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## Suicidal ideation and bullying among Australian secondary school students

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### Abstract

*Bully-victim problems at school may have negative effects on students' mental health. Adolescents (N = 845) attending schools in South Australia anonymously answered questionnaires that included a measure of suicidal ideation. Student involvement in bully-victim problems at school and the emotional reaction to being victimised by peers were also examined. Self-report but not peer nomination indicated that high levels of peer victimisation and relatively ineffective coping responses were independently and significantly associated with suicidal ideation. Implications for school policies and practices to address the issue of youth suicide are discussed.*

**Keywords:** *adolescence, bullying, suicide, schools*

### Bullying as a risk factor

The suicide rate among young Australians has begun to stabilise at a level approximately three times higher, however, than it was 3 decades ago. Considerable attention to the problem is reflected in the abundant research in many countries into causes and risk factors associated with youth suicide, extensively reviewed by Baume (1996). A recent survey of school-based suicide prevention programs, however, raised serious questions about their effectiveness in reducing actual adolescent suicidal behaviour (Mazza, 1997). Reasons for this failure to make any clear impact on the problem may be twofold: Either current research findings have not facilitated intervention efforts or research has yet to identify relevant factors that can be effectively manipulated to reduce youth suicide (Garland & Zigler, 1993).

Peer victimisation, or bullying in schools, is one possible contributory factor that appears underresearched in the complex, multifaceted issue of suicide. Many other factors that have been identified as potential contributors to self-destructive behaviour include psychiatric illness, poor communication skills, drug use, helplessness, problems of sexual identity, sexual abuse and neglect, as well as the availability of the means of killing oneself. Rigby (1998) suggested that continual bullying can affect the mental health of

schoolchildren. Moreover, interventions to counter bullying in schools have been effective (Olweus, 1993; Smith & Sharp, 1994). Therefore, any association between adverse peer relations in Australian schools, more particularly involvement in bully-victim problems, and comparatively high levels of suicidal ideation needs to be clarified. If a clear association is established in Australian schools, the contribution of effective anti-bullying policies and procedures towards suicide reduction needs evaluation.

Case studies and anecdotes after schoolchildren have suicided or attempted suicide have cited bullying as an antecedent. Early reports of child suicide after being bullied in Norway (Olweus, 1993) were followed by reports in the United Kingdom, the United States, Japan, and Australia (Rigby, 1997b). Media-presented case studies, however, often generate questionable conclusions. For example, a 17-year-old male suicided by hanging himself shortly after leaving his Western Australian school (Rigby, 1997b). His suicide note and family reports indicated continual bullying during his schooldays and desperate misery about the experience. Examination of the case history revealed other possibly related factors, including an obsession with achieving – and failing to achieve – high standards in his school subjects and a recent rejection by a young woman with whom he had formed an intimate relationship. The contribution, if any, of a specific factor is difficult to identify because suicide is typically a consequence of many inter-related factors.

Students who are repeatedly victimised by their peers at school have or acquire characteristics that may render them more prone to suicide than others. In a growing number of large-scale surveys, victimised children show low self-esteem and value themselves less highly (Boulton & Underwood, 1992; Olweus, 1992; O'Moore & Hillery, 1991; Rigby & Slee, 1993b). A causal relationship between repeated bullying at school and low self-esteem has been suggested in a recent Australian study of 9,285 boys and 6,847 girls between the ages of 13 and 18 years (Rigby, 1997a). Students completing Rigby & Slee's (1993a) Peer Relations Questionnaire (PRQ) were asked how they felt about themselves after being bullied by another student. Some 43.5% of girls and 25.5% of boys admitted to feeling worse. Increasing levels of bullying, from "sometimes" to "at least once a week", induced twice as many admissions. Thus, more children reported lowered self-esteem for increments of reported victimisation. For such children, bullying at school appears to be a demoralising and humiliating experience.

In severe bullying and suicide, the experience of repeated public humiliation has been connected to loss of esteem (Pfeffer, 1990): Humiliation is "probably one of the most critical factors in precipitating suicidal ideation arising from interpersonal problems...Feelings of disgrace and public disparagement may shatter a youngster's healthy sense of narcissism and sense of identity, and loss of a basic sense of one's worthwhileness is a powerful force to increase thoughts of self-annihilation" (p. 81).

The relationship between suicidal ideation and experience of bullying has

yet to be fully examined. Two studies have directly examined links between adverse peer relations and suicide proneness among adolescents. An early study of American adolescents (aged 13 to 19 years) compared those hospitalised as a result of attempting suicide with hospitalised nonsuicidals and a nonhospitalised control group (Topol & Reznikoff, 1982). More "peer relations problems" were found on the Mooney Problem Check List (Mooney & Gordon, 1950), which includes bullying as well as other interpersonal difficulties. A more recent study compared the kinds of life events experienced in the last 12 months by Canadian college students (mean age of 18 years) identified through questionnaires as experiencing "serious suicidal ideation" and a nonsuicidal group (Tousignant & Hannigan, 1993). Being rejected by a group and being the victim of a physical attack were among the events experienced significantly more often by the suicidal group.

Individual reaction to treatment meted out by others, more than the treatment itself, may determine suicidal state of mind. Children respond to bullying by peers in a variety of ways, and their modes of responding to victimisation show corresponding subjective states. Recently, children in Finland were differentiated into those who were nonchalant, fought back, or acted in a helpless or submissive way (Salmivalli, Kaukianen, & Lagerspetz, 1996). Similarly, Australian primary and secondary schoolchildren, when sometimes bullied at school, reported that they were "not bothered" by it or became angry or became sad and miserable (Rigby, 1997a).

Perpetrators may also be troubled individuals. Victims of the bullies are the main focus of concern about bully-victim mental health problems at school. Australian primary and secondary school students who repeatedly bully others, however, have higher than average levels of depression (Slee, 1995; Zubrick et al., 1997). Given that chronic mood disorders can be associated with suicidal tendencies (Baume, 1997), children who persistently bully others may be at greater risk of suicidal ideation and suicidal behaviour than children uninvolved as either bullies or victims. A minority of students often bully others and are themselves frequently victimised by their peers. Scandinavian bully-and-victim data constitute about 6% of those seriously bullied (Olweus, 1985). It is unclear what risk of suicide applies to these children.

Approximately one Australian child in seven reports being bullied by peers on a weekly basis (Rigby, 1997a). Bullying may be physical or psychological and undertaken by an individual or by a group. Bullying involves unprovoked aggressive behaviour in situations of clear power imbalance. It is distinct from interpersonal aggression, which can include fighting or quarrelling between children of roughly equal strength or power.

Self-reports have been the usual method of bully-victim identification (Olweus, 1993; Smith & Sharp, 1994). Peer nomination, however, may provide a more objective method that avoids subjective bias on the part of bullies and victims. Yet incomplete information may be obtained from peer nominations, because bullying is often covert and hard to identify. Confidence in findings, therefore, increases when results from the use of both methods concur.

Suicidal ideation (i.e., the tendency to think about taking one's life) and completed suicide have been conceived as lying on the continuum of suicidal propensity (Chan, 1993). Most people who think of suicide do not attempt to take their own lives; among those that do, only a proportion are successful. Insofar as suicidal ideation is a precursor of suicide, its reduction can reasonably be regarded as a step towards reducing the problem. Reported incidence of suicidal ideation among young people has varied widely from study to study, depending upon geographical location and the nature of the questions (Garrison, Addy, Jackson, McKeown, & Waller, 1991). The South Australian incidence of suicidal ideation among adolescent schoolchildren aged 12 to 17 years, indexed by agreement with the statement, "I have thoughts about suicide", was 23.2% (Martin, Roeger, Dadds, & Allison, 1997), and 6.4% reported that they had actually tried to kill themselves.

Finally, differences between the sexes may affect the relationship between youth suicide and bullying. Females, although less likely to deliberately kill themselves, more frequently report depression and suicidal ideation (Stoppard, 1993). Furthermore, girls and boys tend to experience different forms of bullying. For example, girls tend to experience more indirect forms of aggression, such as exclusion (Smith & Sharp, 1994). The motivations for girls to engage in bullying others may also be different and have different implications for their mental health.

### **Hypotheses**

- A. Higher levels of suicidal ideation may be associated with (a) being bullied by other students and (b) bullying other students at school.
- B. Lower levels of suicidal ideation may be associated with a "not bothered" reaction to bullying.
- C. Suicidal ideation may be increased independently by (a) the frequency of peer victimisation and (b) emotional reactions to being bullied.

### **Method**

#### **Participants**

Subjects were from three urban coeducational secondary schools in Adelaide. The 450 boys and 395 girls, ranging from 12 to 16 years ( $M = 13.97$  years,  $SD = .74$ ) answered questionnaires anonymously in class.

#### **Measures**

The Suicidal Ideation Scale assesses proneness to think about suicide. It comprises four items from the Goldberg Health Questionnaire (GHQ; Goldberg & Williams, 1988): "Felt that life isn't worth living", "Thought of the possibility that you might do away with yourself", "Found yourself wishing you were dead and away from it all", and "Found the idea of taking your own life kept coming into your mind." Students indicated how frequently "over the last few weeks" they had had such thoughts. A 4-point scale is used to record frequency for each item, and scores are summed. An earlier study

(Rigby, 1994b), which found high levels of reliability (Cronbach alpha exceeding .90), supported GHQ's appropriateness as a general measure of the mental health of Australian adolescent schoolchildren. The reliability of the Suicidal Ideation subscale of the GHQ derived from students in this study is reported in the Results section.

Measures of involvement in bullying were derived from students' self-reports and student reports about other students. In these questionnaires, bullying was defined as occurring when a more powerful person or group deliberately hurts somebody: Examples were provided of verbal and indirect forms such as exclusion as well as physical means (Rigby, 1996).

Students reported how frequently they were bullied during the school year, using six response categories ranging from "every day" to "never." They were also asked to indicate whether they had bullied other students, singly and as part of a group and, if so, whether "often" or "sometimes." In addition, two short multi-item scales, partly based on measures developed by Rigby & Slee (1993a), assessed degree of involvement at the school as a victim of peer bullying and as a bully. One scale of 6 items assessed the tendency for children to engage in bullying others, and the other scale of 5 items assessed the tendency to be victimised by others. Respondents were asked to indicate how often statements were true of them: never, once in a while, pretty often, and very often. Table 1 shows these items and the results of a factor analysis that indicates the extent to which the measures proved to be factorially independent with this sample.

Peer assessment comprised a list of 16 descriptive items about same-sex members of the class. Four bullying items were "enjoys upsetting others", "always teasing others", "shows others he's (or she's) the boss", and "likes to scare others." Four victim items were "gets picked on a lot", "kids make fun of him (her)", "gets hit and pushed around", and "gets left out by others." Eight filler items included, for example, "always losing things." Students received scores on each of the 8 relevant items according to the numbers of students, ranging from 5 to 12, who indicated that they fitted the description, divided by the number of students involved in making the judgements. These standardised bully and victim scores ranged from zero (no nominations) to four (nominated by all raters). Categories of bullies, victims, bully-victims, and "others" were later derived from these scores.

A single item assessed reaction to being bullied. Students who had been bullied at school indicated whether they (a) were not really bothered by it, (b) felt mostly angry about it, or (c) felt mostly sad and miserable.

## Results

The reliabilities of the scales based on self-reports with a sample of students who completed all items of the scales ( $n = 788$ ) was found to be satisfactory with Cronbach alpha values of .92 for the Suicidal Ideation Scale, .80 for the Bully Scale, and .87 for the Victim Scale.

Confirmation of the factorial independence of the two measures was

sought, because item composition of the Bully Scale and the Victim Scale differed somewhat from the earlier version (Rigby & Slee, 1993a). Separate analyses were performed for each sex, given the possibly different nature of involvement in bullying by girls and boys (Bjorkqvist, Lagerspetz, & Kaukiainen, 1992). The eleven items for both scales (6 Bully items and 5 Victim items) were subjected to a principal components analysis, followed by varimax rotation. For each analysis, two factors, with eigenvalues greater than one, corresponded to the sets of items selected to assess tendencies to be victimised by peers and tendencies to bully peers. Factor 1 associated with the Victim Scale items accounted for 31.7% of the variance in scores for boys and 27.7% for girls. Factor 2, comprising Bully Scale items, accounted for 29.0% of variance in scores for boys and 25.3% for girls. The items and corresponding factor loadings are given in Table 1. Factorial independence of both scales for boys and girls was confirmed.

Table 2 presents mean scores on the Suicidal Ideation Scale, the Victim

**Table 1. Factor loadings on Victim and Bully scale items.**

	Factor 1		Factor 2	
	Boys	Girls	Boys	Girls
<b>Victim Scale items</b>				
I get called names by others	.83	.86	-.01	.00
Others leave me out on purpose	.73	.60	-.07	-.02
I get picked on by others	.87	.87	-.01	.02
Others make fun of me	.90	.88	.00	.00
I get hit and pushed around by others	.82	.68	.04	.05
<b>Bully Scale items</b>				
I give soft kids a hard time	-.03	.09	.76	.73
I am part of a group that goes around teasing others	.08	.14	.71	.68
I like to make others scared of me	.00	-.02	.75	.61
I like to show others I'm boss	-.04	-.01	-.61	.51
I enjoy upsetting wimps	-.03	-.02	.77	.77
I like to get into a fight with someone				
I can easily beat	.13	-.09	.67	.75
Variance: Percentage of total	31.7	29.0	27.7	25.3

Scale, and the Bully Scale, together with sex data. Comparisons between boys and girls on the scales (*t*-tests) indicated that girls scored higher on the

Suicidal Ideation Scale ( $p < .01$ ) but lower on the Victim Scale and on the Bully Scale ( $p < .001$ ). Comparisons between scale variances using the Levene test indicated that scores on the Suicidal Ideation Scale showed more variance among girls ( $F = 14.87$ ,  $p < .001$ ), but the scores for boys varied more on the Victim Scale ( $F = 7.44$ ,  $p < .01$ ) and the Bully Scale ( $F = 34.2$ ,  $p < .001$ ).

**Table 2. Mean scores and standard deviations for boys and girls completing the Suicidal Ideation Scale, the Victim Scale, and the Bully Scale, with results for sex comparisons.**

Scale	Boys		Girls		t-test results			
	Mean	SD	N	Mean	SD	N	t (df)	p <
Suicidal Ideation	5.89	2.94	427	6.57	3.39	380	3.02 (756)	.01
Victim Scale	9.06	3.06	445	8.21	2.49	392	4.43 (830)	.001
Bully Scale	9.00	2.93	438	2.93	2.13	387	5.45 (794)	.001

Note. Levene's test for equality of variance applied for each comparison indicated that the scale variances for boys and girls differed significantly in each case ( $p < .05$ ). Thus, t-test results were computed using separate estimates of variance and degrees of freedom computed accordingly.

### Bully-victim frequency

Self-reported frequencies of being bullied and of bullying others were used jointly to classify students as victims, bullies, bully-victims, or others. Victims were those bullied at least once a week; bullies were those who reported that they bullied others more often than "sometimes" either individually or in groups. A small number of students scored relatively high on both scales, despite factorial independence. He or she was reclassified as a bully-and-victim. Students outside these three categories were classified as "other." Their involvement either as a bully or as a victim was relatively rare but not necessarily completely absent.

Self-report data for boys were 58 (13.4%) victims, 75 (17.3%) bullies, 26 (6.0%) bully-and-victims, and 275 (63.4%) others. Self-report data for girls were 35 (9.1%) victims, 37 (9.6%) bullies, 5 (1.3%) bully-and-victims, and 308 (80.0%) others. Distribution of category by gender differed significantly:  $\chi^2$  ( $df = 3$ ) = 31.86,  $p < .001$ . Notably, girls have comparatively fewer bullies and bully-and-victims and more others. Victim data are comparable with those obtained from previous studies of secondary school students (1 in 11 bullied weekly). Bully data are higher than previously, reflecting inclusion of students who saw themselves as bullying fairly often as part of a group activity.

Peer judgement also categorised students into bullies or victims if they

received a score of 1.5 or more on the relevant scale. Those so classified had been described as bullies or victims by raters who had, on average, chosen from the set of 16 between one and two of the relevant descriptors. Peer-nominated boys comprised 16.2% victims, 11.1% bullies, and 0.2% bully-and-victims. Peer-nominated girls comprised 8.4% victims, 7.1% bullies, and .08% bully-and-victims.

Self-report and peer nomination produced some similar results. In each method of categorising students, boys figured more prominently as bullies. Peer nomination, however, produced a lower proportion of bullies and far fewer bully-and-victims. Applying these methods of categorising students yielded proportions of bullies and victims similar to those reported in other Australian self-report studies (Rigby, 1996).

### Relationship with suicidal ideation

Suicidal ideation data for self-report and peer nomination generated mean scores for boys and girls in victims, bullies, and other categories (see Table 3). Low bully-and-victim frequency, especially from peer nomination, led to exclusion of this category from a two way ANOVA of category and sex. Bully-

**Table 3. Suicidal Ideation mean score comparisons for categories of respondents based on self-report and peer nomination.**

	Victim	Bully	Other
<b>Self-report</b>			
Boys			
<i>M</i>	7.07a	7.07a	5.19b
<i>SD</i>	3.66	3.96	2.18
<i>n</i>	55	70	266
Girls			
<i>M</i>	8.71a	7.00b	6.23b
<i>SD</i>	3.47	4.11	3.17
<i>n</i>	34	37	298
<b>Peer nominations</b>			
Boys			
<i>M</i>	6.40a	6.62a	5.68b
<i>SD</i>	3.41	3.01	2.80
<i>n</i>	67	47	312
Girls			
<i>M</i>	7.89a	6.96b	6.42b
<i>SD</i>	3.72	3.49	3.33
<i>n</i>	28	28	321

Note. Means with different subscripts were significantly different by the Least Significant Difference (LSD) test,  $p < .05$ .



and-victim data was also excluded from the fourth category (i.e., other).

Self-report and peer nomination showed a similar pattern of ANOVA results. Self-report results were category,  $F(2, 754) = 23.42, p < .001$ ; sex,  $F(1, 754) = 7.54, p < .01$ ; category  $\times$  sex,  $F(2, 754) = 1.94, p < .05$ . Peer nomination results were category,  $F(2, 797) = 5.94, p < .01$ ; sex,  $F(1, 797) = 5.91, p < .05$ ; sex  $\times$  category,  $F(2, 797) = 0.68, p < .05$ . Suicidal ideation, therefore, showed significantly different levels for categories in both methods of categorisation. Higher levels of suicidal ideation found for girls justified separate analyses for each sex in testing research hypotheses.

The prediction that victims and bullies have higher levels of suicidal ideation than others was tested in one-way analyses of variance on data for each sex, followed by post-hoc analyses for differences between the two sexes. One-tailed testing of the directional hypotheses, with alpha set at .05, in Least-Significant Difference (LSD: SPSS-X User's Guide, 1988, p. 764) confirmed predictions for both boys and girls (see Table 3). Victims showed higher suicidal ideation scores than "others" in self-report and peer nomination. Higher ideation in bullies, however, occurred only for boys.

Ideation scores for self-reported bully-and-victim boys and girls (boys'  $n = 26, M = 7.08, SD = 2.70$ ; girls'  $n = 4, M = 9.50, SD = 4.04$ ) were then compared to the other, bully, and victim groups. One-way ANOVA for each sex was followed by post hoc analyses using the LSD procedure. Male bully-and-victims had higher suicidal ideation score than other students ( $p < .05$ ) but did not differ significantly from either bullies or victims ( $p > .05$ ). Although girl bully-and-victim scores were relatively high, this very small sample was not significantly different from the category of others.

### **Reactions to bullying and suicidal ideation**

Most students bullied on at least one occasion during the year were apparently unconcerned (66.7% of boys and 55.5% of girls). Of those who were bothered, boys reported feelings of anger (77.7%), and girls indicated that they felt sad and miserable (50.5%).

Data from students who reported being bullied at school clarified the relationship between suicidal ideation and reported mode of reacting to bullying (see Table 4). In the two-way ANOVA on three categories of reaction and gender, age was added as a covariate, because mode of reaction may be related to age. Reactions differed,  $F(2, 482) = 13.54, p < .001$ . Gender did not differ,  $F(1, 482) = 1.69$ . The Reaction  $\times$  Sex interaction was not significant,  $F(2, 482) = 1.68$ . Age as a covariate was nonsignificant,  $F(1, 482) = 0.01$ .

Students who reported that they were bullied but not bothered had lower suicidal ideation scores than those who became either angry or sad and miserable (see post hoc analyses of mean differences in Table 4). Sad boys and girls had somewhat higher mean scores on suicidal ideation, but they did not differ significantly from predominantly angry students. Subsequent analyses, therefore, pooled these two categories of nonneutral emotional reactivity compared to a "not bothered" reaction to being bullied.

**Table 4. Suicidal Ideation scores of students who reported being bullied at school according to mode of responding to bullying.**

	Category of respondent		
	Not bothered	Angry	Miserable
Boys			
<i>M</i>	5.90a	6.83b	7.45b
<i>SD</i>	2.86	3.65	3.98
<i>n</i>	182	70	20
Girls			
<i>M</i>	6.10a	7.78b	8.54b
<i>SD</i>	3.22	3.71	3.73
<i>n</i>	127	51	52

*Note.* Means with different subscripts were significantly different by the Least Significant Difference (LSD) test,  $p < .05$ .

The concurrent contributions to suicidal ideation of frequency of peer victimisation, mode of reaction to bullying, and gender were examined in a three-way ANOVA: reactivity (bothered vs. not bothered), victim status (weekly vs. "others"), and gender (male vs. female). Self-report and peer nomination data were considered separately (see Table 5).

Suicidal ideation increased with self-reported level of victimisation ( $p < .001$ ), being bothered ( $p < .01$ ), and being female ( $p < .01$ ). Suicidal ideation increased with peer-nominated data for being bothered ( $p < .01$ ) and being female ( $p < .05$ ). Peer-nominated victims in every subgroup had higher but nonsignificant suicidal ideation scores.

Finally, for students who reported having been bullied by peers, Table 6 shows results of a multiple regression analysis and Pearson correlation coefficients. To assess the contributions to suicidal ideation, all independent variables were entered simultaneously in the equation. Variables comprised specific reactions to bullying (angry or sad), degree of victimisation, degree of engagement in bullying others, gender (coded as male = 1; females = 2), and age in years. Reporting "sad" or "angry" were entered as dummy variables.

For these victimised students, the overall amount of variance accounted for by the combination of variables was approximately 16%. Each independent variables, apart from age, made significant independent contributions to suicidal ideation: In each case,  $p < .01$ . Adolescents victimised by peers at school experience more suicidal ideation if they are frequently bullied, frequently engage in bullying others, react emotionally, and are female. Of particular interest, reactions of feeling depressed or angry after being bullied make significant and separate contributions to suicidal ideation, with the depressive reaction appearing more influential.

**Table 5. Suicidal Ideation mean scores for male and female victims bullied weekly and other victims bullied less often, according to whether reporting being bothered, with results for ANOVA.**

Self-report of victim status		
	Frequent victims#	Other victims
<b>Not bothered</b>		
Boys	6.15 (20)	5.29 (109)
Girls	7.87 (8)	5.90 (98)
<b>Bothered</b>		
Boys	7.64 (33)	5.78 (36)
Girls	8.96 (26)	7.53 (63)
<b>ANOVA</b>		
Bothered vs. not bothered	F = 7.82, $p < .01$	
Victims (weekly) vs. other victims	F = 13.23, $p < .001$	
Male vs. female	F = 10.38, $p < .01$	
Interaction effects (all nonsignificant, $p .05$ )		
Peer nomination of victim status		
	Frequent victims#	Other victims
<b>Not bothered</b>		
Boys	5.82 (22)	5.80 (134)
Girls	7.38 (8)	6.10 (104)
<b>Bothered</b>		
Boys	7.15 (33)	6.87 (54)
Girls	8.96 (16)	7.91 (78)
<b>ANOVA</b>		
Bothered vs not bothered	F = 9.75, $p < .01$	
Victims (weekly) vs. other victims	F = 2.03, $p < .05$	
Male vs. female	F = 6.42, $p < .05$	
Interaction effects (all nonsignificant, $p .05$ )		
Note. # Frequent victims were identified as (a) reporting being bullied weekly from self-reports and (b) being nominated by a relatively high proportion of peers as often bullied.		

## Discussion

Amount of bullying experienced and reactivity to it increase suicidal ideation. Male and female students identified as continually being bullied by peers, by either self-report or peer nomination, are more prone than others to thoughts of suicide. Reaction to school bullying is also related to thoughts of suicide. Male and female students who claimed to be "not bothered" were

**Table 6. Correlations and standardised beta coefficients for multiple regressions of independent variables on Suicidal Ideation.**

Independent variables	<i>r</i>	beta	<i>t</i>	<i>p</i> <
Victim Scale	.25	.20	3.02	.001
Bully Scale	.20	.26	6.10	.001
Depressive reaction	.22	.20	4.03	.001
Angry reaction	.09	.12	2.70	.01
Sex (being female)	.13	.14	3.02	.01
Age (years)	.02	.02	0.43	ns

Multiple R = .41; *F* = 15.91, *df* = 6,466; *p* < .001.

less likely to manifest relatively high levels of suicidal ideation than either those who reported being miserable or angry.

Information about peer victimisation in secondary schools can assist in the identification of Australian adolescent students who are at comparatively high risk of suicidal ideation. This link with suicidal ideation confirms and extends earlier findings that peer victimisation has negative effects on mental health. In the absence of a clinical cutoff point for the Suicidal Ideation Scale, the actual risk for suicidal behaviour cannot be assessed with precision. Insofar as suicidal ideation is viewed as a precursor to suicide attempts, peer victimisation is a risk indicator for self-destructive behaviour among adolescents.

Self-report and peer nomination are qualitatively different sources of information about bullying. Information from either source about frequency of and reaction to victimisation (see Tables 3 and 4) identified adolescents at high risk. However, results in Table 5 show that the effects of peer victimisation and reactions to bullying are additive only if the inference is made from peer assessment data. Peer assessors, therefore, may not make a clear distinction between students being bullied and reacting emotionally. Indeed, peers may infer one from the other. Results from further analyses (see Table 6) based on self-reports from a sample of victimised students suggest that not only do peer victimisation and emotional reactions (angry or miserable) make independent contributions to suicidal ideation but also bullying others makes an additional contribution in raising ideation. At the same time, results in Table 3 for boys and girls separately indicate that conclusions about the effects of bullying need to be qualified. Significant effects for bullying others were found for boys only, regardless of method of assessment.

The major finding that peer victimisation was reliably associated with relatively poor mental health among both boys and girls may be interpreted

in different ways. Public disparagement, a common feature of bullying in schools, is a humiliating experience that can induce thoughts of self-destruction (Pfeffer, 1990). Longitudinal studies have reported that being victimised by peers at school precedes occurrence of mental distress (Kochendorfer & Ladd, 1996; Olweus, 1992; Rigby, 1998). At the same time, enduring personality characteristics such as being prone to depression may have double impact: inducing suicidal ideation and also increasing the likelihood that a child will be bullied by other children. States of depression commonly accompany and may precede suicidal ideation among adolescent subjects (Garland, 1994; Juon & Ensminger, 1997). The effects of depression and peer victimisation on suicidal ideation need to be separated in future research.

Why boy bullies but not girl bullies should show relatively high levels of suicidal ideation also requires an explanation. Certainly, as more boys than girls fitted into the category of "repeated bully," the effect may be an artefact. However, bullying has a somewhat gendered nature and social significance. For example, boys are more likely to employ physical means of bullying and to be less inclined to use indirect means, such as deliberately excluding others. It may also be that bullying in girls is much more likely to be undertaken to secure a favourable social relationship within a group than to inflict physical harm upon others. Male bullying may be an expression of aggressive intent of the kind associated with suicidal behaviour (Brent, Johnson, Perper, & Connolly, 1994).

Alternative explanations are also possible for the association of male bullying of others with suicidal ideation. For example, students who continually use force in situations in which most of their peers would feel it was unwarranted may suffer from time to time a sense of revulsion against their behaviour. A high proportion of students report that they are affected with a sense of shame when they have engaged in bullying weaker children (Rigby, 1997c). Such feelings may engender a depressed condition, which is characteristic of bullies (Slee, 1995), leading to thoughts of suicide. Alternatively, sources of the depression and suicidal ideation experienced by bullies may lie in adverse parental or family relationships or abusive treatment in the home (Martin, Rozannes, Pearce, & Allison, 1995). It is known that children who bully others commonly come from homes where they have been poorly treated (Allison, Pearce, Martin, Miller, & Long, 1995; Pillay & Wassenaar, 1997; Rigby, 1993, 1994a, 1994b; Rigby, Slee, & Cunningham, 1998). Hence, effects of negative family experiences in the association between bullying others and suicidal ideation need to be controlled in future research.

The nature of the relationships between involvement in bully-victim problems, reactivity to being victimised, and suicidal ideation, therefore, is open to various explanations. Yet these results allow the conclusion that children who are often victimised by peers, especially if they show angry or sad emotional reactions, are more likely than others to be in need of help, not

only because the bullying behaviour from others is unwarranted and unpleasant, but also because it can be linked to possible suicidal outcomes. Moreover, persistent bullies, especially if they are boys, are not only a menace to others but also, are, at least in their thinking, self-destructively inclined.

Educators can be further encouraged by this victimisation-suicidal ideation association to consider how schools can most effectively counter problems of bullying in schools. Efforts have been made in this decade to develop and evaluate effective means of dealing with bully-victim problems in school (Olweus, 1993; Rigby, 1996; Smith & Sharp, 1994). Particular attention must now be paid to those children targeted frequently by peers. These children, who tend to suffer comparatively high levels of suicidal ideation, clearly need to be identified and helped. For some children, help can be provided directly in assertiveness training to counter aggressive behaviour from others and in social skills training to make friends (Ross, 1996). Effective counselling of the perpetrators of the bullying, especially along lines suggested by the Method of Shared Concern (Pikas, 1991; Rigby, 1996) also provide indirect help to victimised children. This method seeks to avoid blaming of those who bully but rather invites their responsible and constructive response to the problem. Among boys at least, those who frequently bully others are also at risk of suicidal ideation, and punitive methods of dealing with them could exacerbate their condition.

A strongly emotional response to being bullied, whether anger or depression, may be modulated by anger management (Beck & Fernandez, 1998; Dusenbury, Falco, Lake, Brannigan, & Bosworth, 1997) as well as assertiveness training. Yet some children are clearly more vulnerable than others and are in acute need of effective social support. Recent work has suggested that this can often be provided in the school context by fellow students who care and who can be trained to help (Cowie & Sharp, 1996).

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