

PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

School Bullying and Suicidal Risk in Korean Middle School Students

Young Shin Kim, Yun-Joo Koh and Bennett Leventhal

Pediatrics 2005;115:357-363

DOI: 10.1542/peds.2004-0902

The online version of this article, along with updated information and services, is located on the World Wide Web at:

<http://www.pediatrics.org/cgi/content/full/115/2/357>

PEDIATRICS is the official journal of the American Academy of Pediatrics. A monthly publication, it has been published continuously since 1948. PEDIATRICS is owned, published, and trademarked by the American Academy of Pediatrics, 141 Northwest Point Boulevard, Elk Grove Village, Illinois, 60007. Copyright © 2005 by the American Academy of Pediatrics. All rights reserved. Print ISSN: 0031-4005. Online ISSN: 1098-4275.

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™



School Bullying and Suicidal Risk in Korean Middle School Students

Young Shin Kim, MD, MPH*†§; Yun-Joo Koh, PhD||; and Bennett Leventhal, MD¶##**

ABSTRACT. *Objective.* Being a victim or a perpetrator of school bullying, the most common type of school violence, has been frequently associated with a broad spectrum of behavioral, emotional, and social problems. In a Korean middle school community sample, this study specifically investigated the prevalence of suicidal ideations and behaviors in victims, perpetrators, and victim-perpetrators of school bullying and compared them with a group of students who were in the same schools and were not involved with bullying.

Methods. In a cross-sectional study, 1718 seventh- and eighth-grade students in 2 middle schools participated in the study in October 2000. Students completed demographic information, Korean Peer Nomination Inventory, and Korean Youth Self-Report.

Results. Compared with the students who were not involved with school bullying, victim-perpetrators reported more suicidal/self-injurious behaviors and suicidal ideation in the previous 6 months (odds ratio [OR]: 1.9 and 1.9, respectively). In female students, all 3 school bullying groups had increased suicidal ideation for the previous 2 weeks (OR: 2.8, 2.0, and 2.8, respectively) but not in male students (OR: 0.9, 1.1, and 1.3, respectively).

Conclusions. Students who were involved in school bullying, especially victim-perpetrators and female students, had significantly higher risks for suicide ideation and suicidal behavior when compared with individuals who were not involved in school bullying. In addition to attempting to decrease bullying in a community, students who are involved in school bullying should be the targets for suicide monitoring and prevention programs. *Pediatrics* 2005;115:357–363; *suicide, school bullying, victim-perpetrator.*

ABBREVIATIONS. K-PNI, Korean Peer Nomination Inventory; SPN, standardized percentage nomination; YSR, Youth Self-Report; K-YSR, Korean Youth Self-Report; SES, socioeconomic status; OR, odds ratio.

From the *Department of Psychiatry, Hallym University, Anyang, South Korea; †Department of Epidemiology, University of California, Berkeley, California; ‡Harold E. Jones Child Study Center, Berkeley, California; §Department of Child and Family Studies, Yonsei University, Seoul, South Korea; ¶Child and Adolescent Psychiatry, University of Chicago, Chicago, Illinois; #Laboratory of Developmental Neurosciences, Irving B. Harris Center for Developmental Studies, University of Chicago, Chicago, Illinois; and **Sonia Shankman Orthogenic School, Chicago, Illinois.

Accepted for publication Jul 6, 2004.

doi:10.1542/peds.2004-0902

No conflict of interest declared.

Reprint requests to (Y.S.K.) Harold E. Jones Child Study Center, 2425 Atherton St, Berkeley, CA 94720-6070. E-mail: kimy02@uclink.berkeley.edu
PEDIATRICS (ISSN 0031 4005). Copyright © 2005 by the American Academy of Pediatrics.

School bullying, the most common type of school violence, is an aggressive behavior perpetrated by students who hold and/or try to maintain a dominant position over others. To that end, bullying is intended to cause mental and/or physical suffering to another.¹

Scientific reports indicate that bullying can lead to serious mental and physical sequelae. This is in sharp contrast to the common belief that school bullying is a benign and “normal” part of the child and/or adolescent experience. Victimized children are reported to have a myriad of clinical problems, including bed wetting, sleep difficulties, anxiety, depression, school phobia, feelings of insecurity, and unhappiness at school; they may also have low self-esteem, loneliness, isolation, and somatic symptoms.^{2–9} In contrast, perpetrators of bullying are reported to have more depression and are more likely than are their peers to be involved with antisocial behaviors and legal problems later in adulthood.^{7,10} Victim-perpetrators (aggressive victims) are considered to be a distinct subtype of school bullying, experiencing psychopathology as well as family and school profiles that differ from the other 2 school bullying subtypes.¹¹

Sporadic media reports of adolescent suicides or suicidal attempts allegedly related to school bullying have brought to the fore the interaction between bullying and suicide.¹² Recently, tragic incidents, such as those at Columbine and elsewhere, suggest that the victims of chronic school bullying are also at greater risk for suicidal and other aggressive behaviors. Similar incidents also have occurred throughout the United States and in Korea.¹³

At least anecdotally, suicide is 1 of the most serious symptoms of psychopathology that seem to be related to school bullying. This is a significant public health issue, especially when one considers that bullying may play a role in the pathologic conditions underlying suicidality, the third leading cause of mortality for adolescents in the United States.¹⁴ For example, a recent, large-scale, epidemiologic study in the United States suggested that in the past year, 19% of the high school students had serious suicidal ideation, 15% made a specific plan to attempt suicide, 8.8% reported suicidal attempts, and 2.6% made a suicidal attempt that was serious enough to require significant medical attention.¹⁵ Similarly, a 2001 report by the Korea National Statistical Office found that the rate of completed suicides for adolescents (from 11 to 19 years) was 15.5 per 100 000, making suicide the third leading cause of death after car accidents and cancer.¹⁶ No Korean national data are

available on suicidal ideation and attempts, but 1 study reported 48.5% and 5.7% for suicidal ideation and attempts, respectively, in a sample of Korean high school students.¹⁷ For children who are at greater risk for suicide, perceived peer rejection, being bullied, and being perpetrators of bullying were associated, directly and indirectly, with major depression, substance use, and antisocial behavior with severe suicidal ideation.^{18–20}

Taken together, the evidence suggests that there are compelling reasons to associate at least some of the child and adolescent risk for suicidal thoughts and actions to school bullying. However, only a few studies have focused on the specific relationship between suicide and school bullying. Furthermore, the generalizability of the findings to date is limited, largely because of methodologic and analytic shortfalls. One important methods problem is the use of the same informants to identify bullying and suicidal behaviors (ie, shared method variance). In this instance, self-reports of bullying are based on the individual's own perception of the social circumstances, a situation in which it is possible that psychopathologic characteristics of the reporter can lead to misinterpretation of otherwise normal social events. This can result in a confounded relationship between suicide and bullying. However, by using a peer nomination technique to identify the bullying and self-reports for suicidal thoughts and behaviors, a study can use separate informants to identify the separate problems, and then the proper relationships between the 2 events can be examined. In the present study, this technique was used for exactly that purpose: to investigate whether the risks of suicidal ideation and attempts are increased in victims, perpetrators, and victim-perpetrators of school bullying, compared with students who were not involved with school bullying. This was done in a community sample of Korean middle school students.

METHODS

Study Population

Two schools were selected in Seoul and Anyang to represent typical Korean public middle school populations. The administrators and parents in the 2 schools agreed to participate in this cross-sectional study in October 2000. All students in the seventh and eighth grades in the selected schools comprised the study population. The 2 schools differed somewhat in size and class composition. The school in Anyang had more classes for each grade and had larger class sizes than did the school in Seoul (13 classes and 8–10 classes/grade respectively; 41–50 and 34–41 students/class, respectively). In addition, the Anyang school had single-gender classrooms, whereas the classrooms in Seoul were coeducational.

The Hallym University College of Medicine Institutional Review Board approved the study. Passive consent was obtained from parents and students. Each student completed a peer nomination questionnaire and a self-report form and provided demographic information under the direction of research assistants in each classroom during school hours. The entire survey took 45 to 60 minutes.

Measures

Korean Peer Nomination Inventory

School bullying was identified using the Korean Peer Nomination Inventory (K-PNI). The K-PNI is composed of 28 items: 11 items for identifying victims, 6 items for identifying perpetrators,

and 11 filter items. To complete K-PNI, children were asked to name classmates who were of the same gender and fit the behavioral type described in each item. The nomination of multiple individuals for each item was allowed.

To aggregate K-PNI data on individual students, Victim and Perpetrator scales of K-PNI are expressed in a standardized percentage nomination (SPN) score. The SPN is calculated by (1) summing the frequencies of nomination in all items of a scale, (2) dividing summed frequencies by the total number of items in a scale, and (3) dividing this number by the number of same-gender students in a classroom.

An SPN score of 1 meant that an individual had been nominated more than once on either the victim or the perpetrator scale. In a skewed distribution, as with the K-PNI, SD does not accurately characterize the population, and a median cutoff is not appropriate when the median score for most children is 0. Thus, an SPN of >1 was used as the cutoff point for categorizing victims and perpetrators because it is more conservative and identifies a more homogeneous group of bullying with less misclassification.

Good to excellent reliability and validity of the K-PNI have been previously reported in Korean children.²¹ The detailed description of the K-PNI and its psychometric properties are described elsewhere.²²

Types of school bullying were categorized into 4 separate groups. A student with an SPN score of >1 in both the victim and perpetrator scores was categorized as victim-perpetrator, whereas an SPN score of >1 on either score led to classification as either perpetrator or victim. Finally, an SPN score of 1 or <1 on both scores was classified as none.

Korean Youth Self-Report

Youth Self-Report (YSR) is the companion version of Child Behavior Checklist for adolescents to self-report competence and problem behaviors for the last 6 months. It was developed for adolescents between the ages of 11 to 18 years. The YSR yields age- and gender-based T-scores for 13 empirically derived subscales, such as anxious/depressed, attention problems, aggressive behaviors, externalizing and internalizing problems, etc. The YSR has been reported to have adequate psychometric properties.²³ Korean Youth Self-Report (K-YSR), the Korean version of YSR, was reported to have similarly adequate psychometric properties in Korean adolescents. As is the case for the YSR, the K-YSR has been normed for gender- and age-specific groups and has been used widely for clinical and research purposes in Korea.²⁴

Suicidal/self-injurious behaviors and suicidal ideation during the previous 6 months were examined using 2 K-YSR items: item 18—"I deliberately try to hurt or kill myself"—and item 91—"I think about killing myself." An additional question was added to evaluate suicidal ideation for the 2 weeks immediately preceding the completion of the questionnaires. For these 3 items, a 3-point scale (0, none; 1, sometimes; 2, often) was used. An answer of 1 or greater was defined as positive for suicidal ideation or behavior.

Anxiety and depressive symptoms were measured by using the Anxious/Depression subscale of K-YSR. As suggested by Achenbach, a T score ≥ 65 on the scale was considered to be clinically significant for anxiety or depressive symptoms.²³

Statistical Analysis

Descriptive statistics, χ^2 tests, and logistic regression were used to examine the relationships between suicidal risks and school bullying. Separate models were fit to 3 outcomes in logistic regression: (1) suicidal/self-injurious behavior, (2) suicidal ideation in the previous 6 months, and (3) suicidal ideation in the last 2 weeks. School bullying was the independent variable of interest in each model. Covariates such as gender, anxious/depression symptoms, and family structure (as a proxy variable for parental marital status) and residence and socioeconomic status (SES) were entered in the multivariate logistic regression to control for their confounding effects on suicidal risk because they are well established independent risk factors of suicide. These factors are similarly associated with school bullying.

In an attempt to explore whether missing data could confound the relationship between bullying and suicide, we undertook analyses to explore whether there was an association between any missing data points and bullying or suicidality. Because of the manner in which the data were collected, there are no missing data points concerning bullying. The only association identified

was for those with missing data on paternal education or their family structure. Thus, the missing data do not meet conditions for a confounder effect, and the relationship between school bullying and suicide in the present study is not likely to be distorted by nonparticipants or missing responses.

Logistic regression was performed in 3 steps. First, univariate logistic regression analyses were performed to explore the relationship between school bullying and suicidality. This produced a crude odds ratio (OR). Multivariate logistic regression analyses then followed to produce an adjusted OR, controlling for the confounding effects of adjusting variables on suicidality. Last, interaction terms (between bullying and covariates) were entered in the model. Interaction terms that improved a model significantly and were statistically significant themselves (at $P < .05$) were kept in the final models.

RESULTS

Study Population

Of a total of 1759 eligible students, 1718 (97.7%) students, participated in the study. Approximately one third of the students were attending the middle school in Seoul. Most students came from intact families and were of middle SES. Male and female students were evenly distributed in the sample (Table 1).

A total of 40% of all students were involved in bullying: victim only, 14%; perpetrator only, 17%; and victim-perpetrator, 9%. Significantly more male than female students experienced school bullying (Table 1).

TABLE 1. Demographic Characteristics of Study Subjects ($N = 1718$)

Characteristic	<i>n</i>	%
Residence		
Seoul	613	35.7
Anyang	1105	64.3
Gender		
Male	942	54.8
Female	776	45.2
Grade		
Seventh	846	49.2
Eighth	872	50.8
Family structure*		
Living with both parents	1499	87.3
Living with father	43	2.5
Living with mother	54	3.1
Living with grandparents	22	1.3
Parental education*		
Father ≤ 12 y	745	43.4
Father > 12 y	922	53.7
Mother ≤ 12 y	1002	58.3
Mother > 12 y	611	35.6
SES*		
High	29	1.7
Middle high	296	17.2
Middle	1150	66.9
Middle low	174	10.1
Low	13	0.8
School bullying†‡		
None	1031 (532:499)	60.0 (56.5:64.3)
Victim only	243 (151:92)	14.1 (16.0:11.9)
Perpetrator only	290 (165:125)	16.9 (17.5:16.1)
Victim-perpetrator	154 (94:60)	9.0 (10.0:7.7)

Pearson χ^2 test was performed to examine gender difference in school bullying types.

* Sum of percentage is not 100% as a result of missing data.

† The numbers in parentheses are the numbers or percentages of male and female students.

‡ $P = .006$.

SPN victim and perpetrator scores were compared as follows: none, victims, perpetrators, and victim-perpetrators. Median SPN victim scores were 0.00, 2.63, 0.21, and 2.86, respectively, suggesting that victims and victim-perpetrators were victimized to the same magnitude. However, median SPN perpetrator scores were 0.00, 0.00, 2.50, and 4.59, suggesting that victim-perpetrators bullied other students more severely than did perpetrators.

Frequencies of Suicidal Risks in Study Population and in School Bullying Groups

For the group that included all subjects, the frequency of self-injurious/suicidal behaviors during the previous 6 months was 8.5%. In contrast, the frequency of suicidal ideations was 26.6% for the previous 6 months and 41.1% for the 2 weeks immediately preceding the study. Suicidal ideations and behaviors were significantly more frequent in girls than in boys, as were anxious/depression symptoms (Table 2).

Suicidal risks and symptoms of anxiety/depression were compared in the 4 types of school bullying. Victims, perpetrators, and victim-perpetrators all reported higher rates of suicidal/self-injurious behaviors and suicidal ideations, in all time sequences, when compared with students who were not involved in bullying. It is noteworthy that this increased suicidal behavior was most prominent in victim-perpetrators. Although perpetrators and victim-perpetrators reported higher proportions of symptoms of anxiety/depression than did victims and those with no school bullying, the differences between groups were not statistically significant (Table 2).

Association Between Suicidal Risk and School Bullying

Compared with the students who were not involved with school bullying, being a victim-perpetrator significantly increased the likelihood of suicidal/self-injurious behavior and suicidal ideation in the previous 6 months (adjusted OR: 1.9 and 1.9, respectively). Being a victim also led to increased risks for suicidal/self-injurious behavior and suicidal ideation in the previous 6 months, but this only approached statistical significance (adjusted OR: 1.7 and 1.3, respectively.)

There was a significant interaction between gender and school bullying in the risk for suicidal ideation for the last 2 weeks. As a result, it is clear that female students who were involved with school bullying were at significantly greater risk for suicidal ideation than were male students. The ORs of suicidal ideation for the last 2 weeks in male victims, perpetrators, and victim-perpetrators were 0.9, 1.1, and 1.3, respectively (confidence interval: 0.6–1.5, 0.7–1.8, and 0.7–2.3, respectively.) The ORs in female students for victims, perpetrators, and victim-perpetrators were 2.8, 2.0, and 2.8 respectively (confidence interval: 1.6–5.1, 1.2–3.1, and 1.4–5.7, respectively; Table 3).

TABLE 2. Frequency of Suicidality and Anxiety/Depression Symptoms in Study Population

Total Study Population	No. of Students (%)			
	S/I B 6 Months (N = 1718)	SI 6 Months (N = 1718)	SI 2 Weeks (N = 1311)	A/D 6 Months (N = 1711)
Male	58 (6.2)	177 (18.8)	241 (33.4)	18 (1.9)
Female	88 (11.3)	280 (36.1)	298 (50.6)	30 (3.9)
Total	146 (8.5)	457 (26.6)	539 (41.1)	48 (2.8)
<i>P</i> value*	.000	.000	.000	.014
School bullying				
None	75 (7.3)	263 (25.5)	293 (37.0)	27 (2.6)
Victim	24 (9.9)	64 (26.3)	77 (43.3)	3 (1.2)
Perpetrator	26 (9.0)	75 (25.9)	106 (46.7)	13 (4.5)
Victim-perpetrator	21 (13.6)	55 (35.7)	63 (54.8)	5 (3.2)
Total subjects	146 (8.5)	457 (26.6)	539 (41.1)	48 (2.8)
<i>P</i> value*	.048	.064	.001	.141

S/I B indicates suicidal/self-injurious behaviors; SI, suicidal ideation; D/A, anxious/depression symptoms.

* Pearson χ^2 test was performed to examine difference in suicidality and anxious/depression symptoms by gender and school bullying types.

TABLE 3. Association Between Suicide and School Bullying

	Crude OR	95% CI	Adjusted OR*	95% CI
Suicidal/self-injurious behaviors over the past 6 mo (N = 1570)				
None	1.00		1.00	
Victim	1.40	0.86–2.26	1.69	1.00–2.85
Perpetrator	1.26	0.79–2.00	1.16	0.70–1.94
Victim-perpetrator	2.01†	1.20–3.37	1.85†	1.01–3.40
Suicidal ideation over the past 6 mo (N = 1570)				
None	1.00		1.00	
Victim	1.04	0.76–1.44	1.29	0.91–1.84
Perpetrator	1.02	0.76–1.37	1.11	0.80–1.54
Victim-perpetrator	1.62†	1.13–2.32	1.90†	1.26–2.87
Suicidal ideation in the last 2 wk (N = 1217)				
None	1.00		1.00	
Victim	1.30	0.93–1.80	0.92	0.57–1.49
Perpetrator	1.49†	1.11–2.01	1.11	0.70–1.76
Victim-perpetrator	2.06†	1.39–3.06	1.27	0.71–2.28
Victim—gender			3.05†	1.42–6.56
Perpetrator—gender			1.77	0.92–3.39
Victim-perpetrator—gender			2.22	0.89–5.52

— indicates interaction terms.

* Adjusted for anxious/depression symptoms, gender, residence, family structure, and SES.

† $P < .05$.

DISCUSSION

Implications of the Present Findings: Prevention and Intervention

School bullying has long been considered a relatively benign “rite of passage.” Indeed, some have suggested that this is an important part of building character and personal strength in children and adolescents, as well as essential for setting the stage for a healthier adulthood. This could not be farther from the truth. With prevalence ranging from 20% to 40%, school bullying is a major public health issue that demands attention and intervention. Fortunately, there has been a recent increase in concern about the impact of school bullying on children and adolescents. In part, this is attributable to the recent suicides and violence said to be associated with school bullying. Misconceptions persist along with the lack of resolve to end this, the most common form of school violence. With this study’s findings that school bullying seems to be clearly associated with

increased suicidal ideation and behavior, there is now more evidence of the terrible effects of bullying on involved children. Not only should this be another compelling reason to intervene with school bullying, but this also provides a new behavioral marker for identifying youths who are at risk for suicidal behavior and ideation.

The linkage between suicidality and school bullying may not be novel; however, previous studies have had significant limitations. To date, only 4 studies (Finland, Netherlands, Australia, and United States) have reported a relationship between suicidal risks and school bullying.^{18,25–27} Each of these studies suggested that there is an increased risk for suicidal ideations in students who are involved with school bullying. However, because of their study methods, these previous findings have limited generalizability. The present study, with more rigorous study procedures and data analyses, is consistent with 4 previous reports of increased suicidality in the students

who are involved with school bullying. All of these findings strongly suggest that the peer rejection and peer abuse that are inherent to school bullying may have a direct effect on the genesis of suicidal ideation and suicidal behaviors in children and adolescents, irrespective of nationality, culture, and other social environments in which the youths find themselves. These findings also emphasize a pivotal opportunity for educators, pediatricians, family physicians, and others to screen, identify, and prevent school bullying and suicide in adolescents.

Suicide is 1 of the most serious health concerns in adolescents. Numerous studies have identified risk factors for adolescent suicide. Among these risk factors are gender, psychopathology (depression, substance abuse, and disruptive behaviors), history of suicidal behavior, cognitive and personality factors (poor interpersonal problem solving ability and aggressive-impulsive behavior), sexual orientation, biological factors (family history of suicide and reduced serotonin activity), family characteristics (parental psychopathology and parental divorce), adverse life circumstances, and socioenvironmental factors (sociodemographic disadvantage and school problems).²⁸ Bullying is not the only risk factor for suicidal thoughts and behaviors, but it surely now must be added to the list. The present study indicates that school bullying and being a victim-perpetrator in particular are significant risk factors for suicidal ideations and behaviors in adolescents, independent of other suicide risk factors, such as anxiety or depression, gender, SES, residence, and family structure.

Given that suicide is a leading cause of mortality in adolescents, school bullying must receive more careful and intensive clinical attention. As a modifiable risk factor for suicide, focused attention to this problem is especially relevant because school bullying has been shown to be very responsive to community intervention. For example, one 8- to 20-month intervention reduced bullying markedly, by 50% or more.²⁹ By extension, this suggests that some suicidal ideations, suicidal plans, suicidal attempts, and even suicides in this particularly vulnerable population would be prevented if bullying interventions had been implemented effectively. Even if school bullying is not stopped completely, intervention could be also used to identify risk groups toward which one could target more specific screening and even therapeutic interventions.

Increased Suicidality in Victim-Perpetrators and Victims of School Bullying

The profile of frequencies of suicidal ideations and suicide attempts in this Korean study population is consistent with previous findings in other populations, suggesting that this study sample appropriately represents the general adolescent population regarding baseline suicidal risks (see Table 2). Victim-perpetrators, in particular, were at significantly increased risk for suicidal behaviors and suicidal ideation during the previous 6 months (OR: 1.9 and 1.9, respectively). It is worth noting a trend (not statistically significant) that victims were at lower

risk for suicidal ideations and behaviors than were the victim-perpetrators (OR: 1.7 and 1.3, respectively; see Table 3). This finding can be interpreted in 2 ways. First, victim-perpetrators scored similarly to victims on the victim subscale, but they scored higher than did the perpetrators on the perpetrator subscale. This means that the victim-perpetrators seem to be more similar to victims in terms of victimization but are more severe than perpetrators in regard to bullying behaviors. Thus, it is plausible to consider 2 separate processes that modify suicidal risks in victims and perpetrators. It seems clear that being a victim increases suicidal risk. However, only the most severe among all perpetrators are at increased risk for suicide. Being both a victim and a perpetrator puts an individual at the greatest risk of all for suicidality, probably because of additive risks for suicide by being both a victim and a severe perpetrator. This view is supported by previous studies that reported increased risks for suicide in both victims and perpetrators.^{18,25,26} An alternative explanation for this finding is that victim-perpetrators are in a group that is distinctive from victims or perpetrators, at least in terms of suicidal risk. That is, not only do victim-perpetrators have suicidal ideation longer than the other groups, but they also act on their suicidal ideas more frequently. Victim-perpetrators are children who display a more aggressive behavior style and are characterized as aggressive victims, leading to a higher risk for peer group rebuff and disruptive behaviors.^{30,31} The results of a similar study that focused on victim-perpetrators suggested that aggressive victims are characterized by the most evident degree of social and behavioral maladjustment, including higher proportions of attention-deficit/hyperactivity disorder, impulsive behavior, and emotional dysregulation. In addition, they are more likely to be distressed emotionally, as well as have lower measures of assertive-prosocial behaviors, higher rates of academic failure, and more peer rejection. In short, victim-perpetrators differ from other aggressive children or victimized children in many ways.¹¹ The results of the present study may add 1 more distinctive characteristic to the victim-perpetrator group: an increased risk for suicidality. This increase in suicidal ideation and suicidal/self-injurious behaviors is an independent effect of being a victim-perpetrator, existing even after controlling for other well-established suicide risk factors. To understand the underlying mechanisms for increased suicidality in school bullying, these 2 possibilities must be explored further in future studies.

Interaction Between School Bullying and Gender in Suicidal Risks

In the present study, it was observed that female students were at greater risk for suicidal ideation over the previous 2 weeks when compared with male students. This establishes an interaction between school bullying and gender, in relationship to suicidal ideation.

The present data indicate that school bullying was an independent risk factor for suicidal behaviors and ideation for the last 6 months. Similarly, it was es-

established previously that gender is an independent risk factor for suicidal ideation and behaviors. These 2 independent risk factors apparently interacted to increase further the risk for suicidal ideations in the present study population, at least in the previous 2 weeks (see Table 3). Given that gender is 1 of the most well-established risk factors for suicide, such an interaction is reasonably expected. However, the differential interactions between gender and school bullying on different suicidal outcomes will benefit from additional exploration. One plausible explanation for the interaction between gender and school bullying in the previous 2 weeks for the female students may be because girls react to bullying with a more acute onset of suicidal ideations than do male students. However, when school bullying persists over an extended period, suicidality becomes equally common in both male and female students, thus making the gender differences disappear over time. Because the duration of the bullying is not measured in this study, the present data cannot be used to explore this possibility.

Methodologic Advantages and Limitations of the Present Study

This study has several strengths relative to previous studies. First, school bullying is identified by peer nomination, and suicidal risks were measured by self-report. This direct sampling of the experience of the youths seems to be powerful. Second, on the basis of the way the data were collected, the outcome and predictor variables were collected from different sources; this procedure limited the shared method variance as an alternative explanation of observed associations in this study.³² Third, for the first time, this study demonstrated not only the association between school bullying and suicidal ideation but also the association between school bullying and suicidal/self-injurious behaviors. Fourth, a large number of study subjects and high rate of participation of the eligible study subjects minimized sampling bias. Last, a thorough examination of the missing data supported lack of confounding effect by nonparticipants or nonresponse on the observed association between suicidality and school bullying.

As with most studies, there are also some limitations. First, the outcome and predictor variables were measured only once. The cross-sectional nature of the study limits the interpretation of the results. Second, measures of anxious/depression symptoms were based on the self-report rather than clinical evaluation. Third, anxious/depression and 2 of 3 suicide questions came from the same questionnaire. This may have diluted the magnitude of the association between school bullying and suicidal risk, as a result of overlapping between anxious/depression subscales and the suicide questions, resulting in high interrelatedness between them.

Despite its limitations, this study shows even more clearly that school bullying is a serious problem in the community. It is an all-too-common problem that demands the attention of parents, educators, and public health officials. Not only does school bullying interfere with normal developmental and educa-

tional processes, but it also places children at an unnecessary and additional risk for suicidal thoughts and actions. Although there is a general overall risk for students who participate in school bullying, the present findings suggest that careful clinical attention for suicidal risk must be paid to the victim-perpetrators and victims of school bullying, as well as female students who are involved with school bullying. In addition to general interventions to reduce all forms of bullying, this subgroup of students should likely be screened for suicidal ideation and behavior.

Although most, if not all, children may experience bullying either as participants or as observers, that it is common should not suggest that it is "normal" and, hence, an acceptable part of "normal development." Indeed, evidence from this study and others cited suggests that exposure to bullying, especially for participants, is harmful. Therefore, it is imperative that there now be a common goal to intervene actively to reduce school bullying in all communities and to seek out children who are victims and perpetrators to protect them from suicidality and other serious adverse consequences of this serious public health problem.

ACKNOWLEDGMENTS

This research was funded by Health Promotion Grant 2000 from the Korea Institute for Health and Social Affairs. Additional Funding came from the Jean Young and Walden W. Shaw Foundation.

REFERENCES

1. Morita Y. *Sociological Study on the Structure of Bullying Group*. Osaka, Japan: Department of Sociology, Osaka City University; 1985
2. Boulton MJ, Underwood K. Bully/victim problems among middle school children. *Br J Educ Psychol*. 1992;62(suppl):73-87
3. Boulton MJ, Smith PK. Bully/victim problems in middle-school children: stability, self-perceived competence, peer rejection and peer acceptance. *Br J Dev Psychol*. 1994;12:315-329
4. Byrne B. Bullies and victims in a school setting with reference to some Dublin schools. *Ir J Psychol*. 1994;15:574-586
5. Rigby K, Slee P. Dimensions of interpersonal relation among Australian children and implications for psychological well-being. *J Soc Psychol*. 1993;133:33-42
6. Rigby K. The relationship between reported health and involvement in bully/victim problems at school among male and female secondary school children. *J Health Psychol*. 1998;3:465-476
7. Salmon G, James A, Smith DM. Bullying in schools: self reported anxiety, depression, and self esteem in secondary school children. *BMJ*. 1996;317:924-925
8. Slee PT. Situational and interpersonal correlates of anxiety associated with peer victimisation. *Child Psychiatry Hum Dev*. 1994;25:97-107
9. Williams K, Chambers M, Logan S, Robinson D. Association of common health symptoms with bullying in primary school children. *BMJ*. 1996; 313:17-19
10. Olweus D. Bullying at school: basic facts and effects of a school based intervention program. *J Child Psychol Psychiatry*. 1994;35:1171-1190
11. Schwartz D. Subtypes of victims and aggressors in children's peer groups. *J Abnorm Child Psychol*. 2000;28:181-192
12. Smith PK, Morita Y. Introduction. In: Smith PK, Morita Y, Junger-Tas J, Olweus D, Catalano R, Slee P, eds. *The Nature of School Bullying: A Cross-Sectional Perspective*. New York, NY: Routledge; 1999:1-4
13. Han JH. 9th grader, stab a bully to death in the class. *Chosun Ilbo*. 2002;April 16
14. Anderson R. Deaths: leading causes for 2000. *Natl Vital Stat Rep*. 2002; 50:1-85
15. Grunbaum J, Kann L, Kinchen S, et al. Youth risk behavior surveillance—United States, 2001. *MMWR Surveill Summ*. 2002;51:1-62
16. Lee JW. *Mortality Statistics, 2001*. Daejeon, Korea: Korea National Statistical Office; 2002

17. Chun Y, Lee S. Analysis of variables related to adolescent's suicidal ideation. *Kor J Youth Stud.* 2000;7:221–246
18. Kaltiala-Heino R, Rimpela M, Marttunen M, Rimpela A, Rantanen P. Bullying, depression, and suicidal ideation in Finnish adolescents: school survey. *BMJ.* 1999;319:348–351
19. Prinstein MJ, Boergers J, Spirito A, Little TD, Grapentine WL. Peer functioning, family dysfunction and psychological symptoms in a risk factor model for adolescent inpatients' suicidal ideation severity. *J Clin Child Psychol.* 2000;29:392–405
20. Shaffer D, Garland A, Gould MS, Fisher P, Trautman P. Preventing teenage suicide: a clinical review. *J Am Acad Child Adolesc Psychiatry.* 1988;27:675–687
21. Kim Y, Koh Y, Noh J. Development of Korean-Peer Nomination Inventory (K-PNI)—an inventory to evaluate school bullying. *J Kor Neuropsychiatry Assoc.* 2001;40:867–875
22. Kim Y, Koh Y, Leventhal B. Prevalence of school bullying in Korean middle school students. *Arch Pediatr Adolesc Med.* 2004;158:737–741
23. Achenbach T. *Manual for the Youth Self-Report and 1991 Profile.* Burlington, VT: University of Vermont, Department of Psychiatry; 1991
24. Oh KJ, Hong KE, Lee HR. *Korean-Youth Self Report (K-YSR).* Seoul, Korea: Jungang Aptitude Research Center; 1997
25. Rigby K, Slee P. Suicidal ideation among adolescent school children, involvement in bully-victim problems and perceived social support. *Suicide Life Threat Behav.* 1999;29:119–130
26. van der Wal M, de Wit C, Hirasing R. Psychosocial health among young victims and offenders of direct and indirect bullying. *Pediatrics.* 2003; 111:1312–1317
27. Cleary SD. Adolescent victimization and associated suicidal and violent behaviors. *Adolescence.* 2000;35:671–682
28. Gould MS, Greenberg T, Velting DM, Shaffer D. Youth suicide risk and preventive interventions: a review of the past 10 years. *J Am Acad Child Adolesc Psychiatry.* 2003;42:386–405
29. Olweus D. Bullying at school. Basic facts and an effective intervention programme. *Promot Educ.* 1994;1:27–31, 48
30. Perry DG, Kusel SJ, Perry LC. Victims of peer aggression. *Dev Psychol.* 1988;24:807–814
31. Kupersmidt JB, Patterson C, Eickholt C. Socially rejected children: bullies, victims, or both? Paper presented at: the Biennial Meeting of the Society for Research in Child Development; April 27–30, 1989; Kansas City, MO
32. Hawker DSJ, Boulton MJ. Twenty years' research on peer victimization and psychosocial maladjustment: a meta-analytic review of cross-sectional studies. *J Child Psychol Psychiatry.* 2000;41:441–455

POSTMARKETING SURVEILLANCE II

“The current approval process for drugs and biological agents in the United States has come under intense scrutiny, most notably because of concerns about influence from industry. For instance, since adoption of the 1992 Prescription Drug User Fee Act, which augmented the budget of the Food and Drug Administration (FDA) by charging ‘user fees’ to pharmaceutical firms, the FDA has received approximately \$825 million in fees from drug and biologic manufacturers from fiscal years 1993 through 2001. During that time, median approval times for standard (ie, ‘non-priority’) drugs decreased from 27 months in 1993 to 14 months in 2001, but as an inevitable consequence of faster approvals, drug recalls following approval increased from 1.56% for 1993–1996 to 5.35% for 1997–2001. In addition, an investigation of 18 FDA expert advisory panels revealed that more than half of the members of these panels had direct financial interests in the drug or topic they were evaluating and for which they were making recommendations.”

Fontanarosa PB, Rennie D, DeAngelis CD. *JAMA.* 2004;292:2647

Noted by JFL, MD

School Bullying and Suicidal Risk in Korean Middle School Students

Young Shin Kim, Yun-Joo Koh and Bennett Leventhal

Pediatrics 2005;115:357-363

DOI: 10.1542/peds.2004-0902

Updated Information & Services

including high-resolution figures, can be found at:
<http://www.pediatrics.org/cgi/content/full/115/2/357>

References

This article cites 25 articles, 6 of which you can access for free at:
<http://www.pediatrics.org/cgi/content/full/115/2/357#BIBL>

Citations

This article has been cited by 11 HighWire-hosted articles:
<http://www.pediatrics.org/cgi/content/full/115/2/357#otherarticles>

Subspecialty Collections

This article, along with others on similar topics, appears in the following collection(s):
Adolescent Medicine
http://www.pediatrics.org/cgi/collection/adolescent_medicine

Permissions & Licensing

Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at:
<http://www.pediatrics.org/misc/Permissions.shtml>

Reprints

Information about ordering reprints can be found online:
<http://www.pediatrics.org/misc/reprints.shtml>

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™

