and boys reported experiencing relational aggression in the last 30 days. From 41.4 percent to 48.1 percent of girls and 30.6 percent to 41.7 percent of boys reported experiencing at least one of the three types of relational aggression, with "having lies told about you so others would not like you" being the most common for both girls and boys.

Students who reported engaging in overt aggression during the last 30 days ranged from 3.4 percent to 37.2 percent for girls and 7.4 percent to 44.4 percent for boys across the seven types of overt aggression. The most common types reported by both girls and boys were mean teasing, physical aggression, verbal threats, and mean tricks.

Students who reported perpetrating relational aggression ranged from 20.7 percent to 27.9 percent for girls and 20.3 percent to 24.2 percent for boys across the three types of relationally aggressive behaviors. The most common type of behavior for both girls and boys was ignoring a student on purpose to hurt his or her feelings.

More than 93 percent of the variation in each measure of aggression was associated with differences among students, and less than 7 percent with differences among schools. Consistent with previous research, this study found differences associated with gender. Boys reported higher levels of engaging in both overt and relational aggression, being the subject of overt aggression, and endorsing the use of aggression. For relational aggression, the difference between girls and boys varied by grade level, with a larger difference in grades 5, 6, 7, and 8 than in grade 3.

Girls reported being the victim of mean teasing (overt aggression) or of relational aggression at higher frequencies than being the victim of physical violence or threats of physical violence. Although boys also reported mean teasing as their most common experience of victimization, they were more likely to report being hit, kicked, or punched than experiencing any relational form of aggression. Boys were also more likely to report experiencing threats of physical violence than being ignored or left out of activities (two of the three forms of relational aggression studied).

In addition to gender, grade level was associated with significant differences in victimization, aggression, and beliefs about aggression. In general, students in grades 3–5 reported less approval

of aggression than did students in grades 6–8. Students in grades 3–5 reported more frequent victimization by both overt and relational forms of aggression than did students in grades 6–8. Students in grades 3–5 also reported engaging in relational aggression toward others less frequently than did students in grades 6–8.

Percentage of students in grades 3–8 who approve of aggression

The Normative Beliefs about Aggression surveyed grades 3–5 and the Peer Experiences Questionnaire surveyed grades 3–8 on students' approval or retaliation and aggression.

Normative Beliefs about Aggression Survey. The mean and standard errors for the Normative Beliefs about Aggression Survey scales are reported in table 2 by gender and grade level. Responses to each scale item for the sample as a whole are in table B1 in appendix B and responses by gender are in table B2 in appendix B.

The Normative Beliefs about Aggression Survey asked students to indicate the extent to which they approved of retaliation in eight scenarios, with 12 questions that varied by type of provocation, gender of victim and aggressor, and whether the retaliation involved screaming or hitting. A mean score of 1.0–2.0 indicates that the student believed the use of aggression was "really wrong" to "sort of wrong" and a score of 3.0–4.0 that it was "sort of OK" to "perfectly OK." The mean for the approval of retaliation scale was 1.29 for girls and 1.44 for boys (see table 2).

Students who reported retaliation was "really wrong" or "sort of wrong" ranged from 87.6 percent to 98.7 percent for girls and 79.8 percent to 96.4 percent for boys across scenarios (see table B2 in appendix B). Students who indicated that retaliation was "sort of OK" or "perfectly OK" ranged from 1.3 percent to 12.4 percent for girls and 3.6 percent to 20.2 percent for boys. The highest percentage of girls and boys reported approval of retaliation for the same two scenarios: a girl screaming at a boy who said something bad to her (12.4 percent of girls and 20.2 percent of boys) and a girl hitting a boy who hit her first (11 percent of girls and 17.6 percent of boys).

TABLE 2

Means and standard errors for Normative Beliefs about Aggression Survey scales, by gender and grade level, 2005

	Approval of retaliation		Approval of aggression in general situations	
Gender and grade	Mean	Standard error	Mean	Standard error
Girls (*n* = 1,384)				
Grade 3	1.24	.017	1.17	.015
Grade 4	1.28	.018	1.16	.015
Grade 5	1.24	.019	1.19	.015
Total	1.29	.011	1.18	.009
Boys (*n* = 1,386)				
Grade 3	1.37	.021	1.27	.019
Grade 4	1.40	.019	1.25	.017
Grade 5	1.53	.024	1.32	.020
Total	1.44	.013	1.29	.011

Note: Students were asked to indicate their level of agreement with beliefs about aggression using a four-point scale: 1 = really wrong, 2 = sort of wrong, 3 = sort of OK, and 4 = perfectly OK.

Source: Authors' analysis of data from University of Oregon (2005a).

The mean for approval of aggression in general situations was 1.18 for girls and 1.29 for boys (see table 2). The eight scale items asked students to indicate their approval of different types of aggression, such as saying mean things to others, pushing or shoving others when you are mad, or physically fighting with others. Students who reported that aggression was "really wrong" to "sort of wrong" ranged from 95.5 percent to 97.9 percent for girls and 92.1 percent to 95.6 percent for boys across scale items (see table B2 in appendix B). Students who indicated that aggression was "sort of OK" to "perfectly OK" ranged from 2.1 percent to 4.5 percent for girls and 4.4 percent to 7.9 percent for boys across the eight scale items.

Peer Experiences Questionnaire beliefs about aggression scale. The mean and standard errors for the Peer Experiences Questionnaire scales are reported in table 3 by gender and grade level. Responses to each scale item for the sample as a whole are in table C2 in appendix C and responses by gender are in table C4 in appendix C.

The Peer Experiences Questionnaire beliefs about aggression scale asked students to indicate the extent to which they agree with statements that aggression is OK, aggression pays off, and fighting is OK. A mean score of 1.0–2.0 indicates a student's level of agreement was between "I don't agree at all" to "I agree a little" and a score of 3.0–4.0 that it was "I agree a lot" to "I completely agree." The mean for the beliefs about aggression scale was 1.72 for girls and 1.84 for boys (see table 3).

Students who indicated "I don't agree at all" to statements that aggression is OK, aggression pays off, and fighting is OK ranged from 27.9 percent to 86.6 percent for girls and 34.6 percent to 77.3 percent for boys (table C4 in appendix C). Students who indicated "I agree a lot" or "I completely agree" ranged from 3.6 percent to 40.3 percent for girls and 6.8 percent to 43.1 percent for boys. The highest percentage of girls and boys did not agree at all with the same two statements: "when two kids are fighting each other, it's OK to cheer for them" (86.6 percent of girls and 75.5 percent of boys) and "It's OK to be a bully sometimes" (84.2 percent of girls and 77.3 percent of boys).

Prevalence and frequency of victimization and aggression by grade 3–8 students

The means and standard errors for the victimization and aggression scale of the Peer Experiences Questionnaire are reported in table 3 by gender and grade level. The percentages of girls and boys who reported experiencing overt or relational victimization over the last 30 days are shown in table 4 and the percentages who reported perpetrating overtly and relationally aggressive behaviors are shown in table 5. Responses to each scale item for the sample as a whole are in table C1 in appendix C and responses by gender are in table C3 in appendix C.

Peer Experiences Questionnaire victimization scale. The questionnaire uses a five-point response scale to indicate the frequency of experiencing any of 10 types of victimization during the past 30 days: 1 = never, 2 = once or twice, 3 = a few times, 4 = about once a week, 5 = a few times a week. The mean for students reporting overt victimization was 1.40 for girls and 1.52 for boys (see table 3). The means were higher for girls (1.59) and boys (1.70) in grade 3 than in other grades. The means for grades 6–8 ranged from 1.36 percent to 1.39 for girls and 1.49 percent to 1.54 for boys. For relational victimization, the mean scale score was 1.70 for girls and 1.56 for boys.

Mean teasing was the most common type of overt victimization reported by both girls and boys: 61.3 percent of girls and 59.7 percent of boys reported being teased one or more times during the last 30 days, and 10 percent of girls and 13.8 percent of boys reported being teased one or more times a week (see table 4). Physical aggression and verbal threats were other

The highest percentage of girls and boys did not agree at all with the same two statements: "when two kids are fighting each other, it's OK to cheer for them" and "It's OK to be a bully sometimes"

TABLE 3

Means and standard errors for Peer Experiences Questionnaire victimization and aggression scales, by gender and grade level, 2005

	Victimization				Aggression					
	Overt		Relational		Overt		Relational		Beliefs about	
Gender and grade	Mean	Standard error	Mean	Standard error	Mean	Standard error	Mean	Standard error	Mean	Standard error
Girls (n = 5,586)										
Grade 3	1.59	.037	1.75	.045	1.13	.016	1.15	.019	1.65	.021
Grade 4	1.49	.028	1.79	.040	1.16	.016	1.24	.022	1.59	.019
Grade 5	1.45	.027	1.81	.039	1.15	.016	1.22	.017	1.60	.017
Grade 6	1.36	.012	1.64	.020	1.13	.013	1.22	.010	1.67	.009
Grade 7	1.39	.013	1.70	.020	1.19	.019	1.34	.014	1.77	.011
Grade 8	1.36	.012	1.66	.020	1.23	.012	1.38	.014	1.82	.012
Total	1.40	.007	1.70	.010	1.18	.004	1.29	.006	1.72	.005
Boys (n = 5,469)										
Grade 3	1.70	.042	1.81	.047	1.24	.025	1.23	.027	1.66	.021
Grade 4	1.65	.036	1.73	.040	1.26	.020	1.26	.024	1.66	.020
Grade 5	1.49	.028	1.58	.034	1.26	.019	1.23	.019	1.75	.023
Grade 6	1.49	.017	1.51	.020	1.26	.012	1.26	.013	1.81	.012
Grade 7	1.54	.019	1.56	.022	1.35	.015	1.35	.016	1.90	.014
Grade 8	1.49	.016	1.48	.018	1.36	.015	1.35	.016	1.96	.014
Total	1.52	.009	1.56	.010	1.31	.007	1.30	.006	1.84	.007

Note: Students were asked to indicate how frequently they experienced or perpetrated each type of overt or relational aggression in the past 30 days using a five-point response scale: 1 = never, 2 = once or twice, 3 = a few times, 4 = about once a week, 5 = a few times a week. Students were asked to indicate their level of agreement with a beliefs about aggression scale using a four-point scale: 1 = I don't agree at all, 2 = I agree a little, 3 = I agree a lot, 4 = I completely agree.

Source: Authors' analysis using data from University of Oregon (2005b).

commonly reported types of overt victimization by both girls and boys: 29.3 percent of girls and 42.3 percent of boys reported being hit, kicked, or pushed one or more times in the last 30 days, and 3.3 percent of girls and 6.7 percent of boys reported being subjected to physical aggression one or more times a week. The percentage of students who reported being verbally threatened one or more times during the last 30 days was 21.8 for girls and 33.2 for boys, while 1.8 percent of girls and 4.9 percent of boys reported being victimized by this behavior one or more times a week.

Among the three types of relational victimization, from 41.4 percent to 48.1 percent of girls and 30.6 percent to 41.7 percent of boys reported being subjected to the behavior one or more times in the last 30 days. The percentage of girls and boys who reported relational victimization one or more times a week ranged from 4.1 percent to 6.2 percent, depending on the behavior. For both girls and boys, the most common form of relational victimization was having lies told about them so that others would not like them.

Peer Experiences Questionnaire aggression scale. The aggression scale used the same set of behaviors and the same five-point response scale as the victimization scale and asked students to indicate how frequently they perpetrated aggression during the past 30 days. The mean for student-reported overt aggression was 1.18 for girls and 1.31 for boys (see table 3). For relational aggression, the mean was 1.29 for girls and 1.30 for boys.

TABLE 4

Frequency of overt and relational victimization over the past 30 days reported on the Peer Experiences Questionnaire, by gender, 2005

Questions about how often a student was bullied or picked on	Girls (*n* 5,586)		Boys (*n* 5,469)	
	One or more times a month[a]	One or more times a week[b]	One or more times a month[a]	One or more times a week[b]
Overt victimization				
Teased in a mean way	61.3	10.0	59.7	13.8
Hit, kicked, or pushed	29.3	3.3	42.3	6.7
Threats to hurt or beat you up	21.8	1.8	33.2	4.9
Mean tricks to scare or hurt you	20.0	1.6	20.2	2.6
"Ganged up" against you and were mean to you	17.2	2.5	20.6	4.1
Grabbed, held, or touched you in a way you didn't like	17.7	1.9	17.2	2.7
Chased you like he or she was really trying to hurt you	11.9	1.5	21.8	3.6
Relational victimization				
Lies told about you so other kids wouldn't like you	48.1	6.2	41.7	6.2
Ignored on purpose to hurt your feelings	45.8	4.8	30.6	4.3
Left out of things just to be mean to you	41.4	4.1	32.7	4.8

Note: Students were asked to indicate how frequently they experienced each type of overt and relational victimization during the past 30 days, using a five-point response scale: 1 = never, 2 = once or twice, 3 = a few times, 4 = about once a week, 5 = a few times a week.

a. Cumulative percentage of boys or girls who recorded 2–5 for the scale item.

b. Cumulative percentage of boys or girls who recorded 4 or 5 for the scale item.

Source: Authors' analysis using data from University of Oregon (2005b).

A summary of the students' responses to survey items asking about their perpetration of overt or relational aggression during the last 30 days is reported in table 5. Mean teasing was the most common type of overt aggression reported by both girls and boys, with 37.2 percent of girls and 44.4 percent of boys reporting they had participated in such teasing one or more times during the last 30 days, and 2.2 percent of girls and 4.5 percent of boys reporting teasing someone in a mean way one or more times a week. Physical aggression was the second most common type of overt aggression reported by both girls and boys. For this sample of schools, 14.3 percent of girls and 27.4 percent of boys reported hitting, kicking, or shoving other students one or more times during the last 30 days, and 1.1 percent of girls and 2.9 percent of boys reported being physically aggressive toward others one or more times a week. A higher percentage of boys than girls reported perpetrating each of the seven overtly aggressive behaviors.

For the three types of relational aggression, from 20.7 percent to 27.9 percent of girls and 20.3 percent to 24.2 percent of boys reported engaging in the behavior one or more times in the last 30 days, and 0.8 percent to 1.0 percent of girls and 1.4 percent to 2.0 percent of boys reported engaging in the behavior one or more times a week (see table 5). For both girls and boys, the most prevalent form of relational aggression was ignoring others on purpose.

Percentage of variance associated with student- and school-level characteristics

As a first step in the hierarchical linear model analyses, intraclass correlation coefficients were calculated for each survey scale to determine the extent to which differences in student-reported aggression, victimization, and beliefs about aggression were associated with individual student or school characteristics (see table D1 in appendix D). For all scales, 0.7–6.8 percent of the variance in

TABLE 5

Frequency of overt and relational aggression over the past 30 days reported on the Peer Experiences Questionnaire, by gender, 2005

Questions about how often a student bullied or picked on another student	Girls (*n* 5,586)		Boys (*n* 5,469)	
	One or more times a month[a]	One or more times a week[b]	One or more times a month[a]	One or more times a week[b]
Overt aggression				
Teased a kid in a mean way	37.2	2.2	44.4	4.5
Hit, kicked, or pushed a kid	14.3	1.1	27.4	2.9
Threatened to hurt or beat up a kid	10.1	0.6	19.2	2.0
Played a mean trick to scare or hurt another kid	12.2	0.6	19.8	2.0
"Ganged up" with some kids to be mean to another kid	8.8	0.7	13.3	1.9
Grabbed, held, or touched a kid in a way he or she didn't like	3.4	0.4	7.4	1.0
Chased a kid to try to hurt him or her	5.9	0.6	13.4	1.7
Relational aggression				
Told lies about a kid so other kids wouldn't like him or her	20.9	0.9	20.3	1.8
Ignored a kid on purpose to hurt his or her feelings	27.9	1.0	24.2	2.0
Helped leave a kid out of things just to be mean to him or her	20.7	0.8	20.5	1.4

Note: Students were asked to indicate how frequently they perpetrated each type of overt or relational victimization during the past 30 days, using a five-point response scale: 1 = never, 2 = once or twice, 3 = a few times, 4 = about once a week, 5 = a few times a week.

a. Cumulative percentage of boys or girls who recorded 2–5 for the scale item.

b. Cumulative percentage of boys or girls who recorded 4 or 5 for the scale item.

Source: Authors' analysis using data from University of Oregon (2005b).

scores is associated with characteristics of the schools the students attend, and 93.2–99.3 percent is associated with individual student-level differences unrelated to the school they attend.

Variance associated with gender and grade level

This section reports the gender and grade-level differences associated with each survey scale. The results of the two-level hierarchical linear model analyses are reported in tables D2–D8 in appendix D (all analyses used the .05 level of statistical significance).

Normative Beliefs about Aggression Survey results. Gender and grade were associated with differences in the approval of retaliation scale on the Normative Beliefs about Aggression Survey (see table D2 in appendix D). Boys indicated higher approval rates for retaliating aggressively to provocation than did girls. Grade 5 students reported significantly higher approval of retaliation than did grade 3 students. The differences between girls and boys did not vary by grade level.

Gender was also associated with differences in approval of aggression in general situations, though grade was not. In grades 3–5, boys reported higher approval for acting aggressively in general social situations than did girls (see table D3 in appendix D). No significant associations with grade level were found for this scale. Nor did the differences between girls and boys vary significantly by grade level.

Peer Experiences Questionnaire results. On the beliefs about aggression scale of the Peer Experiences Questionnaire, students' beliefs did not differ by gender (see table D4). Students in grades 7 and 8 reported higher agreement with beliefs that "aggression is OK," "aggression pays off," or "fighting is OK" than did students in grade 3. A gender by

grade level difference was associated with beliefs about aggression, with a smaller difference between girls and boys in approval of aggression for grade 3 than for grades 5–8.

For students in grades 3–8, boys reported more frequent overt victimization than did girls (see table D5). Differences in reported overt victimization were also associated with grade level, with students reporting higher levels of victimization in grade 3 than in other grades. Gender differences in reported overt victimization did not vary by grade level.

No significant differences were found in the relational victimization reported by girls and boys in the entire sample (see table D6); however, the difference in the level of relational victimization reported by girls compared with boys within each grade did vary by grade level. The differences in relational victimization between girls and boys in grade 5–8 were larger than the difference between girls and boys in grade 3. The differences in relational victimization between girls and boys in grades 3 and 4 were similar.

Boys reported engaging in more overt aggression toward other students than did girls (see table D7). Students in grades 7 and 8 reported significantly higher levels of overt aggression than did students in grade 3. However, the difference between girls and boys did not vary significantly by grade level.

Differences in relational aggression were associated with gender and grade level (see table D8). As with overt aggression, boys reported engaging in more relational aggression than did girls. Students in grades 5–8 reported perpetrating more relational aggression than did students in grade 3. Differences between girls and boys also varied by grade level, with greater differences in grade 3 than in grade 8.

STUDY LIMITATIONS

Several factors limit the generalizability of the study findings. Data were collected from a voluntary sample of schools in particular districts in a two-county area of Oregon, and participating schools had indicated a prior interest in addressing bullying and aggressive student behavior. The sample schools differed from all schools in the two-county area in the average percentage of students receiving free or reduced-price lunch, of English language learner students, and of racial/ethnic minority students. The findings cannot be generalized to schools outside the sample or to schools that do not indicate the same level of interest in reducing aggression among students.

The data analyzed for this study were collected during fall 2005. Whether results can be generalized to the types of aggression and bullying occurring in schools today is unknown. For example, one important limitation to these data is the absence of information about cyber bullying—a type of aggression that occurs through personal computers or cell phones—that has gained national attention in recent years (Wang, Iannotti, and Nansel 2009).

Because this study was a secondary analysis of existing databases, analysis was confined to the data available. Thus, there was no opportunity to explore student-level factors other than grade and gender that might be associated with student-reported aggression, victimization, and beliefs about aggression.

All data collected for the study are based on student self-report measures. While a useful tool for collecting data on student aggression and bullying, behaviors that often occur in unsupervised places in the school, self-report measures reflect a student's perceptions and are not validated by other means, such as direct observation, school discipline referrals, or teacher surveys. In addition, the self-report measures used in

The findings of this study cannot be generalized to schools outside the sample or to schools that do not indicate the same level of interest in reducing aggression among students

this study address two of the three components that generally define bullying—intentional and repeated acts over time—but not the imbalance in power between bully and victim. Although the power imbalance is an important feature of bullying, it is difficult to reliably address in self-report measures with youth (Nansel and Overpeck 2003).

Finally, the data were cross-sectional—collected at one point in time from students at different grade levels—so the findings do not directly measure developmental changes as students grow older. The differences in aggression, victimization, or beliefs about aggression among students at different grade levels could be associated with factors other than development or maturation over time.

NOTE

1. The analysis of the prevalence of overt and relational forms of bullying was conducted for the 2001 School Crime Supplement of the National Crime Victimization Survey data only; this analysis was not conducted for survey data collected in later years (DeVoe and Bauer 2010; DeVoe et al. 2003; DeVoe et al. 2005; Dinkes, Cataldi and Kena 2006: Dinkes, Cataldi, and Lin-Kelly 2007; Dinkes, Kemp, and Baum 2009a,b).

APPENDIX A
STUDY SAMPLE AND METHODS

This secondary analysis of cross-sectional survey data collected in October 2005 from 11,561 students in one urban and nine rural districts in two counties in Oregon used data originally collected as part of an external evaluation of the federally funded Mid-Valley Partnership Safe Schools/Healthy Students local initiative. A collaborative program supported by three federal agencies (the U.S. Departments of Education, Health and Human Services, and Justice), it funds local school and community projects to reduce aggression and drug use in schools. The projects are expected to develop and implement a coordinated framework of violence prevention activities that includes both schoolwide prevention activities and individualized interventions for students with emotional or behavioral difficulties.

The Mid-Valley Partnership's Safe Schools/Healthy Students initiative was a collaboration of schools and 10 mental health, law enforcement, juvenile justice, family court, education, and early childhood agencies committed to reducing aggression in the two-county area. A goal was to implement schoolwide and individual student interventions that would comply with Oregon and federal antibullying legislation. In 2001, Oregon enacted legislation requiring all schools to have antibullying policies and clear procedures for preventing and responding to bullying incidents. All schools in the sample had introduced interventions for bullying, harassment, and threatening behaviors that were implemented with varying fidelity. Project stakeholders used the data collected on the student survey for assessing needs and planning and monitoring schoolwide antibullying interventions at the school and project levels.

All school participants in the two-county area received additional staff resources to conduct one to two skill-building groups for six to eight students considered at risk for school failure due to behavioral difficulties. In addition, all participating schools implemented a multiagency protocol for responding to serious incidents of aggression in school, such as physical aggression, weapons violations, bomb threats or other threats of harm, and chronic bullying. Grant resources provided cross-agency training and consultation for mental health, law enforcement, and school personnel to strengthen implementation of the threat assessment protocol (Nishioka et al. 2006).

On a voluntary basis, the grant also provided training and curriculum resources to schools that expressed interest in implementing a violence prevention curriculum for the first time or increasing the quality of implementation across their teaching staff. The selected curricula were *Second Step: A Violence Prevention Curriculum* (Committee for Children 1992) for elementary grades and *Aggressors, Victims, and Bystanders: Thinking and Acting to Prevent Violence* (Slaby, Wilson-Brewer, and Dash 1994) for middle school grades. Both curricula are considered evidence-based and are intended to be taught schoolwide by classroom teachers throughout the school year (U.S. Department of Health and Human Services 2006; U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration 2009). Implementation of the curricula was voluntary. Schools were not required to participate in the data collection in order to receive curriculum resources.

Of the 109 public and charter schools in the two-county area that served students in grades 3–8, project administrators identified 69 schools in their plans to disseminate violence prevention curricula. The 69 schools had indicated an interest in implementing the curricula during the coming year. The reasons for not including the other 40 schools varied: lack of interest, the school was implementing a different violence prevention curriculum not offered by the project, or the school was already implementing the curriculum and no grant resources were needed for additional professional development.

Settings and participants

The Mid-Valley Partnership coordinator recruited 38 of the 69 urban and rural schools to administer student surveys schoolwide to collect needs assessment information for the grant evaluations and for use by individual schools. Of these 38 schools, 15 were elementary schools serving grades K–5, 8 were K–8 or K–12 schools, and 15 were middle schools serving grades 6–8. Enrollment and demographic information for the sample schools and for all public schools in the two-county area is reported in table 1 in the main report. The study sample included 54 percent of all students in grades K–8 in the two-country area—30 percent of public school students in grades 3–5 and 77.5 percent of students in grades 6–8. The percentages of students receiving free or reduced-priced lunch, eligible for English as a second language services, and self-reported as a member of a racial/ethnic minority were higher for the study sample than for comparable-size schools for the combined K–8 and K–12 schools and lower for middle schools serving grades 6–8.

At the time of survey administration, no schools were fully implementing the violence prevention curriculum as recommended by the developers. Nine schools were teaching the violence prevention curriculum to grades 3–5 with varying levels of fidelity, and 13 schools were planning to receive training during the coming school year. Of the 22 schools serving grades 6–8, 4 were teaching the selected curriculum schoolwide, and 18 were in the training or planning stage.

Student demographic information

The data for this secondary analysis were collected from 11,561 students in grades 3–8. Of these students, 2,736 were in grades 3–5, and 8,646 were in grades 6–8. Spanish language-versions of the surveys were returned by 433 students (3.8 percent of the sample): 312 for students in grades 3–5, and 121 for middle school students. Gender or grade-level information was missing for 552 records (4.8 percent; see note to table A1). At all grade levels, about half the participants were girls and half were boys (table A1).

Of the 11,561 students, 978 (8.5 percent) of the Peer Experiences Questionnaire records were missing race/ethnicity information. Of the remaining 10,583 records, 52.3 percent of the students identified themselves as White/Caucasian, 24.9 percent as Hispanic/Latino, and 10.1 percent as multiracial. These racial/ethnicity data

TABLE A1

Percentage of students in grades 3–8 who completed the Peer Experiences Questionnaire, by grade, gender, and ethnicity, 2005

Student characteristic	Grade						
	3	4	5	6	7	8	Sample
Gender	(*n* = 772)	(*n* = 935)	(*n* = 990)	(*n* = 2,844)	(*n* = 2,643)	(*n* = 2,825)	(*n* = 11,009)
Girls	50.1	49.2	50.7	50.1	52.1	50.3	50.6
Boys	49.9	50.8	49.3	49.9	47.9	49.7	49.4
Race/ethnicity	(*n* = 645)	(*n* = 842)	(*n* = 920)	(*n* = 2,721)	(*n* = 2,629)	(*n* = 2,826)	(*n* = 10,583)
Asian/Pacific Islander	2.2	0.6	1.0	2.2	2.8	2.5	2.2
American Indian	4.7	3.6	3.3	2.7	2.9	2.0	2.8
Black/African American	4.5	2.5	2.3	1.9	1.6	1.9	2.1
Hispanic/Latino	34.3	28.9	31.7	22.6	24.2	22.3	24.9
White/Caucasian	40.8	45.6	41.8	52.6	53.4	59.0	52.3
Other/multiracial	13.5	18.8	19.9	18.0	15.1	12.3	15.7

Note: Of the 11,561 returned surveys, 552 were missing gender or grade information, and 978 were missing grade or race/ethnicity information.

Source: Authors' analysis using data from University of Oregon (2005b).

are difficult to compare with state and county data because of differences in response categories.

Data sources

The data for this secondary analysis were collected by classroom teachers or by the Mid-Valley prevention coordinator in homeroom or block classes using procedures approved by the University of Oregon Protection of Human Subjects Institutional Review Board. Each classroom teacher received a survey administration packet with instructions to read to students, blank surveys, and return envelopes in which students were to place their completed surveys. To protect student anonymity, each survey was precoded with a unique identification number that identified the district, school, and classroom that administered the survey but not the student or teacher.

During the last two weeks of October 2005, the Normative Beliefs about Aggression Survey was administered to students in grades 3–5 and the Peer Experiences Questionnaire to students in grades 3–8. Students received reading assistance as needed. Spanish-language version surveys were completed by 3.8 percent of the students.

Middle school administrators chose to administer only the Peer Experiences Questionnaire because of concerns about interfering with academic classes. The Peer Experiences Questionnaire was selected over the Normative Beliefs about Aggression Survey because it provided information about victimization and aggression as well as students' beliefs about aggression.

Although the Normative Beliefs about Aggression Survey and the Peer Experiences Questionnaire both measure students' beliefs about aggression, the two surveys measure different constructs regarding beliefs about aggression. The Normative Beliefs about Aggression Survey measures students' acceptance of using aggression in different types of social situations (without provocation, with mild provocation, and with strong provocation). It also examines differences in beliefs that may be related to the gender of the perpetrator or victim. The Peer Experiences Questionnaire measures more generalized beliefs about aggression, such as the extent to which a student agrees that the use of aggression is "OK," that aggression "pays off," or that aggression helps the student get what he or she wants and the extent to which a student endorses staying out of bullying or joining in.

Normative Beliefs about Aggression Survey. The Normative Beliefs about Aggression Survey is a 20-item scale that measures students' acceptance of acting aggressively during conditions of provocation or general conditions and their overall approval of aggressive behavior (Huesmann et al. 1992). The instrument also collects information on approval of retaliation against girls and against boys. Students were asked to use a four-point scale to indicate what they thought about various statements about aggression: 1 = really wrong, 2 = sort of wrong, 3 = sort of OK, or 4 = perfectly OK. The scales are described in table A2, and the survey items and responses are in tables B1 and B2 in appendix B.

Survey response rate. The survey response rate was calculated by dividing the number of surveys schools returned by the school's student enrollment on October 1, 2005, as reported to the state education agency (Oregon Department of Education 2005). Of the 3,742 students enrolled in the 21 schools that administered the Normative Beliefs about Aggression Survey, 3,109 (83 percent)

TABLE A2
Normative Beliefs about Aggression Survey scales

Scales	Description
Approval of retaliation (items 1–12)	A student's beliefs about how wrong or OK it is to act aggressively in social situations with weak or strong provocation.
General approval of aggression (items 13–20)	A student's beliefs about how wrong or OK it is to act aggressively in general social situations without provocation.

Sources: Huesmann et al. 1992; Huesmann and Guerra 1997; Vernberg, Jacobs, and Twemlow 1999.

returned surveys. The reasons for missing surveys included student absences, student refusal to complete the survey, and teacher decisions not to administer the survey.

Reliability. Cronbach's alpha coefficients were calculated to assess the internal consistency of the Normative Beliefs about Aggression Survey (table A3). Coefficients ranged from .77 to .89 for the whole sample and .70 to .89 for students who completed the Spanish-language version. These reliability estimates are consistent with previous studies that found an internal consistency of .90 for the total scales and internal consistency coefficients that ranged from .65 to .85 for individual scales. The scale has been used in several published studies on aggression in children (Guerra, Huesmann, and Hanish 1995; Guerra et al. 1995; Henry et al. 2000; Huesmann and Guerra 1997).

Peer Experiences Questionnaire—elementary and secondary school versions. The Peer Experiences Questionnaire was used to gather information about self-reported victimization, aggression, and attitudes about aggression (Vernberg 1990; Vernberg, Jacobs, and Hershberger 1999). The elementary school version, developed in 2004, contains the same organization, content, and items as the secondary school version but is written at or below a third-grade reading level. This study analyzed three of the four Peer Experiences Questionnaire scales: Part 1 Victimization, Part 2 Aggression, and Part 4 Beliefs about aggression. Part 3 What happens when a student gets bullied or picked on was not included as the items did not align across elementary and secondary school versions. The three scales used in the study are described below and in table A4.

Part 1 Victimization—What happened to me. This 10-item scale asks student to report how often they were victimized by 10 types of aggressive behavior during the past 30 days, using a five-point response scale: 1 = never, 2 = once or twice, 3 = a few times, 4 = about once a week, 5 = a few times a week. Overt victimization refers to being threatened, teased in a mean way, or subjected to physical aggression such as hitting, shoving, kicking, and punching. Relational victimization refers to being deliberately excluded from a group or activity, being the object of rumors or lies told so that others will not like you, or having someone make fun of you in front of others (Bentley and Li 1996; Bradshaw, Sawyer, and O'Brennan 2007; DeVoe and Kaffenberger 2005; Silvia et al. 2010; Vernberg, Jacobs, and Hershberger 1999).

Part 2 Aggression—What I did. This 10-item scale asks the student how frequently he or she engaged in the same 10 overt or relational aggressive behaviors as in the victimization scale during the past 30 days, using the same five-point scale (Atlas and Pepler 1998; Crick 1996, 1997; Crick, Ostrov, and Werner 2006; Kim et al. 2010; Kuppens et al.

TABLE A3
Cronbach's alpha coefficients for Normative Beliefs about Aggression Survey, by grade level, 2005

	Grade					
Survey scale	3	4	5	6	7	8
English language version (*n* = 3,109)						
Approval of retaliation	.83	.86	.89	na	na	na
General approval of aggression	.77	.82	.85	na	na	na
Spanish language version (*n* = 433)						
Approval of retaliation	.79	.89	.86	na	na	na
General approval of aggression	.75	.70	.83	na	na	na

na is not applicable because the survey was not administered to students in these grades.

Source: Authors' analysis using data from University of Oregon (2005a).

TABLE A4
Peer Experiences Questionnaire scales

Construct	Description
Part 1 Victimization—What happened to me	
Overt victimization (items 1, 2, 5, 6, 8, 9, 10)	A student's self-report about the frequency with which he or she experienced overt victimization (for example, experiencing mean teasing; experiencing verbal threats of being hurt or beaten; being hit, kicked, or pushed in a mean way; being grabbed, held, or touched in a way the student didn't like; being chased with intent to harm; being the object of a mean trick meant to scare or harm; and being ganging up on)
Relational victimization (items 3, 4, 7)	A student's self-report about the frequency with which he or she experienced relational victimization (for example, being ignored on purpose to hurt the student's feelings, being the object of put-downs or rumors, or being intentionally left out)
Part 2 Aggression—What I did	
Overt aggression (items 2, 5, 6, 8, 9, 10)	A student's self-report about the frequency with which he or she was overtly aggressive (for example, teased someone in a mean way; called someone bad names or said rude things about someone; threatened to hurt or beat someone; hit, kicked, or pushed someone in a mean way; grabbed, held, or touched someone in a way the person didn't like; played a mean trick to scare or hurt someone; chased someone with intent to harm; or ganged up on someone)
Relational aggression (items 3, 4, 7)	A student's self-report about the frequency with which he or she was relationally aggressive (for example, ignored the student to hurt the student's feelings; told put-downs or rumors about the student; or left the student out intentionally)
Part 4: Beliefs about aggression—What I think	
Beliefs about aggression (items 1–17)	A student's self-report about the extent to which he or she agrees that aggression is OK, aggression pays off, and fighting is OK

Source: Vernberg, Jacobs, and Twemlow 1999.

2008; Marini et al. 2006; Rose and Rudolph 2006; Silvia et al. 2010; Vernberg, Jacobs, and Twemlow 1999).

Part 4 Beliefs about aggression—What I think. This scale consists of 17 items that measure a student's attitudes about aggression. Students are asked to indicate their level of agreement with each item, using a four-point scale: 1 = I don't agree at all, 2 = I agree a little, 3 = I agree a lot, 4 = I completely agree. The items for this scale fall into three general constructs: aggression is OK, aggression pays off, and students should stay out of fights.

Response rate. The survey response rate was calculated by dividing the number of surveys schools returned by the school's student enrollment on October 1, 2005, as reported to the state education agency (Oregon Department of Education 2005). Of the 13,616 students enrolled in the 37 schools that administered the Peer Experiences Questionnaire, 11,561 (84.9 percent) students returned surveys—81.6 percent from grades 3–5 and 85.8 percent from grades 6–8.

Reliability. The internal consistency coefficients for the scale scores on the Peer Experiences Questionnaire were .72–.89 for elementary school students and .81–.89 for middle school students (table A5). In previous studies, the internal consistency coefficients were .80–.88 (Prinstein, Boergers, and Vernberg 2001).

Database organization

Results from the Peer Experiences Questionnaire and Normative Beliefs about Aggression Survey were received in separate data files. The datasets were stripped of student, teacher, and school identifiers, and each student record or survey

TABLE A5
Cronbach's alpha coefficients for Peer Experiences Questionnaire, by grade level, 2005

	Grade					
Survey scale	3	4	5	6	7	8
English language version (*n* = 11,245)						
Victimization—What happened to me	.89	.89	.87	.86	.87	.87
Aggression—What I did	.88	.88	.82	.86	.89	.89
Beliefs about aggression—What I think	.74	.72	.77	.81	.86	.87
Spanish language version (*n* = 433)						
Victimization—What happened to me	.89	.85	.86	.80	.77	.93
Aggression—What I did	.88	.89	.83	.70	.82	.82
Beliefs about aggression—What I think	.84	.77	.80	.80	.83	.59

Source: Authors' analysis using data from University of Oregon (2005b).

was assigned a unique school and student identification code to allow hierarchical linear model analyses. Each student in grades 3–5 was assigned the same identification code numbers for the Peer Experiences Questionnaire and Normative Beliefs about Aggression Survey so that these measures could be linked at the school and individual student level.

Data analyses

The Peer Experiences Questionnaire and Normative Beliefs about Aggression Survey scale scores were used as outcome variables. Each scale score was a simple mean of the relevant items outlined in table A4, with no weighting of items. The procedures for handling missing data and the data analyses procedures completed for each research question are described more fully in the following paragraphs.

Missing data: multiple imputation procedures. Because more than 5 percent of the total records were missing for the Peer Experiences Questionnaire and Normative Beliefs about Aggression Survey scales, multiple imputation procedures were used to impute missing item responses for each survey item, gender, and grade level.

For the Normative Beliefs about Aggression Survey data, 76.2 percent of the returned surveys had no missing data, 20.1 percent were missing one response, and 2.6 were missing two responses (0.1–1.8 percent missing for items 1–19, and 14.7 percent for item 20). Missing observations for other variables totaled 2.3 percent for gender and 6.9 percent for grade level. For the Peer Experiences Questionnaire data, 92.9 percent of the 11,561 returned surveys had no missing data (0.2–2.0 percent missing for each survey item). Missing observations for the other variables totaled 4.4 percent for gender and 1.5 percent for grade level.

For both surveys, Stata's MI IMPUTE procedure was used to impute the missing item responses, and the nonmissing design variables *School ID* and *Classroom ID* were included as input variables. For the Peer Experiences Questionnaire, grade, gender, and student responses were used as the input variables to each survey item in parts 1, 2, and 4. For the Normative Beliefs about Aggression Survey, an auxiliary variable for use of the Spanish language version was also included; for the Peer Experiences Questionnaire, auxiliary variables were use of the Spanish language version and student responses to items in part 3. Because multiple variables had missing data, and no sequential pattern of missing data was observed, the data were assumed to be missing at random and the imputation was done with the assumption of multivariate normality. Multiple imputation has greater statistical validity than single imputation or other methods (Rubin

1987, 1996). For each survey data set, five imputations were completed to create a set of five data files. The five sets of parameter estimates that resulted were pooled according to Rubin's rules for scale estimands (Rubin 1987).

Research question 1: How prevalent are student-reported victimization, aggression, and agreement with beliefs that approve of aggression among students in grades 3–8? Table A6 lists the scale scores that were used as the outcome variables for both surveys.

For the descriptive analyses for both surveys, coefficients and standard errors were calculated for each outcome scale, along with percentages of students by responses to each survey item (see appendixes B and C). Three items on the Peer Experiences Questionnaire were reverse-coded prior to conducting the descriptive analyses because the statements do not support the responses aggression is OK, aggression pays off, or fighting is OK, as the other items do. These summary statistics were also used to check the distribution of the sample data in preparation for the hierarchical linear model analyses.

TABLE A6

Scale scores used as outcome variables for Normative Beliefs about Aggression Survey and Peer Experiences Questionnaire, 2005

Scale	Student survey
Retaliation beliefs scale	Normative Beliefs about Aggression
General beliefs scale	Normative Beliefs about Aggression
Overt victimization	Peer Experiences Questionnaire, Part 1 What happened to me
Relational victimization	Peer Experiences Questionnaire, Part 1 What happened to me
Overt aggression	Peer Experiences Questionnaire, Part 2 What I did
Relational aggression	Peer Experiences Questionnaire, Part 2 What I did
Beliefs about aggression	Peer Experiences Questionnaire, Part 4 What I think

Source: Authors' analysis using data from University of Oregon, College of Education 2005a,b.

Research question 2: How much of the variation in student-reported victimization, aggression, and beliefs about aggression is associated with school characteristics and how much with student characteristics? The question was addressed by calculating intraclass correlation coefficients separately for the results of both surveys.

The following model was used with each Normative Beliefs about Aggression Survey outcome to partition variation into "between schools" and "within students" components:

$$y_{ij} = \beta_{00} + u_{0j} + r_{ij}$$

This is an unconditional model in which the random effect of schools is represented by u, and the student residual r includes variance due to age (grade level).

The Peer Experiences Questionnaire analyses were conducted on pooled elementary and middle school results.

The following model was used for calculating the unconditional school-level intraclass correlation:

$$y_{ij} = \beta_{00} + u_{0j} + r_{ij}$$

The student residual r contains variance due to age (grade level), and the school random effect u contains variance due to the type of school (elementary or middle).

The following model was used for calculating the intraclass correlation conditional to grade level.

$$y_{ij} = \beta_{00} + \beta_{10}\text{Gr. } 4_{ij} + \beta_{20}\text{Gr. } 5_{ij} + \beta_{30}\text{Gr. } 6_{ij} + \beta 40\text{Gr. } 7_{ij} + \beta_{50}\text{Gr. } 8_{ij} + u_{0j} + r_{ij}$$

Since the focus of the analysis was to arrive at the student residual r and the school random effect u, which are conditional to grade level, grade level was dummy variable–coded with grade 3 students as the referent category. An age function was not included because of the concern that doing so could artificially inflate the variance and

produce variance components that are difficult to interpret.

Research question 3: How do student-reported victimization, aggression, and beliefs about aggression differ by gender and grade level for students in grades 3–8? The elementary and middle school results for the Peer Experiences Questionnaire analyses were combined for two reasons. First, the two-level model at the elementary school level, with classroom as the second level, confounds school and classroom for the large proportion of schools that had only one classroom per grade. Second, formulating an effect at the classroom level does not make sense for middle schools, whose students have multiple classrooms and peers throughout the day. Thus, two-level student-nested-within-school hierarchical linear models were used to address this research question.

$$y_{ij} = \beta_{00} + \beta_{10}Gender + \beta_{.0}Grade + \beta_{.0}Gender \times Grade + u_{ij} + r_{ij}.$$

APPENDIX B
ITEM RESPONSES FOR THE TOTAL SAMPLE AND BY GENDER FOR THE NORMATIVE BELIEFS ABOUT AGGRESSION SURVEY

This appendix details the response to each scale item on the Normative Beliefs about Aggression Survey for the sample as a whole (table B1) and by gender (table B2).

TABLE B1

Percentage of students in grades 3–5 by their approval of retaliation and their approval of aggression in general situations, as reported on the Normative Beliefs about Aggression Survey, 2005

Question or belief	Really wrong	Sort of wrong	Sort of OK	Perfectly OK
Approval of retaliation				
Suppose a boy says something bad to another boy, John.				
Do you think it's OK for John to scream at him?	67.9	25.7	4.9	1.5
Do you think it's OK for John to hit him?	90.3	7.2	1.6	0.9
Suppose a boy says something bad to a girl.				
Do you think it's wrong for the girl to scream at him?	57.2	26.5	10.9	5.4
Do you think it's wrong for the girl to hit him?	80.5	10.8	4.2	4.4
Suppose a girl says something bad to another girl, Mary.				
Do you think it's OK for Mary to scream at her?	63.5	26.6	7.5	2.3
Do you think it's OK for Mary to hit her?	86.0	10.3	2.2	1.5
Suppose a girl says something bad to a boy.				
Do you think it's wrong for the boy to scream at her?	68.5	23.8	5.0	2.7
Do you think it's wrong for the boy to hit her?	91.2	5.9	1.2	1.6
Suppose a boy hits another boy, John.				
Do you think it's wrong for John to hit him back?	71.0	17.9	6.9	4.2
Suppose a boy hits a girl.				
Do you think it's OK for the girl to hit him back?	70.0	15.6	8.3	6.1
Suppose a girl hits another girl, Mary.				
Do you think it's wrong for Mary to hit her back?	72.3	17.8	6.0	3.9
Suppose a girl hits a boy.				
Do you think it's OK for the boy to hit her back?	83.7	10.4	3.4	2.5
Approval of aggression in general situations				
In general, it is wrong to hit other people.	82.3	11.5	3.3	2.8
If you're angry, it is OK to say mean things to other people.	80.8	14.2	3.4	1.6
In general, it is OK to yell at others and say bad things.	86.4	10.2	2.2	1.2
It is usually OK to push or shove other people around if you're mad.	83.8	12.9	2.1	1.2
It is wrong to insult other people.	83.2	11.8	2.1	2.9
It is wrong to take it out on others by saying mean things when you're mad.	84.1	11.7	2.1	2.1
It is generally wrong to get into physical fights with others.	85.8	9.2	2.7	2.3
In general, it is OK to take your anger out on others by using physical force.	84.8	10.4	2.1	2.7

Note: $n = 3{,}109$.

Source: Authors' analysis using data from University of Oregon (2005a).

TABLE B2

Percentage of girls and boys in grades 3–5 by their approval of retaliation and their approval of aggression in general situations, as reported on the Normative Beliefs about Aggression Survey, 2005

	Girls (*n* 1,494)				Boys (*n* 1,465)			
Question or belief	Really wrong	Sort of wrong	Sort of OK	Perfectly OK	Really wrong	Sort of wrong	Sort of OK	Perfectly OK
Approval of retaliation								
Suppose a boy says something bad to another boy, John.								
Do you think it's OK for John to scream at him?	73.5	21.9	3.4	1.2	62.3	29.5	6.3	1.9
Do you think it's OK for John to hit him?	92.8	5.9	0.7	0.6	87.8	8.5	2.5	1.2
Suppose a boy says something bad to a girl.								
Do you think it's wrong for the girl to scream at him?	63.3	24.3	8.5	3.9	51.2	28.6	13.4	6.8
Do you think it's wrong for the girl to hit him?	84.5	9.2	2.8	3.5	76.7	12.5	5.5	5.3
Suppose a girl says something bad to another girl, Mary.								
Do you think it's OK for Mary to scream at her?	69.1	23.8	5.7	1.4	58.1	29.4	9.3	3.2
Do you think it's OK for Mary to hit her?	89.2	8.3	1.3	1.2	82.8	12.2	3.1	1.9
Suppose a girl says something bad to a boy.								
Do you think it's wrong for the boy to scream at her?	72.5	21.7	3.8	2.0	64.5	25.7	6.1	3.7
Do you think it's wrong for the boy to hit her?	93.1	4.8	0.7	1.4	89.4	7.0	1.7	1.9
Suppose a boy hits another boy, John.								
Do you think it's wrong for John to hit him back?	77.3	15.8	4.4	2.5	64.8	19.9	9.4	5.9
Suppose a boy hits a girl.								
Do you think it's OK for the girl to hit him back?	74.5	14.5	6.5	4.5	65.7	16.7	10.0	7.6
Suppose a girl hits another girl, Mary.								
Do you think it's wrong for Mary to hit her back?	77.7	15.8	3.9	2.6	67.0	19.8	8.1	5.1
Suppose a girl hits a boy.								
Do you think it's OK for the boy to hit her back?	86.5	9.1	2.4	2.0	81.0	11.7	4.3	3.0
Approval of aggression in general situations								
In general, it is wrong to hit other people.	86.3	9.2	2.1	2.4	78.4	13.7	4.5	3.4
If you're angry, it is OK to say mean things to other people.	83.8	12.1	2.9	1.2	77.9	16.3	3.8	2.0
In general, it is OK to yell at others and say bad things.	89.8	8.1	1.3	0.8	83.1	12.2	3.1	1.6
It is usually OK to push or shove other people around if you're mad.	88.6	9.2	1.1	1.1	79.0	16.6	3.1	1.3
It is wrong to insult other people.	86.9	9.3	1.4	2.4	79.6	14.2	2.8	3.4
It is wrong to take it out on others by saying mean things when you're mad.	87.3	9.5	1.5	1.7	81.0	13.9	2.7	2.4
It is generally wrong to get into physical fights with others.	89.5	7.5	1.3	1.7	82.2	10.9	4.1	2.8
In general, it is OK to take your anger out on others by using physical force.	87.5	8.7	1.4	2.4	82.0	12.1	2.9	3.0

Source: Authors' analysis using data from University of Oregon (2005a).

APPENDIX C
ITEM RESPONSES FOR THE TOTAL SAMPLE AND BY GENDER FOR THE PEER EXPERIENCES QUESTIONNAIRE

This appendix details the response to each scale item on the Peer Experiences Questionnaire for the sample as a whole (tables C1 and C3) and by gender (tables C2 and C4).

TABLE C1

Percentage of students in grades 3–8 who reported victimization and aggression in the past 30 days on the Peer Experiences Questionnaire, by frequency and type of behavior, 2005

Question	Never	Once or twice	A few times	Once a week	A few times a week
Part 1 Victimization—What happened to me					
A kid teased me in a mean way.	39.5	32.6	16.0	3.3	8.6
A kid said he or she was going to hurt me or beat me up.	72.5	18.2	6.0	1.2	2.1
A kid ignored me on purpose to hurt my feelings.	61.7	24.3	9.4	1.9	2.7
A kid told lies about me so other kids wouldn't like me.	55.1	27.0	11.7	2.7	3.5
A kid hit, kicked, or pushed me in a mean way.	64.3	22.4	8.3	2.0	3.0
A kid grabbed, held, or touched me in a way I didn't like.	82.6	11.5	3.6	0.9	1.4
Some kids left me out of things just to be mean to me.	62.9	24.7	7.9	1.7	2.8
A kid chased me like he or she was really trying to hurt me.	83.2	10.9	3.4	0.9	1.6
A kid played a mean trick to scare or hurt me.	79.9	14.0	4.0	0.8	1.3
Some kids "ganged up" against me and were mean to me.	81.1	11.5	4.1	1.3	2.0
Part 2 Aggression—What I did					
I teased or made fun of a kid in a mean way.	59.2	29.6	7.8	1.2	2.2
I threatened to hurt or beat up a kid.	85.4	10.6	2.7	0.6	0.7
I ignored a kid just to hurt him or her.	73.9	20.6	4.0	0.6	0.9
I told lies about another kid so other kids would not like him or her.	79.3	15.9	3.4	0.6	0.8
I hit, kicked, or pushed a kid in a mean way.	79.2	14.9	3.9	0.8	1.2
I grabbed, held, or touched a kid in a way he or she didn't like.	94.7	3.9	0.8	0.3	0.3
I helped leave a kid out of things just to be mean to him or her.	79.3	16.8	2.8	0.4	0.7
I chased a kid to try to hurt him or her.	90.4	6.8	1.7	0.5	0.6
I played a mean trick to scare or hurt another kid.	84.0	12.3	2.4	0.5	0.8
Some kids and I "ganged up" and we were mean to another kid.	88.9	7.8	1.9	0.5	0.9

Note: n = 11,561 students.

Source: Authors' analysis using data from University of Oregon (2005b).

TABLE C2

Percentage of students in grades 3–8 by their level of agreement that aggression is OK, aggression pays off, and fighting is OK, as reported on the Peer Experiences Questionnaire, 2005

Belief	I don t agree at all	I agree a little	I agree a lot	I completely agree
Part 4 Beliefs about Aggression—What I think				
It's OK for kids to fight each other.	73.4	19.6	2.8	4.1
It's wrong to make fun of another kid.[a]	14.2	3.1	13.3	69.4
Kids should be ready to fight anyone who picks on them.	56.4	27.9	6.8	8.9
When two kids are fighting each other, other kids should stop them.[a]	39.2	20.1	23.0	17.7
Kids sometimes deserve to get pushed around by other kids.	62.3	25.9	5.2	6.6
When two kids are fighting, other kids should stay out of it.	31.2	32.3	12.6	23.9
Bullies get what they want from other kids.	55.8	26.6	9.3	8.3
Kids get respect when they boss other kids.	69.3	18.9	6.1	5.7
When two kids are fighting each other, it's OK to cheer for them.	81.1	12.2	2.6	4.1
Kids can get what they want by fighting.	73.4	18.1	4.1	4.4
It makes a kid feel big/tough to be a bully.	46.9	21.9	14.0	17.2
It's OK to be a bully sometimes.	80.8	14.1	2.0	3.1
Kids can make other students do what they want by yelling at them.	66.8	23.5	5.5	4.2
A kid who gets picked on must have done something wrong.	48.9	34.6	8.1	8.4
When a kid is getting picked on, other kids should try to stop it.[a]	39.1	19.2	23.5	18.2
When two kids are fighting, it's all right to stand there and watch.	71.2	18.6	4.2	6.0
It is wrong to try to stop a fight between two other kids.	61.1	20.4	6.3	12.2

a. Statement does not support aggression is OK, aggression pays off, or fighting is OK.

Note: n = 11,561 students.

Source: Authors' analysis using data from University of Oregon (2005b).

TABLE C3

Percentage of girls and boys in grades 3–8 who reported victimization and aggression in the past 30 days on the Peer Experiences Questionnaire, by frequency and type of behavior, 2005

	Girls (*n* 5,840)					Boys (*n* 5,721)				
Question	Never	Once or twice	A few times	Once a week	A few times a week	Never	Once or twice	A few times	Once a week	A few times a week
Part 1 Victimization—What happened to me										
A kid teased me in a mean way.	38.7	34.2	17.1	3.0	7.0	40.3	30.9	15.0	3.6	10.2
A kid said he or she was going to hurt me or beat me up.	78.2	15.3	4.7	0.8	1.0	66.8	21.1	7.2	1.8	3.1
A kid ignored me on purpose to hurt my feelings.	54.2	29.2	11.8	2.0	2.8	69.4	19.4	6.9	1.8	2.5
A kid told lies about me so other kids wouldn't like me.	51.9	28.5	13.4	2.9	3.3	58.3	25.5	10.1	2.4	3.7
A kid hit, kicked, or pushed me in a mean way.	70.7	19.5	6.5	1.5	1.8	57.7	25.4	10.2	2.6	4.1
A kid grabbed, held, or touched me in a way I didn't like.	82.3	12.2	3.6	0.8	1.1	82.8	10.9	3.6	1.0	1.7
Some kids left me out of things just to be mean to me.	58.6	28.2	9.1	1.5	2.6	67.3	21.2	6.7	2.0	2.8
A kid chased me like he or she was really trying to hurt me.	88.1	8.0	2.4	0.6	0.9	78.2	13.8	4.4	1.4	2.2
A kid played a mean trick to scare or hurt me.	80.0	14.8	3.6	0.6	1.0	79.8	13.2	4.4	1.0	1.6
Some kids "ganged up" against me and were mean to me.	82.8	10.8	3.9	1.1	1.4	79.4	12.1	4.4	1.5	2.6
Part 2 Aggression—What I did										
I teased or made fun of a kid in a mean way.	62.8	27.9	7.1	0.9	1.3	55.6	31.3	8.6	1.5	3.0
I threatened to hurt or beat up a kid.	89.9	8.1	1.4	0.3	0.3	80.8	13.2	4.0	1.0	1.0
I ignored a kid just to hurt him or her.	72.1	23.0	3.9	0.5	0.5	75.8	18.2	4.0	0.7	1.3
I told lies about another kid so other kids would not like him or her.	79.1	16.6	3.4	0.4	0.5	79.7	15.1	3.4	0.8	1.0
I hit, kicked, or pushed a kid in a mean way.	85.7	10.8	2.4	0.4	0.7	72.6	19.1	5.4	1.2	1.7
I grabbed, held, or touched a kid in a way he or she didn't like.	96.6	2.6	0.4	0.2	0.2	92.6	5.2	1.2	0.4	0.6
I helped leave a kid out of things just to be mean to him or her.	79.3	17.4	2.5	0.4	0.4	79.5	16.1	3.0	0.4	1.0
I chased a kid to try to hurt him or her.	94.1	4.5	0.8	0.2	0.4	86.6	9.2	2.5	0.8	0.9
I played a mean trick to scare or hurt another kid.	87.8	10.2	1.4	0.2	0.4	80.2	14.4	3.4	0.8	1.2
Some kids and I "ganged up" and we were mean to another kid.	91.2	6.7	1.4	0.3	0.4	86.7	9.0	2.4	0.7	1.2

Note: n = 11,561 students.

Source: Authors' analysis using data from University of Oregon (2005b).

TABLE C4

Percentage of girls and boys in grades 3–8 by their level of agreement that aggression is OK, aggression pays off, and fighting is OK, as reported on the Peer Experiences Questionnaire, 2005

	Girls (*n* 5,840)				Boys (*n* 5,721)			
Belief	I don t agree at all	I agree a little	I agree a lot	I completely agree	I don t agree at all	I agree a little	I agree a lot	I completely agree
Part 4 Beliefs about Aggression—What I think								
It's OK for kids to fight each other	80.4	15.0	1.9	2.7	66.2	24.4	3.8	5.6
It's wrong to make fun of another kid[a]	14.6	2.5	9.9	73.0	13.9	3.6	16.8	65.8
Kids should be ready to fight anyone who picks on them	64.1	25.7	4.8	5.4	48.5	30.1	8.9	12.5
When two kids are fighting each other, other kids should stop them[a]	39.8	21.0	23.3	15.9	38.6	19.2	22.7	19.5
Kids sometimes deserve to get pushed around by other kids	69.3	22.7	3.8	4.2	55.1	29.1	6.7	9.1
When two kids are fighting, other kids should stay out of it	27.9	35.4	13.4	23.3	34.6	29.1	11.8	24.5
Bullies get what they want from other kids	54.6	28.5	9.2	7.7	57.1	24.7	9.4	8.8
Kids get respect when they boss other kids	72.7	17.2	5.2	4.9	65.7	20.5	6.9	6.9
When two kids are fighting each other, it's OK to cheer for them	86.6	9.1	1.6	2.7	75.5	15.3	3.6	5.6
Kids can get what they want by fighting	77.5	16.1	3.0	3.4	69.2	20.1	5.2	5.5
It makes a kid feel big/tough to be a bully	46.7	22.8	14.4	16.1	47.1	21.1	13.5	18.3
It's OK to be a bully sometimes	84.2	12.2	1.4	2.2	77.3	15.9	2.7	4.1
Kids can make other students do what they want by yelling at them	66.8	24.1	5.4	3.7	66.8	22.9	5.5	4.8
A kid who gets picked on must have done something wrong	52.6	35.3	6.0	6.1	45.2	33.9	10.4	10.5
When a kid is getting picked on, other kids should try to stop it[a]	39.3	20.4	24.0	16.3	39.0	17.9	23.1	20.0
When two kids are fighting, it's all right to stand there and watch	77.4	16.0	2.6	4.0	65.0	21.2	5.8	8.0
It is wrong to try to stop a fight between two other kids	62.4	21.7	5.9	10.0	59.9	19.1	6.6	14.4

a. Statement does not support aggression is OK, aggression pays off, or fighting is OK.

Note: $n = 11{,}561$.

Source: Authors' analysis using data from University of Oregon (2005b).

APPENDIX D
RESULTS OF HIERARCHICAL LINEAR MODELING OF GENDER AND GRADE-LEVEL DIFFERENCES ASSOCIATED WITH SURVEY SCALE TABLES

This appendix reports on the results of hierarchical linear model analyses conducted to determine the extent to which differences in student-reported aggression, victimization, and beliefs about aggression were associated with individual student or school characteristics

TABLE D1

Variance in Normative Beliefs about Aggression Survey and Peer Experiences Questionnaire scales associated with school and student-level factors, 2005

Survey and scale	Variance component		Standard error	Percent of variance associated with	
	School	Student		School	Student
Normative Beliefs about Aggression Survey (n = 3,109)					
Approval of retaliation	.004	.199	.017***	2.0	98.0
General approval	.001	.151	.010***	0.7	99.3
Total	.003	.148	.015***	2.1	97.9
Peer Experiences Questionnaire (n = 11,561)					
Overt victimization	.007	.359	.016***	1.9	98.1
Relational victimization	.016	.587	.023***	2.7	97.3
Overt aggression	.006	.190	.014***	3.1	96.9
Relational aggression	.008	.256	.016***	3.1	96.9
Beliefs about aggression	.014	.193	.020***	6.8	93.2

* $p > .05$; ** $p > .01$; *** $p > .001$.

Source: Authors' analysis using data from University of Oregon (2005a,b).

TABLE D2

Differences in student-reported approval of retaliation on the Normative Beliefs about Aggression Survey associated with gender and grade level, 2005

Parameter	Coefficient	Standard error	*t* statistic	95 percent confidence interval	
				Lower	Upper
Fixed effect					
Boy	.132	.031	4.18***	.069	.194
Grade 4	.048	.028	1.71	–.007	.104
Grade 5	.094	.028	3.33***	.039	.150
Gender by grade 4	–.013	.041	–0.32	–.094	.068
Gender by grade 5	.073	.041	1.80	–.097	.154
Constant[a]	1.239	.026			
	Coefficient	Standard error	Percent of variance	95 percent confidence interval	
				Lower	Upper
Random effect					
School level	.004	.002	2.2	.001	.012
Student level	.190	.005	97.8	.180	.200

* $p > .05$; ** $p > .01$; *** $p > .001$.

a. Girls in grade 3 is the referent category

Note: $n = 3{,}109$. Students were asked to indicate their level of agreement with the approval of retaliation scale items: 1 = really wrong, 2 = sort of wrong, 3 = sort of OK, 4 = perfectly OK.

Source: Authors' analysis using data from University of Oregon (2005a).

TABLE D3

Differences in student-reported approval of aggression in general situations on the Normative Beliefs about Aggression Survey associated with gender and grade level, 2005

Parameter	Coefficient	Standard error	*t* statistic	95 percent confidence interval	
				Lower	Upper
Fixed effect					
Boy	.090	.027	3.38***	.038	.143
Grade 4	–.010	.025	–0.42	–.059	.038
Grade 5	.015	.025	0.58	–.034	.064
Gender by grade 4	.000	.036	0.02	–.069	.071
Gender by grade 5	.043	.036	1.20	–.028	.113
Constant[a]	1.172	.020			
	Coefficient	Standard error	Percent of variance	95 percent confidence interval	
				Lower	Upper
Random effect					
School-level	.001	.001	0.8	.000	.007
Student-level	.148	.004	99.2	.141	.156

* $p > .05$; ** $p > .01$; *** $p > .001$.

a. Girls in grade 3 is the referent category

Note: $n = 3{,}109$. Students were asked to indicate their level of agreement with the approval of retaliation scale items: 1 = really wrong, 2 = sort of wrong, 3 = sort of OK, 4 = perfectly OK.

Source: Authors' analysis using data from University of Oregon (2005a).

TABLE D4

Differences in student-reported beliefs about aggression on the Peer Experiences Questionnaire associated with gender and grade level, 2005

Parameter	Coefficient	Standard error	*t* statistic	95 percent confidence interval	
				Lower	Upper
Fixed effect					
Boy	.012	.031	0.40	–.048	.073
Grade 4	–.049	.032	–1.54	–.112	.013
Grade 5	–.049	.030	–1.63	–.108	.010
Grade 6	–.019	.032	–0.59	–.081	.044
Grade 7	.080	.032	2.52*	.018	.143
Grade 8	.133	.032	4.18***	.071	.195
Gender by grade 4	.049	.044	1.13	–.037	.136
Gender by grade 5	.151	.042	3.60***	.068	.233
Gender by grade 6	.126	.035	3.65***	.058	.194
Gender by grade 7	.108	.035	3.11**	.040	.176
Gender by grade 8	.121	.035	3.46***	.053	.190
Constant[a]	1.666				

	Coefficient	Standard error	Percent of variance	95 percent confidence interval	
				Lower	Upper
Random effect					
School-level	.007	.002	3.7	.004	.013
Student-level	.186	.002	96.3	.181	.191

* $p > .05$; ** $p > .01$; *** $p > .001$.

a. Girls in grade 3 is the referent category.

Note: $n = 11{,}561$. Students were asked to indicate their level of agreement with the beliefs about aggression scale items: 1 = I don't agree at all, 2 = I agree a little, 3 = I agree a lot, 4 = I completely agree.

Source: Authors' analysis using data from University of Oregon (2005b).

TABLE D5

Differences in student-reported overt victimization on the Peer Experiences Questionnaire associated with gender and grade level, 2005

Parameter	Coefficient	Standard error	*t* statistic	95 percent confidence interval	
				Lower	Upper
Fixed effect					
Boy	.116	.043	2.70**	.032	.201
Grade 4	–.097	.041	–2.35*	–.178	–.016
Grade 5	–.147	.041	–3.60***	–.227	–.067
Grade 6	–.249	.040	–6.15***	–.328	–.169
Grade 7	–.216	.040	–5.34***	–.295	–.137
Grade 8	–.244	.040	–6.08***	–.323	–.166
Gender by grade 4	.052	.059	0.89	–.064	.169
Gender by grade 5	–.071	.058	–1.23	–.184	.042
Gender by grade 6	.019	.049	0.39	–.077	.116
Gender by grade 7	.032	.049	0.65	–.065	.129
Gender by grade 8	–.018	.048	–0.37	–.112	.077
Constant[a]	1.601	.034			

	Coefficient	Standard error	Percent of variance	95 percent confidence interval	
				Lower	Upper
Random effect					
School-level	.005	.002	1.5	.002	.011
Student-level	.352	.005	98.5	.343	.362

* $p > .05$; ** $p > .01$; *** $p > .001$.

a. Girls in grade 3 is the referent category.

Note: $n = 11{,}561$. Students were asked to indicate how frequently each type of overt victimization happened to them during the past 30 days: 1 = never, 2 = once or twice, 3 = a few times, 4 = about once a week, 5 = a few times a week.

Source: Authors' analysis using data from University of Oregon (2005b).

TABLE D6

Differences in student-reported relational victimization on the Peer Experiences Questionnaire associated with gender and grade level, 2005

Parameter	Coefficient	Standard error	*t* statistic	95 percent confidence interval	
				Lower	Upper
Fixed effect					
Boy	.062	.056	1.11	–.049	.172
Grade 4	.058	.054	1.07	–.048	.164
Grade 5	.065	.052	1.25	–.037	.167
Grade 6	–.083	.054	–1.55	–.189	.022
Grade 7	–.030	.054	–0.57	–.136	.075
Grade 8	–.071	.053	–1.33	–.175	.034
Gender by grade 4	–.120	.076	–1.57	–.269	.030
Gender by grade 5	–.289	.074	–3.88***	–.436	–.143
Gender by grade 6	–.195	.064	–3.02**	–.321	–.068
Gender by grade 7	–.200	.064	–3.14**	–.325	–.05
Gender by grade 8	–.238	.052	–3.85***	–.359	–.117
Constant[a]	1.743				

	Coefficient	Standard error	Percent of variance	95 percent confidence interval	
				Lower	Upper
Random effect					
School-level	.012	.004	2.1	.007	.023
Student-level	.580	.018	97.9	.566	.596

* $p > .05$; ** $p > .01$; *** $p > .001$.

a. Girls in grade 3 is the referent category.

Note: $n = 11{,}561$. Students were asked to indicate how frequently each type of relational victimization happened to them during the past 30 days: 1 = never, 2 = once or twice, 3 = a few times, 4 = about once a week, 5 = a few times a week.

Source: Authors' analysis using data from University of Oregon (2005b).

TABLE D7

Differences in student-reported overt aggression on the Peer Experiences Questionnaire associated with gender and grade level, 2005

Parameter	Coefficient	Standard error	*t* statistic	95 percent confidence interval	
				Lower	Upper
Fixed effect					
Boy	.112	.030	3.69***	.053	.172
Grade 4	.035	.030	1.16	–.024	.095
Grade 5	.020	.029	0.67	–.038	.077
Grade 6	.003	.031	0.11	–.057	.064
Grade 7	.067	.031	2.17*	–.006	.127
Grade 8	.107	.031	3.46***	–.046	.167
Gender by grade 4	–.017	.042	–0.40	–.099	.066
Gender by grade 5	.012	.041	0.29	–.068	.092
Gender by grade 6	.021	.034	0.62	–.046	.088
Gender by grade 7	.040	.035	1.16	–.028	.108
Gender by grade 8	.026	.035	0.47	–.052	.084
Constant[a]	1.129				

	Coefficient	Standard error	Percent of variance	95 percent confidence interval	
				Lower	Upper
Random effect					
School-level	.005	.002	2.7	.003	.009
Student-level	.184	.002	97.3	.179	.189

* $p > .05$; ** $p > .01$; *** $p > .001$.

a. Girls in grade 3 is the referent category.

Note: $n = 11{,}561$. Students were asked to indicate how frequently each type of overt aggression happened to them during the past 30 days: 1 = never, 2 = once or twice, 3 = a few times, 4 = about once a week, 5 = a few times a week.

Source: Authors' analysis using data from University of Oregon (2005b).

TABLE D8

Differences in student-reported relational aggression on the Peer Experiences Questionnaire associated with gender and grade level, 2005

Relational aggression	Coefficient	Standard error	*t* statistic	95 percent confidence interval	
				Lower	Upper
Fixed effect					
Boy	.090	.036	2.51*	.020	.160
Grade 4	.104	.035	2.93**	.034	.174
Grade 5	.076	.034	2.21*	.009	–.144
Grade 6	.082	.035	2.36*	.014	.150
Grade 7	.191	.035	5.46***	.123	.260
Grade 8	.243	.035	6.96***	.175	.312
Gender by grade 4	–.070	.049	–1.42	–.167	.027
Gender by grade 5	–.075	.048	–1.56	–.170	.020
Gender by grade 6	–.058	.040	–1.45	–.137	.020
Gender by grade 7	–.078	.041	–1.89	–.159	.003
Gender by grade 8	–.132	.041	–3.24***	–.211	–.052
Constant[a]	1.144				

	Coefficient	Standard error	Percent of variance	95 percent confidence interval	
				Lower	Upper
Random effect					
School-level	.005	.002	2.0	.003	.010
Student-level	.254	.003	98.0	.247	.260

* $p > .05$; ** $p > .01$; *** $p > .001$.

a. Girls in grade 3 is the referent category.

Note: $n = 11{,}561$. Students were asked to indicate how frequently each type of relational aggression happened to them during the past 30 days: 1 = never, 2 = once or twice, 3 = a few times, 4 = about once a week, 5 = a few times a week.

Source: Authors' analysis using data from University of Oregon (2005b).

APPENDIX E
SENSITIVITY ANALYSES FOR IMPUTED DATA

This appendix presents the results of sensitivity analyses conducted to compare the results for the raw data with those that included imputed data to determine whether the imputed data drove the results.

TABLE E1

Sensitivity analyses of differences in student-reported approval of retaliation on the Normative Beliefs about Aggression Survey associated with gender and grade level, 2005

	Imputed data		Raw data	
Parameter	Coefficient	Standard error	Coefficient	Standard error
Fixed effect				
Boy	.132	.031	.136	.029
Grade 4	.048	.028	.052	.029
Grade 5	.094	.028	.095	.028
Gender by grade 4	–.013	.041	–.017	.040
Gender by grade 5	.073	.041	.073	.040
Constant[a]	1.239	.026	1.239	.027
Random effect				
School-level	.004	.002	.005	.003
Student-level	.190	.005	.189	.005

a. Girls in grade 3 is the referent category.

Note: n = 3,109. Students were asked to indicate their level of agreement with the approval of retaliation scale items: 1 = really wrong, 2 = sort of wrong, 3 = sort of OK, 4 = perfectly OK.

Source: Authors' analysis using data from University of Oregon (2005a).

TABLE E2

Sensitivity analyses of differences in student-reported approval of aggression in general situations on the Normative Beliefs about Aggression Survey associated with gender and grade level, 2005

	Imputed data		Raw data	
Parameter	Coefficient	Standard error	Coefficient	Standard error
Fixed effect				
Boy	.090	.027	.090	.026
Grade 4	–.010	.025	–.013	.025
Grade 5	.015	.025	.012	.025
Gender by grade 4	.000	.036	.004	.033
Gender by grade 5	.043	.036	.046	.033
Constant[a]	1.172	.020	1.174	.021
Random effect				
School-level	.001	.001	.004	.001
Student-level	.148	.004	.153	.004

a. Girls in grade 3 is the referent category.

Note: n = 3,109. Students were asked to indicate their level of agreement with the approval of aggression scale items: 1 = really wrong, 2 = sort of wrong, 3 = sort of OK, 4 = perfectly OK.

Source: Authors' analysis using data from University of Oregon (2005a).

TABLE E3

Sensitivity analyses of differences in student-reported beliefs about aggression on the Peer Experiences Questionnaire associated with gender and grade level, 2005

	Imputed data		Raw data	
Parameter	Coefficient	Standard error	Coefficient	Standard error
Fixed effect				
Boy	.012	.031	.016	.031
Grade 4	–.049	.032	–.047	.030
Grade 5	–.049	.030	–.042	.029
Grade 6	–.019	.032	–.010	.033
Grade 7	.080	.032	.088	.033
Grade 8	.133	.032	.141	.033
Gender by grade 4	.049	.044	.052	.042
Gender by grade 5	.151	.042	.148	.041
Gender by grade 6	.126	.035	.125	.035
Gender by grade 7	.108	.035	.104	.035
Gender by grade 8	.121	.035	.114	.035
Constant[a]	1.666		1.66	.028
Random effect				
School-level	.007	.002	.007	.002
Student-level	.186	.002	.184	.003

a. Girls in grade 3 is the referent category.

Note: $n = 11{,}561$. Students were asked to indicate their level of agreement with the beliefs about aggression scale items: 1 = I don't agree at all, 2 = I agree a little, 3 = I agree a lot, 4 = I completely agree.

Source: Authors' analysis using data from University of Oregon (2005b).

TABLE E4

Sensitivity analyses of differences in student-reported overt victimization on the Peer Experiences Questionnaire associated with gender and grade level, 2005

	Imputed data		Raw data	
Parameter	Coefficient	Standard error	Coefficient	Standard error
Fixed effect				
Boy	.116	.043	.104	.043
Grade 4	–.097	.041	–.110	.042
Grade 5	–.147	.041	–.156	.041
Grade 6	–.249	.040	–.258	.042
Grade 7	–.216	.040	–.230	.042
Grade 8	–.244	.040	–.257	.042
Gender by grade 4	.052	.059	.068	.058
Gender by grade 5	–.071	.058	–.060	.057
Gender by grade 6	.019	.049	.033	.049
Gender by grade 7	.032	.049	.045	.049
Gender by grade 8	–.018	.048	.002	.049
Constant[a]	1.601	.034	1.61	.035
Random effect				
School-level	.005	.002	.006	.002
Student-level	.352	.005	.349	.005

a. Girls in grade 3 is the referent category.

Note: n = 11,561. Students were asked to indicate how frequently each type of overt victimization happened to them during the past 30 days: 1 = never, 2 = once or twice, 3 = a few times, 4 = about once a week, 5 = a few times a week.

Source: Authors' analysis using data from University of Oregon (2005b).

TABLE E5

Sensitivity analyses of differences in student-reported relational victimization on the Peer Experiences Questionnaire associated with gender and grade level, 2005

	Imputed data		Raw data	
Parameter	Coefficient	Standard error	Coefficient	Standard error
Fixed effect				
Boy	.062	.056	.055	.056
Grade 4	.058	.054	.052	.054
Grade 5	.065	.052	.062	.053
Grade 6	–.083	.054	–.090	.056
Grade 7	–.030	.054	–.042	.056
Grade 8	–.071	.053	–.084	.056
Gender by grade 4	–.120	.076	–.107	.075
Gender by grade 5	–.289	.074	–.279	.074
Gender by grade 6	–.195	.064	–.191	.062
Gender by grade 7	–.200	.064	–.193	.063
Gender by grade 8	–.238	.052	–.227	.063
Constant[a]	1.743		1.749	
Random effect				
School-level	.012	.004	.014	.004
Student-level	.580	.018	.576	.008

a. Girls in grade 3 is the referent category.

Note: n = 11,561. Students were asked to indicate how frequently each type of relational victimization happened to them during the past 30 days: 1 = never, 2 = once or twice, 3 = a few times, 4 = about once a week, 5 = a few times a week.

Source: Authors' analysis using data from University of Oregon (2005b).

TABLE E6

Sensitivity analyses of differences in student-reported overt aggression on the Peer Experiences Questionnaire associated with gender and grade level, 2005

	Imputed data		Raw data	
Parameter	Coefficient	Standard error	Coefficient	Standard error
Fixed effect				
Boy	.112	.030	.106	.030
Grade 4	.035	.030	.034	.030
Grade 5	.020	.029	.020	.029
Grade 6	.003	.031	–.003	.032
Grade 7	.067	.031	.061	.032
Grade 8	.107	.031	.099	.032
Gender by grade 4	–.017	.042	–.013	.041
Gender by grade 5	.012	.041	.022	.041
Gender by grade 6	.021	.034	.030	.034
Gender by grade 7	.040	.035	.045	.035
Gender by grade 8	.026	.035	.020	.034
Constant[a]	1.129		1.230	
Random effect				
School-level	.005	.002	.005	.002
Student-level	.184	.002	.177	.002

a. Girls in grade 3 is the referent category.

Note: $n = 11{,}561$. Students were asked to indicate how frequently each type of overt aggression happened to them during the past 30 days: 1 = never, 2 = once or twice, 3 = a few times, 4 = about once a week, 5 = a few times a week.

Source: Authors' analysis using data from University of Oregon (2005b).

TABLE E7

Sensitivity analyses of differences in student-reported relational aggression on the Peer Experiences Questionnaire associated with gender and grade level, 2005

	Imputed data		Raw data	
Parameter	Coefficient	Standard error	Coefficient	Standard error
Fixed effect				
Boy	.090	.036	.088	.036
Grade 4	.104	.035	.108	.035
Grade 5	.076	.034	.081	.034
Grade 6	.082	.035	.094	.036
Grade 7	.191	.035	.208	.036
Grade 8	.243	.035	.254	.036
Gender by grade 4	–.070	.049	–.072	.039
Gender by grade 5	–.075	.048	–.071	.038
Gender by grade 6	–.058	.040	–.054	.041
Gender by grade 7	–.078	.041	–.077	.041
Gender by grade 8	–.132	.041	–.132	.041
Constant[a]	1.144			
Random effect				
School-level	.005	.002	.005	.002
Student-level	.254	.003	.248	.003

a. Girls in grade 3 is the referent category.

Note: n = 11,561. Students were asked to indicate how frequently each type of relational aggression happened to them during the past 30 days: 1 = never, 2 = once or twice, 3 = a few times, 4 = about once a week, 5 = a few times a week.

Source: Authors' analysis using data from University of Oregon (2005b).

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