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The Journal of Early Adolescence 2005; 25; 268

DOI: 10.1177/0272431605276933

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Psychosocial Influences on Physical, Verbal, and Indirect Bullying Among Japanese Early Adolescents

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Although bullying among Japanese youth is a current major concern, psychosocial influences on bullying are not fully understood. The purpose of this study was to identify the psychosocial factors associated with physical, verbal, and indirect bullying among Japanese adolescents. Junior high school students between seventh and ninth grade (N = 2,923) completed a self-reported questionnaire. Involvement in bullying and psychosocial factors were investigated. Deviant peer influence, less serious attitude in school, poor self-control of aggressiveness and impulsiveness, poor self-assertive efficacy against bullying, and euphemistic thinking were commonly associated with physical, verbal, and indirect bullying. Experiences of victimization by physical and verbal bullying were associated with both physical and verbal bullying, whereas experiences of victimization by indirect bullying were associated with indirect bullying. Psychosocial factors associated with different types of bullying substantially overlapped. Therefore, interventions focused on these modifiable common factors could be effective in the prevention of adolescent bullying.

Keywords: *bullying; adolescent; self-control; peer influence; self-efficacy*

Bullying in junior high schools is recognized as a serious public health problem because bullying directly and indirectly influences violence, school absenteeism, delinquency, suicide, and mental problems (Japanese Ministry

This research was supported by a grant from the United Graduate School of Education Tokyo Gakugei University. Correspondence concerning this article should be addressed to Mikayo Ando, The United Graduate School of Education Tokyo Gakugei University, Health Science Laboratory, Tokyo Gakugei University, 4-1-1 Nukuikita-machi, Koganei-shi, Tokyo 184-8501, Japan; e-mail: mikayo@rc5.so-net.ne.jp.

Journal of Early Adolescence, Vol. 25 No. 3, August 2005 268-297

DOI: 10.1177/0272431605276933

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of Education, Culture, Sports, Science and Technology [Japanese Ministry of Education], 2003; Morita, Taki, Hata, Hoshino, & Wakai, 1999). Though bullying occurs at all ages, it is most common in late childhood through early or middle adolescence, with its peak period generally occurring in junior high school ages (Japanese Ministry of Education, 2003). Reported rates of bullying and/or victimization problems among adolescents are 23% to 33% in Japan (Japanese Ministry of Education, 2003; Morita et al., 1999), 30% in the United States (Nansel et al., 2001), 38% in England (Boulton & Underwood, 1992), 25% in Australia (Slee, 1995), and 15% in Norway (Olweus, 1993). Those of a cross-national study in 25 countries ranged from 9% in Sweden to 54% in Lithuania (Nansel, Craig, Overpeck, Saluja, & Ruan, 2004).

A number of definitions on bullying exist in the literature. For example, bullying is characterized by aggressive behavior or intentional harm carried out repeatedly over time in an interpersonal relationship characterized by an imbalance of power (Olweus, 1993). A student is being bullied or picked on when another student says nasty and unpleasant things to him or her. It is also bullying when a student is hit, kicked, threatened, locked inside a room, and sent nasty notes and when no one ever talks to him (Smith & Sharp, 1994). Typically, bullying is longstanding violence, physical or mental, conducted by an individual or group and directed against an individual who is not able to defend himself in the actual situation (Roland, 1989).

Most of the previous studies on bullying in Western-culture countries have focused on physical aggression (e.g., fighting, hitting, and kicking) and verbal aggression (e.g., name calling and threatening) as direct (overt) bullying. Psychosocial characteristics of bullies and their victims have been intensively investigated. Adolescents who bully others tend to be aggressive, hostile, and less cooperative toward peers (Haynie et al., 2001); demonstrate a lesser sense of justice, sympathy, and perception about bullying (Chisholm, 1998); and show a higher level of dislike for school (Rigby & Slee, 1991). They tend to be depressed, have severe suicidal ideation (Kaltiala-Heino, Rimpela, Marttunen, Rimpela, & Rantanen, 1999), and have more physical and mental symptoms (Salmon & West, 2000). They tend to demonstrate higher levels of conduct problems and hyperactivity (Kumpulainen et al., 1998). They tend to be less popular with teachers than nonbullies (Slee & Rigby, 1993). Adolescents who are bullied tend to exhibit poor social functioning (Haynie et al., 2001; Kumpulainen et al., 1998). They tend to be more depressed, anxious, insecure, lonely, and unhappy; have severe suicidal ideation (Kaltiala-Heino et al., 1999); and have more physical and mental symptoms (Salmon & West, 2000). They demonstrate lower levels of self-esteem and are usually cautious, sensitive, and quiet (Olweus, 1993; Slee &

Rigby, 1993). Many victims are also bullies (Haynie et al., 2001) because bullying often stimulates aggressive reactions. The characteristics of adolescents who both bully and have been bullied show less favorable psychosocial and behavioral factors, such as problem behaviors, attitudes toward deviance, peer influences, relationship with classmates, loneliness, depressive symptoms, and school-related functioning (Haynie et al., 2001; Nansel et al., 2001).

Since the early 1990s, some researchers have reported gender differences in types, intensities, onset, and duration of aggression (Paetsch & Bertrand, 1997). In general, indirect (relational or covert) bullying, such as intentionally ignoring and excluding someone from peers, which can lead to social isolation, is more common among girls (Bjorkqvist, Lagerspetz, & Kaukiainen, 1992; Boulton, 1997; Crick & Grotpeter, 1995; Olweus, 1993; van der Wal, de Wit, & Hirasing, 2003), whereas direct bullying and victimization are more frequent in boys (Bjorkqvist et al., 1992; Crick & Grotpeter, 1995; Haynie et al., 2001). Victims who are indirectly bullied are likely to report depression, suicide ideation, loneliness, submissiveness, self-restraint, and emotional distress and to worry about their relations with others (Crick & Grotpeter, 1995; Parkhurst & Asher, 1992; van der Wal et al., 2003). Those who engage in indirect bullying are more likely than others to report delinquent behavior, depression, suicidal ideation, loneliness, and isolation from peers (Crick & Grotpeter, 1995; van der Wal et al., 2003). Although the effects of indirect bullying may be equally as damaging as direct bullying, indirect bullying has been the subject of psychosocial research only during the last decade (Griffin, Scheier, Botvin, Diaz, & Miller, 1999).

The motivation to address bullying in Japan emanated from concerns about victims of bullying. Seven school children in 1984 and nine students in 1985 committed suicide where bullying was involved (Morita, Soeda, Soeda, & Taki, 1999; Suzuki, 2000). Thereafter, the Japanese Ministry of Education took up bullying as an important matter related to interpersonal problems in school education guidelines (Suzuki, 2000). The Japanese Ministry of Education defines bullying as types of repeated physical and/or psychological one-sided aggressive behaviors that give a weaker victim serious pain (Japanese Ministry of Education, 2003). This definition includes threatening someone verbally, teasing, hiding someone's property, excluding someone from a group of friends, ignoring someone, violating others, demanding money from someone, and interfering.

Most of the previous studies on bullying in Japan have used the broad definition of bullying that included physical aggression, verbal aggression, and indirect aggression. Researchers were interested in bullying within the context of the group dynamics of bullies, victims, audiences (i.e., cheering and

enjoying), and bystanders (i.e., pretending not to know) in a group in a classroom (Morita, 1985). Some of these roles have turned out to be more or less consistent, but some of them now appear to be inconsistent, depending on the situation (Asakura, 2000). Japanese adolescents who bully others tended to show a lower level of trust toward others (Ando, Asakura, & Nakayama, 2004). Also, their perceptions on bullying appear to differ. Female students perceived most aggressive behaviors as more relevant bullying than did male students. Students perceived some aggressive behaviors as less relevant to bullying from the standpoint of being victims than from the standpoint of being bystanders. Furthermore, students perceived some behaviors as less relevant to bullying than did teachers and parents (Ando, Asakura, & Kobayashi, 2003).

According to social learning and problem behavior theories (Bandura, 1986; Jessor, 1977), bullying behavior continually interacts with individual factors and environmental factors. The development of bullying and aggression may be influenced by the broader social environment, both directly and indirectly. Adolescents model aggressive behavior from adults and deviant peer behavior. The indirect effects include shaping perceptions, norms, and attitudes toward what is acceptable and appropriate behavior (Ennett & Bauman, 1991; Erdley & Asher, 1998; Gorman-Smith, Tolan, Zelli, & Huesmann, 1996; Paetsch & Bertrand, 1997; Snyder, Dishion, & Patterson, 1986).

Parenting influences the development of antisocial and violent behavior (Aseltine, 1995; Clark & Shields, 1997; Jessor, 1998; Loeber & Hay, 1997). Low levels of parental monitoring have been linked to adolescent antisocial orientations. Families of antisocial children are characterized as having little positive parental involvement with the child and having poor monitoring and supervision of a child's activities (Loeber & Dishion, 1983). Poor parent-child bonding may be caused by lack of supervision. Poor bonding implies a failure to identify with parental and societal values (Hirschi, 1969/2002). In Japan, 70% to 80% of parents of bullies did not know about the bullying in which their children were involved (Fujimoto, 1996; Japanese Ministry of Education, 2003).

The role of school variables in the development of problem behavior in youth is of considerable research interest (Erdley & Asher, 1998; Hawkins & Weis, 1985; Malek, Chang, & Davis, 1998; St. George & Thomas, 1997). School bonding, perceived school climate, and school adjustment were negatively associated with bullying (Haynie et al., 2001; Nansel et al., 2004; Slee, 1995; Slee & Rigby, 1993). Although other studies indicated that school bonding was not significantly associated with bullying directly, they implied potential association between bullying and school factors in a comprehensive

fashion (Bosworth, Espelage, & Simon, 1999; Espelage, Bosworth, & Simon, 2001). School factors may function as both direct effects, through modeling of people in schools and social reinforcement of school rules, and indirect effects, through perceived school bonding and attitudes toward what is appropriate behavior in school.

The well-established association between antisocial friends and aggressive behavior (Erdley & Asher, 1998; Paetsch & Bertrand, 1997; Snyder et al., 1986) may be caused by direct peer socialization, where teens are aggressive because of the culture of aggressiveness of their peer group, or the tendency of youth who are aggressive to affiliate with other aggressive, antisocial youth who are likely to approve and reward this behavior.

The interaction of culture and the psychosocial state is an important influence in the way an individual makes decisions (Markus & Kitayama, 1991). A collective culture in Japan stresses and encourages empathy among group members. At the same time, the collective stress on conformity and the intense competition for sameness are thought to characterize intragroup relations (Crystal, Watanabe, & Chen, 1999). Collectivism has been associated with a hierarchical and rigid family and social structure (Triandis, 1989). Lebra (1976) reported that the Japanese nightmare is exclusion, meaning that one fails in the normal goal if not connected to others. Japanese students differ in cognitive, motivational, and emotional patterns from students in Western-culture countries (Markus & Kitayama, 1991; Rios-Ellis, Bellamy, & Shoji, 2000; Tremblé, 2001). However, psychosocial risk factors associated with bullying have not yet been investigated comprehensively in Japan.

The purpose of this study is to extend the existing literature on bullying by addressing the prevalence of physical, verbal, and indirect bullying and by identifying psychosocial variables associated with the three different types of bullying among Japanese junior high school students. The study explored the extent to which individual factors are associated directly with or indirectly through perceived environmental factors, such as parental, school, and peer relationships involved in the three different types of bullying.

METHOD

Subjects and Procedures

In Japan, 94% of junior high school students attend public schools, whereas 6% of students attend private junior high schools. This study was conducted in eight public junior high schools in two suburban cities located within 150 km from the center of Tokyo. Of 3,486 students (seventh, eighth,

and ninth graders) aged 12 to 15 years, 2,923 (83.8%) completed the survey. Five hundred forty-nine students did not participate in this survey because they were absent from school on the day of the survey ($n = 363$) or refused to participate in the survey ($n = 186$); data on gender were missing for 14 students. Consent was obtained from each school principal. In the home base classroom, students were asked by their teachers to assent to participation.

A study investigator explained the survey procedure to the school principals or vice principals, and in turn, they explained the procedure to the teachers who administered and proctored the survey questionnaire. To ensure privacy, the students were not required to identify themselves by name or identification number. The study was reviewed and approved by the United Graduate School of Education Tokyo Gakugei University Institutional Review Board and authorized by the Board of Education in each city.

Measures

The self-reported questionnaire consisted of items concerning student psychosocial variables and experiences in bullying and victimization. Some items were selected from scales written in English, and they were translated into Japanese. The translated items were piloted to seven junior high school students to examine the difficulty of understanding. Then, the items were reviewed by seven school administrators.

To reveal factor structure, those psychosocial variables were subjected to exploratory factor analyses, using the maximum likelihood method with promax rotation. The number of factors was decided and based on an eigenvalue that was more than 1.0, steep slope in scree plot, and interpretability. Items were included when the final communality estimates were more than .09 and the standardized regression coefficients (factor loading) were more than .3 for any factor. Then, to examine the validity of each hypothesized measurement model, confirmatory factor analysis was performed using the selected items based on the exploratory factor analysis. The models were adapted when the goodness-of-fit index (GFI) was more than .9, adjusted goodness-of-fit index (AGFI) was more than .9, and root mean square error of approximation (RMSEA) was less than .1 (Bollen & Long, 1993). Each psychosocial variable was analyzed using the sum of the scores of corresponding items.

Bullying. Interviews were conducted with 52 junior high school students to gain an understanding of the behaviors perceived as bullying. The bullying behaviors were selected for this study based on these interviews and previous adolescent health studies (Boulton, 1997; Haynie et al., 2001; Japanese Min-

Table 1
Bullying Survey Format

Stem	Response category for each item
Bullying	
How many times have you:	0 = none
Physical bullying (alpha = .77)	1 = one or two times
started a fight	2 = sometimes
hit, kicked or choked someone	3 = once a week
taken, hidden, or damaged someone's property	4 = more than two or three times
forced someone to act against their will	a week
hurt someone physically by materials such as thumbtacks or pens	
Verbal bullying (alpha = .65)	
name called someone directly	
threatened someone verbally	
teased someone sexually	
demanded money from someone	
Indirect bullying (alpha = .83)	
ignored someone	
excluded someone from your group of friends	

istry of Education, 2003). Bullying during the last 6 months was assessed by asking 11 items, rated on a 5-point scale shown in Table 1. Bullying was analyzed and grouped together depending on the types of aggression applied on the previous studies (Bjorkqvist et al., 1992; Boulton, 1997; Crick & Grotpeter, 1995; Olweus, 1993; van der Wal et al., 2003). Starting a fight, hitting, kicking or choking, taking, hiding or damaging property, forcing someone to act against their will, and physically hurting by materials such as thumbtacks and pens were labeled as *physical bullying* ($\alpha = .77$). Name calling, threatening verbally, teasing sexually, and demanding money were labeled as *verbal bullying* ($\alpha = .65$). Ignoring and excluding were labeled as *indirect bullying* ($\alpha = .83$).

Victimization. Victimization during the last 6 months was assessed by asking students how many times they had experienced being on the receiving end of each of the 11 items listed in the previous measure, using the same 5-point response scale: *victimization by physical bullying* ($\alpha = .77$), *victimization by verbal bullying* ($\alpha = .66$), and *victimization by indirect bullying* ($\alpha = .81$).

Deviant peer influence. Deviant peer influence was assessed by asking, "How many of your four closest friends bully students?" using a 5-point scale.

Self-assertive efficacy against bullying. Self-assertive efficacy against bullying was assessed by a self-regulatory efficacy item developed by Caprara et al. (1998). Respondents were asked, "How much assertiveness

can you express when you are asked by your friends to do bullying?" using a 5-point scale ranged from 1 = *I cannot express* to 5 = *I can express*.

Social self-efficacy. Social self-efficacy (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996b) was assessed by students' beliefs in their capabilities to maintain social relationships and manage difficult types of interpersonal conflict. The scale was developed based on the interviews from junior high school students. The items were rated on a 5-point scale ranging from 1 = *very unsure* to 5 = *very sure*. The exploratory factor analysis and the confirmatory factor analysis revealed four 1-1 factor model (GFI = .949, AGFI = .925, RMSEA = .069). The factors were labeled as *self-efficacy in interpersonal relationship* ($\alpha = .74$), *self-efficacy in overcoming difficulty* ($\alpha = .77$), *self-efficacy in self-control* ($\alpha = .64$), and *self-efficacy in problem solving* ($\alpha = .77$).

Self-control. Self-control was assessed by a subscale of the Weinberger Adjustment Inventory (Weinberger & Schwartz, 1990). It assessed the respondent's tendency to maintain appropriate self-control in areas including losing their temper, with items rated on a 5-point scale ranging from 0 = *none* to 4 = *more than two or three times a week*. The exploratory factor analysis and the confirmatory factor analysis revealed two 1-1 factor model (GFI = .987, AGFI = .967, RMSEA = .067). The factors were labeled as *impulsiveness* ($\alpha = .62$) and *aggressiveness* ($\alpha = .70$).

Moral disengagement. Moral disengagement was assessed by a subset of items from the Moral Disengagement Scale (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996a). Respondents were asked about their readiness and proneness to moral disengagement of different types of detrimental conduct in various contexts and interpersonal relationships, with items rated on a 5-point scale ranging from 1 = *disagree* to 5 = *agree*. The exploratory factor analysis and the confirmatory factor analysis revealed two 1-1 factor model (GFI = .956, AGFI = .937, RMSEA = .064), labeled as *euphemistic thinking* ($\alpha = .81$) and *displacement of responsibility* ($\alpha = .73$).

School climate. School climate, assessing perceived school environment, was measured by the short-type School Climate Scale (Simons-Morton, Crump, Haynie, Saylor, Eitel, et al., 1999) and new developed by Pyper, Freiberg, Ginsburg, and Speck (1987), with two new items added. The items are rated on a 5-point scale ranging from 1 = *disagree* to 5 = *agree*. The exploratory factor analysis and the confirmatory factor analysis revealed

three 1=1 factor model (GFI = .961, AGFI = .930, RMSEA = .085), labeled as *pride at school* ($\alpha = .76$), *support by school teachers* ($\alpha = .86$), and *support by close friends* ($\alpha = .63$).

School adjustment. School adjustment was assessed by applying part of the School Adjustment Scale, with items rated on a 5-point scale ranging from 1 = *false* to 5 = *true* (Simons-Morton, Crump, Haynie, Saylor, Eitel, et al., 1999). The exploratory factor analysis and the confirmatory factor analysis revealed three 1=1 factor model (GFI = .953, AGFI = .911, RMSEA = .095). The factors were labeled as *academic performance* ($\alpha = .72$), *appropriate relationship with classmates* ($\alpha = .67$), and *serious attitude in school* ($\alpha = .74$).

Parental involvement. Parental involvement to assess how much the respondents thought their parents or guardians knew about their friends, activities, health, school life, and academic performance was measured by the short-type Parent Involvement Scale (Haynie et al., 2001), originally developed by Hetherington and Clingempeel (1992), with two original items added. The items are rated on a 5-point scale, ranging from 1 = *know almost nothing* to 5 = *know a lot*. The exploratory factor analysis and the confirmatory factor analysis revealed two 1=1 factor model (GFI = .980, AGFI = .962, RMSEA = .063). The factors were labeled as *parental concern for student's daily life* ($\alpha = .81$) and *parental concern for details of student's life* ($\alpha = .68$).

Open communication with parents. Open communication with parents or guardians was assessed by applying a subscale of adolescent's open communication with parents from the Parent-Adolescent Communication Scale, which was originally developed by Barnes and Olson (1985), with one new item added. The items were rated on a 5-point scale, ranging from 1 = *disagree* to 5 = *agree*. The exploratory factor analysis and the confirmatory factor analysis revealed one 1=1 factor model (GFI = .983, AGFI = .961, RMSEA = .072). The factor was labeled as *open communication with parents* ($\alpha = .88$).

The example item, the number of items, the range of scores, mean, standardized deviation, and coefficient alpha for each variable are shown in Table 2.

Table 2
Summary of the Psychosocial Variables (N=2301)

Variable	Items	Range	\bar{X}	S	D	Alpha	Example Items
Parental involvement							
Parental concern for student's daily life	5	5-25	20.97	3.97	.81		My parents/guardians know how I spend my time after school and on weekends.
Parental concern for details of student's life	3	3-15	8.38	2.94	.68		My parents/guardians know about my worries.
Open communication with parents	6	6-30	18.83	6.12	.88		My parents/guardians are always good listeners.
School adjustment							
Academic performance	3	3-15	9.83	2.91	.72		I do well on school work.
Appropriate relationship with classmates	3	3-15	11.22	2.56	.67		I get along with classmates.
Serious attitude in school	3	3-15	10.49	2.85	.74		I follow the rules at school.
School climate							
Pride at school	3	3-15	10.40	3.09	.76		I am proud to be a student at this school.
Support by school teachers	8	8-40	23.78	6.98	.86		My teachers know when students try hard and when they do not.
Support by close friends	2	2-10	8.38	1.69	.63		My friends recognize my good points.
Deviant peer influence							
Number of friends who bully students?	10	-4	.41	.93			- How many of your four closest friends bully students?
Self-control							
Impulsiveness	3	0-12	4.26	2.60	.62		I become 'wild and crazy' and do things other people might not like.
Aggressiveness	3	0-12	2.98	2.79	.70		I lose my temper and let people have it when I am angry.
Self-assertive efficacy against bullying							
Self-assertive efficacy against bullying	11	-5	4.28	1.13			- I can express assertiveness when I am asked by my friends to do bullying.
Social self-efficacy							
Self-efficacy in interpersonal relationship	6	6-30	19.28	4.83	.74		I can talk with a friend to solve the problem which rose among friends.
Self-efficacy in overcoming difficulty	3	3-15	9.63	3.10	.77		I can work positively even in a difficult situation.
Self-efficacy in self-control	3	3-15	9.49	2.80	.64		I can tell a friend my feeling calmly even when a friend offends.
Moral disengagement							
Self-efficacy in problem-solving	2	2-10	6.54	2.08	.77		I can solve a problem by trying out several solutions and then picking one that works best.
Euphemistic thinking	7	7-35	19.15	6.13	.81		Teasing someone does not really hurt them.
Displacement of responsibility	6	6-30	12.38	4.81	.73		Kids cannot be blamed for misbehaving if their friends pressured them to do it.

Note. Each variable was scored higher as the tendency was higher.

RESULTS AND DISCUSSION

Prevalence of Bullying and Victimization

The prevalence of bullying in the last 6 months is presented in Table 3. Overall, in physical bullying, 507 (17.4%) students reported starting a fight; 880 (30.3%) students reported hitting, kicking, or choking someone; 412 (14.2%) students reported taking, hiding, or damaging someone's property; 243 (8.4%) students reported forcing someone to act against their will; and 131 (4.5%) students reported hurting someone physically by materials such as thumbtacks and pens at least once during the last 6 months. Concerning verbal bullying, 781 (26.9%) students reported name calling directly; 345 (11.9%) students reported threatening someone verbally; 250 (8.6%) students reported teasing someone sexually; and 78 (2.7%) students reported demanding money from someone at least once during the last 6 months. Concerning indirect bullying, 1,183 (40.71%) students reported ignoring someone, and 895 (30.9%) students reported excluding someone from a group of friends at least once during the last 6 months.

The prevalence of victimization in the last 6 months is presented in Table 4. Overall, for victimization by physical bullying, 872 (30.0%) students reported being fought against; 954 (32.9%) students reported being hit, kicked, or choked; 654 (23.2%) students reported having property taken, hidden, or damaged; 525 (18.1%) students reported being forced to act against their will; and 205 (7.1%) students reported being hurt physically by materials such as thumbtacks and pens at least once during the last 6 months. Concerning victimization by verbal bullying, 866 (29.9%) students reported being name called directly; 522 (18.0%) students reported being threatened verbally; 333 (11.5%) students reported being teased sexually; and 107 (3.7%) students reported being demanded money from someone at least once during the last 6 months. Concerning victimization by indirect bullying, 1,149 (39.7%) students reported being ignored and 800 (27.6%) students reported being excluded from a group of friends at least once during the last 6 months.

The mean prevalence of bullying and victimization in the last 6 months, stratified by gender, is presented in Table 5. The subject *t*-test comparison confirmed that physical bullying was significantly higher in boys ($\bar{X} = 2.03$, $SD = 3.23$) compared to that in girls ($\bar{X} = 0.70$, $SD = 1.86$), $t(2278) = -13.36$, $p < .001$. Verbal bullying was significantly higher in boys ($\bar{X} = 1.30$, $SD = 2.39$) compared to that in girls ($\bar{X} = 0.61$, $SD = 1.48$), $t(2382) = -2.95$, $p < .001$. Indirect bullying was higher in boys ($\bar{X} = 1.31$, $SD = 2.00$) than that in

Table 3
Prevalence of Bullying by Gender ($N = 2,923$)

	None		1 or 2 times		Sometimes		Once a week		2 or 3 times a week	
	n	%	n	%	n	%	n	%	n	%
Physical type										
Starting a fight										
Total	2402	82.6	216	7.4	173	5.9	28	1.0	90	3.1
Boys	1146	78.1	119	8.1	124	8.4	18	1.2	61	4.2
Girls	1256	87.2	97	6.7	49	3.4	10	.7	29	2.0
Hitting, kicking or choking someone										
Total	2025	69.7	378	13.0	316	10.9	48	1.7	138	4.8
Boys	803	54.8	274	18.7	248	16.9	32	2.2	109	7.4
Girls	1222	84.9	104	7.2	68	4.7	16	1.1	29	2.0
Taking, hiding, or damaging someone's belonging										
Total	2494	85.8	219	7.5	131	4.5	18	.6	44	1.5
Boys	1160	79.2	151	10.3	102	7.0	16	1.1	36	2.5
Girls	1334	92.6	68	4.7	29	2.0	2	.1	8	.6
Forcing someone to act against their will										
Total	2662	91.6	125	4.3	80	2.8	11	.4	27	.9
Boys	1277	87.1	92	6.3	66	4.5	9	.6	22	1.5
Girls	1385	96.2	33	2.3	14	1.0	2	.1	5	.4
Hurting someone physically by materials such as thumbtacks and pens										
Total	2775	95.5	50	1.7	48	1.7	7	.2	26	.9
Boys	1354	92.4	42	2.9	42	2.9	7	.5	20	1.4
Girls	1421	98.6	8	.6	6	.4	0	.0	6	.4
Verbal type										
Name-calling someone directly										
Total	2124	73.1	308	10.6	293	10.1	39	1.3	141	4.9
Boys	992	67.7	159	10.8	191	13.0	27	1.8	97	6.6
Girls	1132	78.7	149	10.4	102	7.1	12	.8	44	3.1
Threatening someone verbally										
Total	2563	88.1	168	5.8	103	3.5	20	.7	54	1.9
Boys	1229	83.7	110	7.5	74	5.0	15	1.0	40	2.7
Girls	1334	92.6	58	4.0	29	2.0	5	.4	14	1.0
Teasing someone sexually										
Total	2657	91.4	109	3.7	94	3.2	9	.3	38	1.3
Boys	1279	87.3	80	5.5	66	4.5	8	.6	32	2.2
Girls	1378	95.6	29	2.0	28	1.9	1	.1	6	.4
Demanding money from someone										
Total	2829	97.3	26	.9	31	1.1	6	.2	15	.5
Boys	1398	95.3	24	1.6	28	1.9	5	.3	12	.8
Girls	1431	99.4	2	.1	3	.2	1	.1	3	.2
Indirect type										
Ignoring someone										
Total	1723	59.3	566	19.5	398	13.7	50	1.7	169	5.8
Boys	871	59.4	265	18.1	203	13.8	30	2.0	98	6.7
Girls	852	59.2	301	20.9	195	13.6	20	1.4	71	4.9
Excluding someone from your group of friends										
Total	2005	69.1	447	15.4	288	9.9	37	1.3	123	4.2
Boys	1037	70.8	191	13.0	148	10.1	19	1.3	69	4.7
Girls	968	67.4	256	17.8	140	9.7	18	1.3	54	3.8

Note. 14 were missing data on starting a fight. 18 were missing data on hitting, kicking or choking someone. 17 were missing data on taking, hiding, or damaging someone's property. 18 were missing data on forcing someone to act against their will. 17 were missing data on hurting someone physically using materials such as thumbtacks and pens. 18 were missing data on name-calling someone directly. 15 were missing data on threaten someone verbally. 16 were missing data on teasing someone sexually. 16 were missing data on demanding money from someone. 17 were missing data on ignoring someone. 23 were missing data on excluding someone from your group of friends.

girls ($\bar{X} = 1.17$, $SD = 1.92$), but not significant. Victimization by physical bullying was also significantly higher in boys ($\bar{X} = 2.89$, $SD = 3.80$) compared to that in girls ($\bar{X} = 1.27$, $SD = 2.34$), $t(2367) = -13.66$, $p < .001$. Victimization by verbal bullying was significantly higher in boys ($\bar{X} = 1.58$, $SD = 2.66$)

Table 4
Prevalence of Victimization by Gender

	None		1 or 2 times		Sometimes		Once a week		2 or 3 times a week	
	N	%	N	%	N	%	N	%	N	%
Physical Type										
Being fought against										
Total	2030	70.0	407	14.0	291	10.0	41	1.4	133	4.6
Boys	919	62.8	237	16.2	182	12.4	28	1.9	97	6.6
Girls	1111	77.2	170	11.8	109	7.6	13	.9	36	2.5
Being hit, kicked or choked										
Total	1949	67.1	356	12.3	341	11.7	66	2.3	191	6.6
Boys	782	53.5	240	16.4	237	16.2	48	3.3	155	10.6
Girls	1167	81.0	116	8.0	104	7.2	18	1.2	36	2.5
Having property taken, hid or										
Total	2166	76.8	400	14.2	213	7.6	38	1.3	3	.1
Boys	967	66.1	240	16.4	159	10.9	29	2.0	67	4.6
Girls	1199	83.2	160	11.1	54	3.7	9	.6	19	1.3
Being forced to act against their will										
Total	2376	81.9	299	10.3	156	5.4	23	.8	47	1.6
Boys	1146	78.5	157	10.8	108	7.4	17	1.2	32	2.2
Girls	1230	85.7	142	9.9	43	3.0	6	.4	15	1.0
Being hurt physically by materials such as thumbtacks and pens										
Total	2694	92.9	96	3.3	59	2.0	11	.4	39	1.3
Boys	1297	88.8	73	5.0	51	3.5	9	.6	30	2.1
Girls	1397	97.1	23	1.6	8	.6	2	.1	9	.6
Verbal type										
Being name called directly										
Total	2034	70.1	370	12.8	277	9.6	45	1.6	174	6.0
Boys	964	65.9	193	13.2	157	10.7	28	1.9	120	8.2
Girls	1068	74.4	177	12.3	120	8.4	17	1.2	54	3.8
Being threatened verbally										
Total	2375	82.0	253	8.7	165	5.7	30	1.0	74	2.6
Boys	1125	77.1	147	10.1	114	7.8	18	1.2	56	3.8
Girls	1250	87.0	106	7.4	51	3.5	12	.8	18	1.3
Being teased sexually										
Total	2567	88.5	130	4.5	109	3.8	23	.8	71	2.4
Boys	1257	86.0	66	4.5	73	5.0	16	1.1	49	3.4
Girls	1310	91.0	64	4.4	36	2.5	7	.5	22	1.5
Being demanded of money										
Total	2796	96.3	48	1.7	39	1.3	3	.1	17	.6
Boys	1375	93.9	36	2.5	36	2.5	3	.2	14	1.0
Girls	1421	98.7	12	.8	3	.2	0	.0	3	.2
Indirect type										
Being ignored										
Total	1749	60.4	526	18.2	458	15.8	38	1.3	127	4.4
Boys	875	60.0	254	17.4	232	15.9	20	1.4	77	5.3
Girls	874	60.7	272	18.9	226	15.7	18	1.3	50	3.5
Being excluded from a group of friends										
Total	2096	72.4	368	12.7	303	10.5	23	.8	106	3.7
Boys	1080	74.0	159	10.9	146	10.0	15	1.0	59	4.0
Girls	1016	70.7	209	14.5	157	10.9	8	.6	47	3.3

Note. 21 were missing data on being fought against. 20 were missing data on being hit, kicked or choked. 20 were missing data on having property being taken, hid or damaged. 22 were missing data on being forced to act against their will. 24 were missing data on being hurt physically by materials such as thumbtacks and pens. 25 were missing data on being name called directly. 26 were missing data on being threatened verbally. 23 were missing data on being teased sexually. 20 were missing data on being demanded money from someone. 25 were missing data on being ignored. 27 were missing data on being excluded from a group of friends.

compared to that in girls ($\bar{X} = 0.86$, $SD = 1.74$), $t(2458) = -8.46$, $p < .001$. Victimization by indirect bullying was higher in boys ($\bar{X} = 1.23$, $SD = 1.93$) than that in girls ($\bar{X} = 1.17$, $SD = 1.79$), but not significant.

Table 5
Mean Prevalence of Each Type of Bullying and Victimization by Gender and Total

	Total		Boys		Girls		
	(n = 2837)		(n = 1424)		(n = 1413)		
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	
Bullying							
Physical type	1.37	2.72	2.03	3.23	.70	1.86	***
Verbal type	.96	2.02	1.30	2.39	.61	1.48	***
Indirect type	1.29	1.96	1.31	2.00	1.26	1.92	ns
Victimization							
Physical type	2.09	3.26	2.89	3.80	1.27	2.34	***
Verbal type	1.22	2.28	1.58	2.66	.86	1.74	***
Indirect type	1.20	1.86	1.23	1.93	1.17	1.79	ns

Note. Each variable was scored higher as the tendency was higher. Physical type includes the items of starting a fight, hitting, kicking or choking, taking, hiding or damaging property, forcing to do act against their will, and physically hurting by materials such as thumbtacks or pens. Verbal type includes the items of name-calling, threatening verbally, teasing sexually, and demanding money. Indirect type includes the items of ignoring and excluding. Maximum score of physical type = 20. Maximum score of verbal type = 16. Maximum score of indirect type = 8. Number of students who completed all questions on experiences on bullying and victimization was depicted. * $p < .05$. ** $p < .01$. *** $p < .001$.

The prevalence of bullying and victimization was 2 to 7 times higher in this study using the self-administered questionnaire by students compared to the annual report by the Japanese government using reports by school administrators (Japanese Ministry of Education, 2003). In this study, the highest prevalence of bullying was shown to be ignoring someone, followed by excluding someone from a group of friends and hitting, kicking, or choking someone, and then, name calling someone directly. The highest prevalence of victimization was being ignored, followed by being hit, kicked, or choked; being fought against; being name called directly; and then being excluded from a group of friends. The prevalence of bullying during 1 year reported by school administrators in the annual Japanese Ministry of Education, Culture, Sports, Science and Technology in 2002 (Japanese Ministry of Education, 2003) was 5.2% for ignoring someone, 12.9% for excluding someone from a group of friends, and 14.7% for violating someone. Bullying is often difficult to observe and measure in an accurate manner. Teacher designations are dependent on personal characteristics that are difficult to separate or consider during data interpretation. Self-reporting measures seem to be the best possible method currently available to assess bullying (Griffin et al., 2001).

The prevalence of indirect bullying was considerably high, as well as physical and verbal bullying. Physical and verbal bullying in boys was higher

than that in girls. This tendency was similar to other studies (Bjorkqvist et al., 1992; Osterman et al., 1998). There was no significant difference in indirect bullying by gender, although the previous studies in Western-culture countries reported that it was performed more by girls than by boys (Bjorkqvist et al., 1992; Crick & Grotpeter, 1995; Osterman et al., 1998). The use of indirect methods is dependent on the existence of a social network that facilitates the means for inflicting pain on one's enemy. Girls form tighter groups and develop more pairs that facilitate the use of manipulation of friendship patterns as an aggressive strategy compared to boys in Western-culture countries (Bjorkqvist et al., 1992). On the other hand, an interdependent view of self may facilitate the usage of indirect aggression, not only by girls but also by boys in collective cultures such as in Japan, where the values of interpersonal harmony, conformity, and cooperation are emphasized in group activities and group goals and by seeking meaning by reference to the thoughts and feelings of others (Markus & Kitayama, 1991). Indirect bullying as social isolation from peer relationships may be perceived as a serious problem, not only by girls but also by boys.

Preliminary Analyses

The correlations among the variables are shown in Table 6. Almost all correlations were significant, except between support by close friends and impulsiveness, between support by close friends and euphemistic thinking, and between victimization by indirect bullying and euphemistic thinking. The three types of bullying showed higher and positive correlation with each other. The correlations with the psychosocial variables showed the same direction across all three types of bullying. Each type of bullying was positively correlated with the number of friends who performed bullying; experience of either physical, verbal, or indirect types of victimization; impulsiveness, aggressiveness; euphemistic thinking; and displacement of responsibility. It was negatively correlated with parental concern for student's daily life, parental concern for details of student's life, open communication with parents, pride at school, support by school teachers, support by close friends, academic performance, appropriate relationship with classmates, serious attitude in school, self-efficacy in interpersonal relationships, self-efficacy in overcoming difficulty, self-efficacy in problem solving, and self-assertive efficacy against bullying.

Table 6
Pearson Correlation Coefficients Among Bullying and Psychosocial Variables (N=2,801)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
1 Physical bullying																										
2 Verbal bullying	.78																									
3 Indirect bullying	.52	.46																								
4 Parental concern for details of student's life			.52																							
5 Parental communication with parents				.57																						
6 Open communication with parents					.57																					
7 Academic performance						.24																				
8 Appropriate relationship with classmates							.39																			
9 Serious attitude in school								.45																		
10 Pride at school									.26																	
11 Support by school teachers										.57																
12 Support by close friends											.31															
13 Number of friends who bully												.31														
14 Victimization by physical bullying													.31													
15 Victimization by verbal bullying														.31												
16 Victimization by indirect bullying															.31											
17 Impulsiveness																	.48									
18 Aggressiveness																		.48								
19 Self-assertive efficacy against bullying																			.48							
20 Self-efficacy in interpersonal relationship																				.48						
21 Self-efficacy in problem solving																					.48					
22 Self-efficacy in self-control																						.48				
23 Self-efficacy in problem-solving																							.48			
24 Euphemistic thinking																								.48		
25 Displacement of responsibility																									.48	

Note. The most correlations were significant ($p < .01$). Each variable was scored higher as the tendency was higher. Physical bullying and victimization include the items of starting a fight, hitting, kicking or choking, taking, hiding or damaging property, forcing to act against their will, and hurting physically by materials such as thumbtacks and pens. Verbal bullying and victimization by verbal bullying include the items of name-calling, threatening verbally, teasing sexually, and demanding money. Indirect bullying and victimization by indirect bullying include the items of ignoring and excluding.

Multivariate Analyses

The associations between psychosocial variables and three different types of bullying using setwise hierarchical multiple regressions analyses are shown in Table 7. For each regression, the independent variables are, in order of entry: set 1, the demographic variable (i.e., gender); Set 2, the demographic variable and the perceived environmental variables (i.e., parental concern for student's daily life, parental concern for details of student's life, open communication with parents, academic performance, appropriate relationships with classmate, serious attitude in school, fun in school, support by school teachers, support by close friends, number of friends who bully); and Set 3, the demographic variable, the perceived environmental variables, and individual variables (i.e., experiences of victimization by physical bullying, verbal bullying, and indirect bullying, impulsiveness, aggressiveness, self-assertive efficacy against bullying, self-efficacy in interpersonal relationships, self-efficacy in overcoming difficulty, self-efficacy in self-control, self-efficacy in problem solving, euphemistic thinking, and displacement of responsibility).

Physical bullying. In Set 1, gender was significant, ($\beta = .24; p < .001$) and accounted for 5.9% of the variance in physical bullying. In Set 2, gender ($\beta = .21; p < .001$), parental concern for student's daily life ($\beta = -.06; p < .01$), serious attitude in school ($\beta = -.17; p < .001$), and number of friends who bully ($\beta = .27; p < .001$) were associated with physical bullying. These variables accounted for 18.8% of the variance in physical bullying. In Set 3, gender ($\beta = .12; p < .001$), serious attitude in school ($\beta = -.07; p < .001$), support by school teachers ($\beta = .05; p < .01$), number of friends who bully ($\beta = .11; p < .001$), victimization by physical bullying ($\beta = .27; p < .001$), victimization by verbal bullying ($\beta = .10; p < .001$), impulsiveness ($\beta = .07; p < .001$), aggressiveness ($\beta = .22; p < .001$), self-efficacy against bullying ($\beta = -.07; p < .001$), and euphemistic thinking ($\beta = .07; p < .001$) were significantly associated with physical bullying. In this model, these variables accounted for 40.0% of the variance in physical bullying.

Verbal bullying. In Set 1, gender was significant ($\beta = .18; p < .001$) and accounted for 3.1% of the variance in verbal bullying. In Set 2, gender ($\beta = .15; p < .001$), serious attitude in school ($\beta = -.18; p < .001$), support by school teachers ($\beta = -.05; p < .05$), and number of friends who bully ($\beta = .27; p < .001$) were associated with verbal bullying. In this model, these variables accounted for 16.5% of the variance in verbal bullying ($p < .001$). In Set 3,

gender ($\beta = .08; p < .001$), open communication with parents ($\beta = .06; p < .001$), serious attitude in school ($\beta = -.08; p < .001$), number of friends who perform bullying ($\beta = .11; p < .001$), victimization by physical bullying ($\beta = .06; p < .05$), victimization by verbal bullying ($\beta = .30; p < .001$), higher impulsiveness ($\beta = .08; p < .001$), aggressiveness ($\beta = .19; p < .001$), self-efficacy against bullying ($\beta = -.09; p < .001$), and euphemistic thinking ($\beta = .10; p < .001$) were significantly associated with verbal bullying. In this model, these variables accounted for 37.2% of the variance in verbal bullying ($p < .001$).

Indirect bullying. In Set 1, gender was not significantly associated with indirect bullying. In Set 2, higher parental concern for student's daily life ($\beta = .06; p < .05$), parental concern for details of student's life ($\beta = -.07; p < .01$), serious attitude in school ($\beta = -.15; p < .001$), support by school teachers ($\beta = -.08; p < .001$), and number of friends who bully ($\beta = .24; p < .001$) were associated with indirect bullying. In this model, these variables accounted for 12.1% of the variance in indirect bullying. In Set 3, parental concern for student's daily life ($\beta = .07; p < .01$), parental concern for details of student's life ($\beta = -.07; p < .01$), open communication with parents ($\beta = .05; p < .05$), serious attitude in school ($\beta = -.06; p < .01$), number of friends who bully ($\beta = .13; p < .001$), victimization by indirect bullying ($\beta = .21; p < .001$), higher impulsiveness ($\beta = .07; p < .01$), aggressiveness ($\beta = .17; p < .001$), self-efficacy against bullying ($\beta = .08; p < .001$), lower self-efficacy in self-control ($\beta = -.06; p < .01$), and euphemistic thinking ($\beta = .12; p < .001$) were significantly associated with indirect bullying. In this model, these variables accounted for 25.1% of the variance in indirect bullying.

Path Analyses

Path analyses were performed as a way to show the hypothesized relationships among the variables, based on the finding of significance in the final regression model. Each path analysis was used to evaluate the direct and indirect effects of individual variables on each type of bullying. Model estimations were conducted with Amos 4.0 (Arbuckle & Wothke, 1995), using maximum likelihood estimation. Model fit was assessed with the chi-square statistic, RMSEA, the comparative fit index (CFI), and the Tucker-Lewis index (TLI; Bollen & Long, 1993). Generally, an RMSEA of .05 or less is an indicator of acceptable fit, and the model is better when CFI and TLI are nearer to 1.0 (Bollen & Long, 1993).

Table 7
 Summary of Setwise Hierarchical Regression Analyses for Psychosocial Variables Predicting Physical, Verbal, and Indirect Bullying (N= 2301)

Variable	Physical bullying			Verbal bullying			Indirect bullying		
	SEB	B		SEB	B		SEB	B	
Set 1									
Gender (female 0, male 1)	1.28	.11	.24 ***	.09	.08	.18 ***	.03	.08	.01
Set 2									
Gender (female 0, male 1)	1.12	.10	.21 ***	.59	.08	.15 ***			
Parental concern for student's daily life	-.04	.01	-.06 **				.03	.01	.06 *
Parental concern for details of student's life							-.05	.02	-.07 **
Open communication with parents									
Academic performance									
Appropriate relationships with classmates									
Serious attitude in school	-.16	.02	-.17 ***	-.13	.01	-.18 ***	-.10	.02	-.15 ***
Fun in school									
Support by school teachers				-.01	.01	-.05 *	-.02	.01	-.08 ***
Support by close friends									
Number of friends who perform bullying	.75	.05	.27 ***	.56	.04	.27 ***	.49	.04	.24 ***
Set 3									
Gender	.61	.09	.12 ***	.32	.07	.08 ***			
Parental concern for student's daily life							.04	.01	.07 **
Parental concern for details of student's life							-.04	.02	-.07 **
Open communication with parents				.02	.01	.06 ***	.02	.01	.05 *
Academic performance									
Appropriate relationships with classmates									
Serious attitude in school	-.06	.02	-.07 ***	-.05	.01	-.08 ***	-.04	.01	-.06 **
Pride at school									
Support by school teachers	.02	.01	.05 **						
Support by close friends									
Number of friends who perform bullying	.30	.05	.11 ***	.22	.04	.11 ***	.26	.04	.13 ***
Victimization by physical bullying	.22	.02	.27 ***	.03	.02	.06 *			
Victimization by verbal bullying	.12	.03	.10 ***	.25	.02	.30 ***			
Victimization by indirect bullying									
Impulsiveness	.07	.02	.07 ***	.06	.02	.08 ***	.22	.02	.21 ***
Aggressiveness	.21	.02	.22 ***	.14	.01	.19 ***	.05	.02	.07 **
Self-assertive efficacy against bullying	-.17	.04	-.07 ***	-.15	.03	-.09 ***	-.12	.02	-.17 ***
Self-efficacy in interpersonal relationship							-.14	.04	-.08 ***
Self-efficacy in overcoming difficulty									
Self-efficacy in self-control							-.04	.01	-.06 **
Self-efficacy in problem-solving									
Euphemistic thinking	.03	.01	.07 ***	.03	.01	.10 ***	.04	.01	.12 ***
Displacement of responsibility									

Note. In the analysis, gender was coded as 0=girl and 1=boy. Each variable was scored higher as the tendency was higher. showed unstandardized regression coefficient. B showed standardized regression coefficient.

* p < .05, ** p < .01, *** p < .001.

To explore whether individual factors are associated directly with or indirectly through perceived environmental factors to the three different types of bullying, path analyses were performed. The model was estimated using the variables that were significantly associated to each type of bullying in the final model (Set 3) of the setwise hierarchical multiple regression analysis. Parental concern for student's daily life, open communication with parents, and support by school teachers were excluded from the model because these variables showed inconsistent direction of the association to bullying among Set 1, Set 2, and Set 3 of the setwise hierarchical multiple regression analyses and the correlation analyses.

Physical bullying. In the path model for physical bullying, the standardized path coefficients are shown in Figure 1. This model fit the data well, $\chi^2(1, N=2,301) = 1.68, p = .20$ (CFI = 1.00, TLI = .995, RMSEA = .017). All of the individual and perceived environmental variables were significantly associated with physical bullying in the direct paths. Victimization by physical bullying, victimization by verbal bullying, aggressiveness, and self-

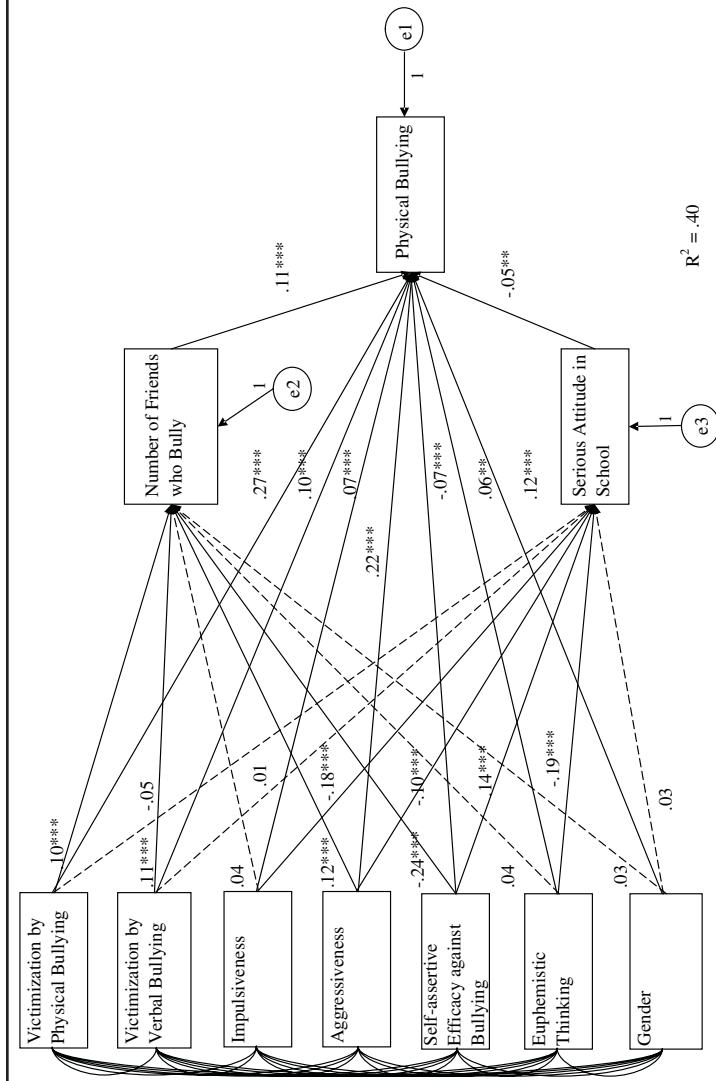


Figure 1: Hypothetical path model with parameter estimates for the prediction of physical bullying.
 NOTE: $\chi^2 = (1, N = 2,301) = 1.68, p = .20$; RMSEA = .017, CFI = 1.00, TLI = .995; e1 to e3 = unmeasured errors associated with each of the predicted variables in the model. Numbers next to single-headed arrows correspond to standardized regression weights.
 * $p < .05$. ** $p < .01$. *** $p < .001$.

assertive efficacy against bullying were significantly associated with physical bullying in the indirect path through the variables, number of friends who bully. Impulsiveness, aggressiveness, self-assertive efficacy against bullying, and euphemistic thinking were significantly associated with physical bullying in the indirect path through the variable, serious attitude in school. All of the individual variables showed stronger effects in the direct paths to physical bullying than in the indirect paths.

Verbal bullying. In the path model for verbal bullying, the standardized path coefficients are shown in Figure 2. This model fit the data well, $\chi^2(1, N = 2,301) = 1.68, p = .20$ (CFI = 1.00, TLI = .994, RMSEA = .017). All of the individual and perceived environmental variables were significantly associated with verbal bullying in the direct paths. Victimization by physical bullying, victimization by verbal bullying, aggressiveness, and self-assertive efficacy against bullying were significantly associated with verbal bullying in the indirect path through the variable, number of friends who bully. Impulsiveness, aggressiveness, self-assertive efficacy against bullying, and euphemistic thinking were significantly associated with verbal bullying in the indirect path through the variable, less serious attitude in school. All of the individual variables showed stronger effects in the direct paths to verbal bullying than in the indirect paths.

Indirect bullying. In the path model for indirect bullying, the initial model specification did not fit the data well, $\chi^2(3, N = 2,301) = 68.46, p < .001$ (CFI = .982, TLI = .724, RMSEA = .097). Therefore, the model was reestimated after deleting a nonsignificant mediator, parental concern for details of student's life. Figure 3 presents the final model, which fits the data well, $\chi^2(1, N = 2,301) = 2.76, p = .10$ (CFI = .999, TLI = .981, RMSEA = .028). All of the individual and perceived environmental variables were significantly associated with indirect bullying in the direct paths. Victimization by indirect bullying, aggressiveness, and self-assertive efficacy against bullying were significantly associated with indirect bullying in the indirect path through the variable, number of friends who bully. Impulsiveness, aggressiveness, self-assertive efficacy against bullying, self-efficacy in self-control, and euphemistic thinking were significantly associated with indirect bullying in the indirect path through the variable, serious attitude in school. All of the individual variables showed stronger effects in the direct paths to indirect bullying than in the indirect paths.

Then, the path model for all three types of bullying was developed to use common variables associated with each of the three types of bullying. The

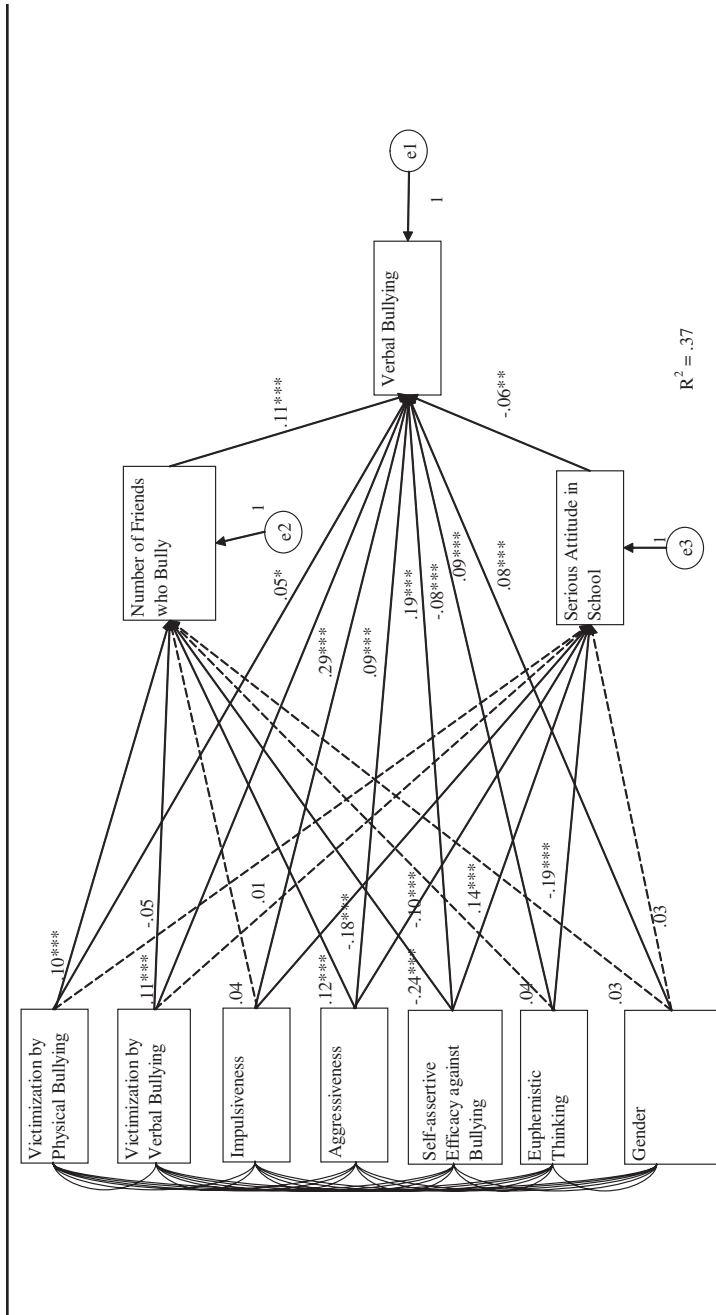


Figure 2: Hypothetical path model with parameter estimates for the prediction of verbal bullying.
 NOTE: $\chi^2(1, N = 2,301) = 1.68, p = .20$; RMSEA = .017; CFI = 1.00, TLI = .994; E1 TO E3 = UNMEASURED ERRORS ASSOCIATED WITH EACH OF THE PREDICTED VARIABLES IN THE MODEL. NUMBERS NEXT TO SINGLE-HEADED ARROWS CORRESPOND TO STANDARDIZED REGRESSION WEIGHTS.
 * $p < .05$. ** $p < .01$. *** $p < .001$.

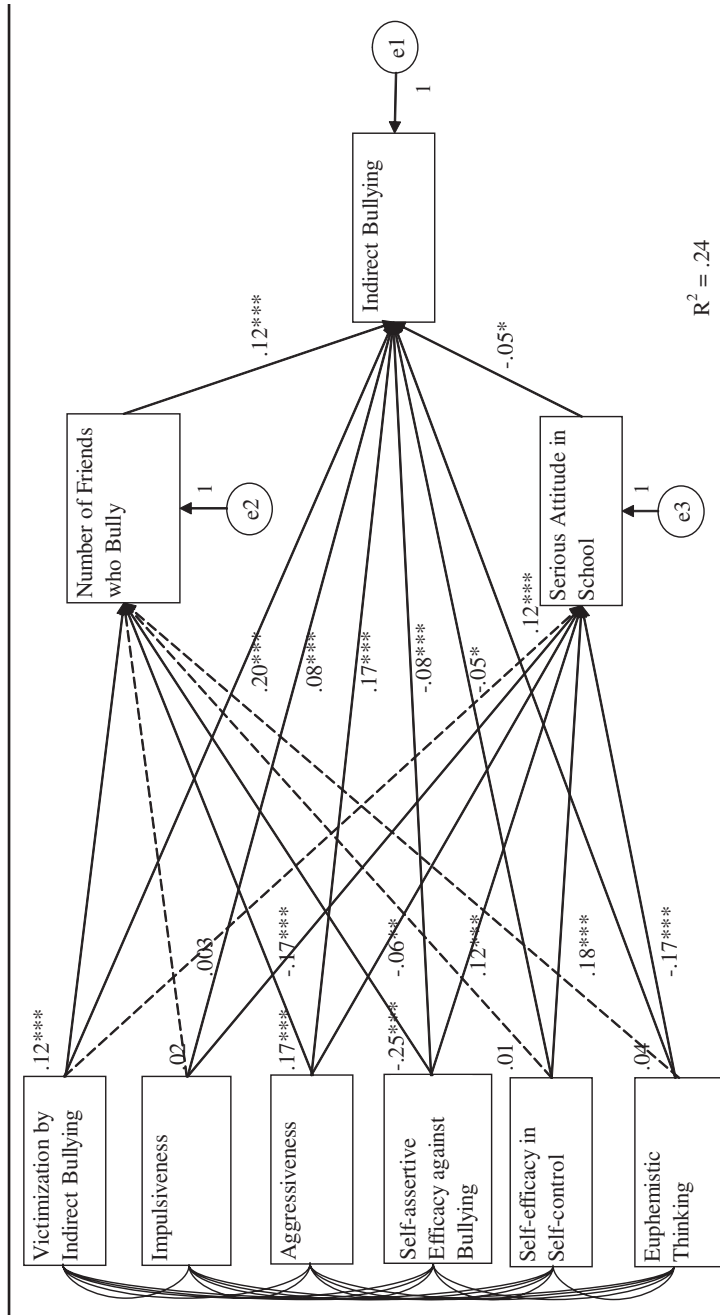


Figure 3: Hypothetical path model with parameter estimates for the prediction of indirect bullying.
 NOTE: $\chi^2(1, N = 2,301) = 2.76, p = .10$; RMSEA = .028, CFI = .999, TLI = .981; e1 to e3 = unmeasured errors associated with each of the predicted variables in the model. Numbers next to single-headed arrows correspond to standardized regression weights.
 * $p < .05$. ** $p < .01$. *** $p < .001$.

model was not found to fit the data adequately, $\chi^2(32, N = 2301) = 435.17$, $p < .001$ (CFI = .96; TLI = .91; RMSEA = .07).

In our population of Japanese junior high school students, we identified substantial overlapping of psychosocial risk factors associated with the three different types of bullying. More deviant peer influence, more experience of being bullied, less serious attitude in school, less self-assertive efficacy against bullying, poor self-control of aggressiveness and impulsiveness, and euphemistic thinking were commonly associated with physical, verbal, and indirect bullying.

The associations between involvement of bullying and deviant peer influence, including the number of friends who bully and self-assertive efficacy to resist peer pressure, were consistent with the findings of other studies on adolescent bullying and aggressive behaviors (Bandura, Caprara, Barbaranelli, Pastorelli, & Regalia, 2001; Caprara et al., 1998; Haynie et al.; Bandura et al., 2001; Jessor, van den Bos, Vanderryn, Costa, & Trubin, 1995). Bullies typically have some friendships with other aggressive peers (Green, 2000). Individuals who enter adolescence with a lack of social skills and who endorse antisocial attitudes because of inadequate peer socialization are likely to associate with peers who have similar characteristics (Snyder et al., 1986).

The association between involvement of bullying and self-control of aggressiveness and impulsiveness was consistent with the findings of other studies on adolescent bullying and aggressive behaviors (Colder & Stice, 1998; Crick & Grotpeter, 1995; Haynie et al., 2001). Adolescents who show poor self-control may be more vulnerable to peer pressure to engage in aggressive behaviors.

The association between involvement of bullying and moral disengagement was consistent with the findings of other studies on adolescent aggressive behaviors (Bandura et al., 1996a, 2001). Students who perform bullying frequently may perceive more bullying, teasing, insulting, slapping, and shoving as acceptable behavior depending on the situation.

The association between involvement of bullying and less serious attitudes in schools was also reported by other studies on adolescent bullying and aggressive behaviors (Haynie et al., 2001; Jessor et al., 1995; Simons-Morton, Crump, Haynie, & Saylor, 1999). School adjustment is associated with school performance and school bonding (Pyper et al., 1987). Positive attitudes toward school may be protective against bullying.

Victimization by both physical and verbal bullying was associated with physical and verbal bullying, whereas victimization by indirect bullying was associated with indirect bullying. Victims of bullying may respond using the same methods with which they were bullied. Providing a model of thought

and action is one of the most effective ways to convey information about the rules for producing new behavior (Bandura, 1986).

Less self-efficacy in self-control was associated with indirect bullying. Students who perform indirect bullying frequently may try to cope by ignoring and excluding peers because they may not have the confidence to stay in control when telling someone how they feel or in getting angry when arguing with their peers.

Perceived environmental variables such as parenting and teacher support were inconsistently associated with bullying depending on the methods of analyses. Generally, these variables were negatively associated with aggressive behaviors in previous researches (Caprara et al., 1998; Haynie et al., 2001; Snyder et al., 1986). The inconsistencies in this study may be because of the measurement of analyses. Another possible reason is that some teachers and parents or guardians may try to support bullies because of their unfavorable psychological functioning.

Self-control of aggressiveness, self-assertive efficacy against bullying, and victimization by bullying were associated indirectly through deviant peer influence to all types of bullying. Self-control on aggressiveness, self-assertive efficacy against bullying, self-control in impulsiveness, and euphemistic thinking were associated indirectly through serious attitude in school to all types of bullying. Deviant peer influence and serious attitude in school can function not only as direct influences but also as mediators of bullying. Promoting school bonding by skill training in areas of social interaction would affect children's attitudes positively toward school and their behavior at school. Self-control of aggressiveness and impulsiveness, self-assertive efficacy against bullying, and euphemistic thinking should be major targets of the psychoeducational approach to prevent bullying. One study (Paetsch & Bertand, 1997) reported a reduction in adolescent problem behavior by altering the relationship between the adolescent and deviant peers and increasing the ability to resist peer pressure.

SUMMARY AND CONCLUSION

In this study, we found that several factors associated with each type of bullying may be amenable to change. These various factors are environmental as well as personal beliefs and attitudes and are not immutable characteristics or traits. Therefore, interventions focused on these modifiable common factors could be effective in the prevention of adolescent bullying. Currently, we are implementing a problem behavior prevention program titled "Successful Self," based on the Going Places Program (Simons-Morton, Haynie,

Saylor, Crump, & Chen, 2004, 2005), which builds on the work of primary prevention studies that have attempted to prevent problem behavior by increasing school bonding through skills training. The curriculum is based on social development (Hirschi, 1969/2002) and social-learning (Bandura, 1986) theories and data from the survey presented in this article. The curriculum consists of four class lessons offered in junior high schools. The objectives of the curriculum are to foster skills and social competence through skills training and to influence perceived social norms about school conduct and problem behavior. Problem solving, self-management and self-control skills, communication, peer resistance, and conflict resolution are emphasized. A typical lesson begins with the objectives for the class and the introduction of a new skill, followed by activities using worksheets in which common problems are presented. Students then practice problem solving and use a variety of skills in various interactive group activities and role plays. Thus, the students obtain substantial practice to improve their skills for healthy development.

It is important to acknowledge several limitations of this study. Our results suggested that there are at least some differences between bullying in Western culture countries and of that in Japan concerning gender differences in indirect bullying. On the other hand, we found that similar psychosocial risk factors influenced physical and verbal bullying in both Western-culture countries and Japan. However, it is not clear whether the same psychosocial risk factors are associated with indirect bullying in Western-culture countries. Furthermore, the usefulness of these findings depends on the validity of self-reports of bullying and victimization by the youths responding to the questionnaires. Self-reported data is fundamental to behavior research, yet validation of self-reported bullying is difficult, and validation studies are few. Although items concerning bullying were selected from the interviews with junior high school students and from previous research, it is difficult to distinguish between aggressive behaviors such as quarrels and fights by students of near or the same strength and bullying behaviors following any definition (Japanese Ministry of Education, 2003; Olweus, 1993). Indeed, it is difficult to achieve consensus concerning what bullying is between students and adults and between the standpoint of being bullied and that of the bystander (Ando et al., 2003; Boulton, 1997). Also, it is not possible in this cross-sectional study and these path analyses to determine whether the risk factors proceeded the development of bullying or vice versa. However, this cross-sectional study can provide useful information about potential causes of initiation and then suggest objectives for preventive intervention. More studies including longitudinal research with multiple repeated measures of

behaviors are needed. Despite limitations, the study is one of the first to identify psychosocial risk factors involved in bullying in Japan.

In conclusion, the study found that individual characteristics as well as relationships with peers were associated with all three types of bullying in Japanese junior high school students. Victimization by direct bullying was associated with direct bullying, whereas that by indirect bullying was associated with indirect bullying. It is important to implement intervention and to focus on psychosocial factors such as peer influence, self-control, and self-efficacy.

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