



## Original article

## Suicidal Adolescents' Experiences With Bullying Perpetration and Victimization during High School as Risk Factors for Later Depression and Suicidality

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 A B S T R A C T

This is the first study to examine the extent to which frequent involvement in high-school bullying (as a bullying perpetrator, victim of bullying, or bully-victim) increases the risk for later depression and suicidality beyond other well-established risk factors of suicide. The study included 96 students who reported being a bully, a victim, or a bully-victim, and also reported depression, suicidality, or substance problems during an initial suicide screen. These students were interviewed 2 years later and were compared with 142 youth identified during the initial screen as “suicide-at-risk” by virtue of their depression, suicidal ideation, attempts, and substance problems, but who did not report any involvement in bullying behavior. Students who reported both bullying others and other suicide-related behaviors at baseline had higher suicide ideation and were more functionally impaired at follow-up than students who reported suicide-related behaviors but were not involved in bullying. Preventive efforts in high school should target those children who are characterized by both psychological disturbance and bullying, especially the frequent bullies.

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In the United States, Nansel et al. [1] have found that 8.8% of sixth to tenth grade students admitted to bullying others once a week or more, while 8.4% have experienced bullying once a week or more. In a typical 12-month period nearly 14% of American high school students seriously consider suicide while 6.3% actually attempt suicide [2]. Most of the literature on the association between bullying and suicidality is based on cross-sectional studies. The few longitudinal studies of bullying behavior and later depression or suicidal ideation and behavior that exist have

reported conflicting findings. A study in Norway [3] reported that those being seriously bullied at age 11 years suffered from “bouts of depression” as young adults. A study in Australia [4] reported that victimization in the eighth year of secondary school was associated with newly incident symptoms of depression the following year. However, a follow-up study of Finnish children involved in bullying at the age of 8 or 12 years indicated that when psychiatric symptoms were taken into account, involvement in bullying did not independently increase the likelihood of depressive symptoms at age 15 years [5]. Similarly, a 2-year follow-up of peer victimization among high school students in Australia, found that victimization at baseline was not predictive of “psychiatric health” after baseline health status was taken into account [6].

As for the effects of bullying behavior on later suicidality and self-harm, Barker et al. [7] have found that youth reporting both high and increasing levels of bullying perpetration and increasing levels of victimization had the highest rates of self-harm at a 3-year follow-up. Kim et al. [8] have reported that adolescents

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involved in bullying, especially those who both bullied others and were victims of bullying (bully-victims), victims only, girls who bully, and boys with later onset bullying behaviors were at increased risk for suicidal/self-injurious behaviors and ideation at a 10-month follow-up, even after controlling for other suicide risk factors. A study of Finnish boys, however, found that bullying behavior at age 8 years was not associated with suicidal ideation 10 years later when controlling for childhood depression [9]. In addition, frequent bullying and victimization among boys were not associated with later suicide attempts and completed suicide after controlling for conduct and depression symptoms. Frequent victimization among girls, however, was associated with later suicide attempts and completed suicides, even after controlling for conduct and depression symptoms [10]. Another recent study [11] indicated that students who only reported frequent bullying behaviors in *high school* (no depression or suicidality at baseline) did not develop later depression or suicidality and continued to have fewer psychiatric problems than students identified as at-risk for suicide at baseline.

The current study adds to the longitudinal evidence that is necessary to establish causality in the association between bullying and suicidality. Moreover, it focuses on high school bullying and differentiates students who were perpetrators of bullying, victims of bullying, and both (bully-victims). The aim of the current study is to examine the extent to which bullying involvement in high school increases the risk for later depression and suicidality beyond the risk derived from other well-known risk factors, such as depression, serious suicidal ideation, and a previous suicide attempt.

## Methodology

### Participants

Adolescents aged 13 through 18 years, enrolled in ninth through twelfth grade in six high schools in Nassau, Suffolk, and Westchester counties in New York State, were the targeted population for the suicide screening project from which the cohorts for the present project were identified. Five schools were public coed schools and one was a parochial all-boys school. We assessed 2,342 of 3,635 students (64.4% participation rate) from 2002 through 2004. Reasons for nonparticipation included parent refusals (61.9%), student refusals (14.3%), and absences (23.7%). The ethnic distribution of the participating sample was 80.3% white, 5.1% African-American, 7.3% Hispanic, 3.8% Asian, and 3.5% other; 58.1% of the students were male. The inclusion of an all-male parochial school explains the high percentage of boys. The average age of participating students was 14.8 years ( $\pm 1.2$  sd). There were no significant differences between participants and nonparticipants in gender, age, and ethnicity [see Reference 12 for details].

### Measures

The same measures were used in screening and follow-up assessments, with the exception of the bullying measure, which was used only at baseline. Self-completion screening questionnaires were completed by the students over two class periods, on separate days (described in detail in Reference 12). The follow-up measures were administered in an interview format via telephone. Use of self-reports followed by a safety interview with a health professional is common in the field of suicide screening to enhance the safety of the individuals [13,14].

*Beck Depression Inventory (BDI-IA)*. The BDI-IA [15] contains 21 items that assess cognitive, behavioral, affective, and somatic components of depression. Loss of libido was not assessed. The responses for each question range from 0 (the depressive symptom is not present) to 3 (the symptom is severe). The BDI has demonstrated excellent internal consistency and good test-retest reliability in research in adolescents and excellent sensitivity and specificity in identifying major depression in adolescents [16,17].

*Suicidal Ideation Questionnaire (SIQ-JR)*. The 15-item SIQ-JR [18] uses a seven-point Likert-type scale, ranging from 0 ("I never had this thought") to 6 ("This thought was in my mind almost every day"), assessing the frequency of specific suicidal thoughts during the past month. It assesses a wide range of thoughts related to death and dying, passive and active suicidal ideation, and suicidal intent. Reliability and validity of the SIQ-JR are well-documented [19].

*Suicide attempt history*. Seven questions asking about lifetime and recent suicide attempts were derived from the depression module of the Diagnostic Interview Schedule for Children (DISC-IV) [20] and an earlier suicide screen [14]. These items have demonstrated good construct validity [14]. The assessment of an attempt included questions about occurrences, injuries sustained, medical care sought, and hospitalization.

*Drug Use Screening Inventory (DUSI)*. The DUSI [21,22] is designed to screen for alcohol or drug use and problems among teenagers, and has demonstrated good reliability, discriminant validity and sensitivity, and has published normative cutoff scores [21–24]. A total score combines all 15 items from the substance-use scale (assessing the degree of involvement and severity of consequences from alcohol and drug use), three alcohol or drug items on the school performance adjustment scale, and one additional aggression item assessing the clinically predictive problem of breaking things or getting into fights while under the influence of alcohol or drugs [25].

*Columbia Impairment Scale (CIS)*. The CIS provides a measure of overall severity of functional impairment [26]. It is a 13-item scale tapping four major areas of functioning: interpersonal relationships, school/work, certain broad areas of psychopathology (general behavior or mood), and use of leisure time. The CIS has demonstrated good internal consistency, test-retest reliability, and discriminant validity [26].

*Bullying/Bullied experiences*. Several questions regarding bullying behavior were derived from the World Health Organization study on youth health [1]. The subject was introduced as follows: "The next 7 questions are about bullying. We say a student is being bullied when another student, or group of students, says or does nasty and unpleasant things to him or her. It is also bullying when a pupil is teased repeatedly in a way he or she doesn't like. But it is not bullying when two students of about the same strength quarrel or fight." Separate questions assessed the frequencies of bullying and being bullied at school and away from school property. Additional questions asked students to report the frequency with which they were bullied in each of seven ways (Made fun of you because of your religion or race; Made fun of you because of your looks or speech; Hit, slapped, or punched you; Spread rumors or mean lies about you; Made sexual jokes, comments, or gestures to you; Used e-mail or

Internet to be mean to you). The items were coded on a five-point scale from (0) “not at all” to (4) “most days”. Frequent bullying and being bullied was defined as once a week or more [1]. This scale had high reliability in the current study (Cronbach  $\alpha = .79$ ).

### Procedures

Standard risk indicators from the initial screen were used to identify an at-risk cohort of youth reporting in the self-report questionnaires recent or past suicidal behavior, prominent current suicidal ideation, moderate to severe depression, and/or substance abuse impairment [12,27]. For adolescents reporting serious suicidal ideation, past suicide attempt, depression with any level of suicidal ideation, or requesting to talk to a clinician, a “Safety Review” interview was conducted by a project child psychiatrist, psychologist, or social worker. The project’s clinical team interviewed these adolescents to assess imminent suicide risk and the need for further evaluation and treatment. If survey responses were substantiated during the interview, a project social worker contacted the parents by telephone to provide a summary of the screening results, verify a student’s report of current treatment, and discuss recommendations for further evaluation and treatment with a local mental health provider. Because most youth with depression and substance abuse problems do not engage in suicidal behavior, those who scored above the cutoff on the problem scales, without reporting current suicidal ideation or history of attempts, were not interviewed by our project’s clinical team; however, project social workers notified their parents of the survey findings.

A total of 317 students were identified as at risk for suicide [28]. Among the suicide-at-risk cohort, 96 students reported frequent bullying behavior (41 as “Suicide-At-Risk Bully Perpetrators,” 42 as “Suicide-At-Risk Victims of Bullying,” and 13 as “Suicide-At-Risk Bully-Victims”) during the screen. The remaining 221 individuals (“Suicide-At-Risk only” group) reported suicide-related behaviors but did not report frequent bullying/victimization behavior (see Figure 1).

On the parent information sheet and student assent form of our originating study [12], we indicated the possibility of a future follow-up. For the current project, we first approached the youths’ parents by mail and asked them to forward our recruitment letter to the youth. Only if the youth was older than 18 years of age did we approach them directly by mail.

Only 62% of eligible subjects participated in the follow-up study, but we found no demographic or baseline clinical differences between participants and nonparticipants. Approximately

2 years after the initial screen, a follow-up telephone interview was conducted with the youth, including 24 of the Suicide-At-Risk Bully Perpetrator group, 20 of the Suicide-At-Risk Victim of Bullying group, 10 of the Suicide-At-Risk Bully-Victim Group, and 142 of the Suicide-At-Risk only group.

Active consent from the parents and assent from the youth (or consent, depending on age of participant) was obtained via the telephone before the follow-up telephone interview proceeded. The average length of the interview was 45 minutes. Confidentiality issues were handled according to standard clinical ethics. The youth was informed before the survey that serious suicide ideation or suicidal behavior would be shared with their parents. If in the course of the follow-up interview, the youth indicated that he/she may be in danger of harming him/herself the parent was notified and the interviewer immediately notified our project clinician (A.B.K.). The clinician would then contact the youth to assess the immediacy of the problem and contacted the parents if the youth was in danger of harming him/herself. In all these cases, a list of community providers and mental health centers was mailed. The study procedures were approved by the institutional review board of the New York State Psychiatric Institute/Columbia University Department of Psychiatry.

### Definition of at-risk status

A youth was determined to be “Suicide-At-Risk” [12,28] from the baseline screen if he/she (1) reported serious suicidal ideation as operationalized by a score greater than or equal to 31 on the SIQ-JR; or an endorsement of any of six SIQ-JR “critical items” at the clinically significant levels of “a couple of times a week” or “almost every day” (“I thought about killing myself”; “I thought about how I would kill myself”; “I thought about when I would kill myself”; “I thought about what to write in a suicide note”; “I thought about writing a will”; “I thought about telling people I had a plan to kill myself”); or an endorsement of BDI item statements “I would like to kill myself” or “I would kill myself if I had a chance”; (2) endorsed a past suicide attempt (regardless of timing, injury or medical attention); (3) exhibited depression as defined by a BDI score greater than or equal to 16; or (4) reported a substance problem, as manifested by an endorsement of four out of eight clinically significant impairment items on the DUSI [12]. These risk criteria were based on those identified in studies of youth suicide [29].

### Data analysis

Psychiatric status outcomes are depression (BDI), suicidal ideation (SIQ-JR), suicide attempts, substance use impairment

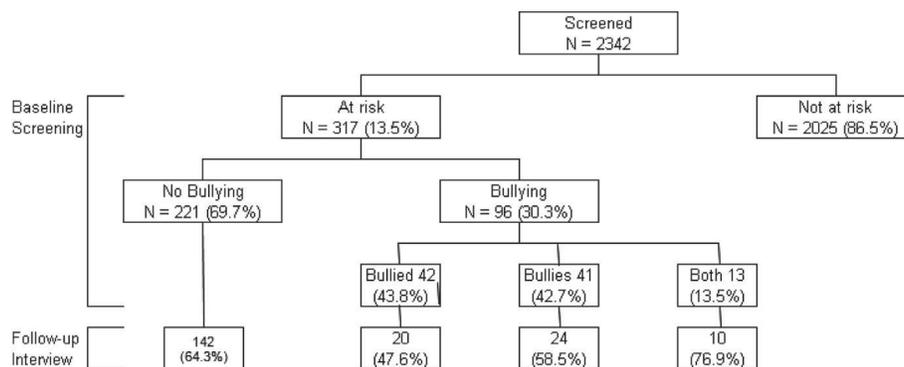


Figure 1. Description of sample, showing rates of participation in follow-up.

**Table 1**  
Baseline characteristics of follow-up participants

	Suicide-At-Risk Only N = 142	Suicide-At-Risk & Bully Perpetrator N = 24	Suicide-At-Risk & Victim of Bullying N = 20	Suicide-At-Risk & Bully-Victim N = 10
Age mean, sd	15.1, 1.2	15.1, 1.3	14.9, 1	14.7, 1.3
Sex n, %				
Male	50, 35.2	9, 37.5	7, 35	4, 40
Female	92, 64.8	15, 62.5	13, 65	6, 60
Ethnicity n, %				
White	111, 78.2	21, 87.5	15, 75	10, 100
African-American	5, 3.5	1, 4.2	1, 5	0, 0
Hispanic	16, 11.3	1, 4.2	3, 15	0, 0
Asian	5, 3.5	1, 4.2	0, 0	0, 0
Other	5, 3.5	0, 0	1, 5	0, 0

(DUSI), and functional impairment reported by the youth (CIS-Y). With the exception of history of suicide attempts, the outcomes were used as continuous variables.

For the baseline and follow-up contrasts, all continuous outcomes and the one dichotomous outcome (history of suicide attempts) were examined by use of a series of independent t-tests and chi-square analyses with the continuity correction, respectively. Longitudinal analyses used a series of t-tests for dependent samples for the continuous variables and McNemar chi-square test for the dichotomous variable. The follow-up participants were employed in all analyses (including the baseline comparisons).

## Results

Baseline characteristics of follow-up participants were not different between the bullying groups (bully, victim, bully-victim) (Table 1). A total of eight students made a suicide attempt during the 2-year follow-up (six were from the “Suicide-At-Risk Only” group, one from the “Suicide-At-Risk Bully Perpetration” group and one from the “Suicide-At-Risk Victim of Bullying” group).

### Psychiatric problems at baseline

Students who had risk factors for suicide in high school but were not involved in bullying behavior (“Suicide-At-Risk Only” group) had significantly lower levels of substance problems and functional impairment compared with students who had the

suicide-related risk factors and were also bullies (“Suicide-At-Risk Bully Perpetrator” group) (Table 2) (Substance problems: 2.7 vs. 5.4 respectively,  $p < .01$ ; Functional impairment: 14.8 vs. 21.5,  $p < .001$ ). There were no statistically significant differences between the “Suicide-At-Risk Only” group and the “Suicide-At-Risk Victims of Bullying” group. The “Suicide-At-Risk Only” group had significantly lower levels of depression, suicidal ideation, and functional impairment than the “Suicide At-Risk Bully-Victim” group (Depression: 18.5 vs. 24.8,  $p < .01$ ; Suicide ideation: 20.6 vs. 35,  $p < .05$ ; Functional impairment: 14.8 vs. 23.2,  $p < .01$ ).

A comparison of the at-risk bullying groups (“Suicide-At-Risk Bully Perpetrator” group, “Suicide-At-Risk Victims of Bullying” group, and “Suicide-At-Risk Bully-Victim” group) indicated that the groups were not significantly different in terms of depression, suicidal ideation, substance problems, and functional impairment.

### Psychiatric problems at follow-up

The “Suicide-At-Risk Only” group had lower levels of suicidal ideation and functional impairment compared with the “Suicide-At-Risk Bully Perpetration” group (Table 3) (Suicide ideation: 8.5 vs. 13.9 respectively,  $p < .05$ ; Functional impairment: 6.3 vs. 11.3 respectively,  $p < .01$ ). These students also had lower levels of depression and substance problems, but these were not statistically significant (although depression was approaching significant difference). There were no statistically significant differences between the “Suicide-At-Risk Only” group and the “Suicide-At-Risk Victim of Bullying” group. Similarly, there were no statistically significant differences between the “Suicide-At-Risk Only” group and the “Suicide-At-Risk Bully-Victim” group, but this finding should be considered with caution because the number of youth in this last group was small.

Comparisons between the suicide-at-risk bully groups (“At-Risk Bully Perpetrator,” “At-Risk Victim of Bullying,” “At-Risk Bully-Victim”) indicated that the students who were bullying others in conjunction with other risks in high school (e.g., depression) were significantly more likely to be functionally impaired later compared with at-risk students who were victims of bullying in high school (11.3 vs. 6.5 respectively,  $p < .05$ ).

## Discussion

To our knowledge, this is the first study to examine whether high school students who screen positive for both bullying behavior (as a bully perpetrator, a victim of bullying, or

**Table 2**  
Psychiatric problems at baseline by at-risk and bully status for participants in follow-up

	Suicide-At-Risk Only N = 142	Suicide-At-Risk & Bully Perpetrator N = 24	Suicide-At-Risk & Victim of Bullying N = 20	Suicide-At-Risk & Bully-Victim N = 10
Dichotomous measures N, %				
Attempts	43, 30.3	10, 41.7	4, 20	4, 40
Continuous measures mean, sd				
Depression	18.5, 7.2 <sup>c</sup>	21.6, 9	20.7, 6.4	24.8, 5.7 <sup>c</sup>
Suicide ideation	20.6, 16.1 <sup>e</sup>	26.4, 19.8	21.9, 12.3	35, 26.9 <sup>e</sup>
Substance problem	2.7, 3.5 <sup>b</sup>	5.4, 5.9 <sup>b</sup>	2.7, 3.1	3.5, 3.8
Functional impairment	14.8, 8.2 <sup>a,d</sup>	21.5, 8.1 <sup>a</sup>	17.1, 8.3	23.2, 7.3 <sup>d</sup>

<sup>a</sup> Baseline contrast between the “suicide-at-risk only” and “suicide-at-risk bully perpetrator” groups is significant at  $p < .001$ .

<sup>b,c,d</sup> Baseline contrast between the “suicide-at-risk only” and “suicide-at-risk bully perpetrator” groups or “suicide-at-risk bully-victim” groups is significant at  $p < .01$

<sup>e</sup> Baseline contrast between the “suicide-at-risk only” and “suicide-at-risk bully-victim” groups is significant at  $p < .05$ .

**Table 3**  
Psychiatric problems at follow-up by at-risk and bully status for participants in follow-up

	Suicide-At-Risk Only N = 142	Suicide-At-Risk & Bully Perpetrator N = 24	Suicide-At-Risk & Victim of Bullying N = 20	Suicide-At-Risk & Bully-Victim N = 10
Dichotomous measures N, %				
Attempts	6, 4.2	1, 4.2	1, 5	0
Continuous measures mean, sd				
Depression	9.7, 6.8	12.5, 10.3	9.4, 6.4	12, 7.2
Suicide ideation	8.5, 8.1 <sup>a</sup>	13.9, 15.4 <sup>a</sup>	8.3, 9.5	8, 6.7
Substance problem	1.8, 2.6	2.7, 3.2	1.6, 2.2	1.4, 2.3
Functional impairment	6.3, 6.3 <sup>b</sup>	11.3, 8.6 <sup>b,c</sup>	6.5, 4.3 <sup>c</sup>	7.8, 9.1

<sup>a</sup> Contrast between the “suicide-at-risk only” and “suicide-at-risk bully perpetrator” groups is significant at  $p < .05$ .

<sup>b</sup> Contrast between the “suicide-at-risk only” and “suicide-at-risk bully perpetrator” groups is significant at  $p < .01$ .

<sup>c</sup> Contrast between the “suicide-at-risk bully perpetrator” and “suicide-at-risk victim of bullying” groups is significant at  $p < .05$ .

bully-victim) and for risks for suicide, including depression, suicidal ideation/behavior, and substance problems, are at increased risk for later depression and suicidality compared with students who only exhibit these other risk factors for suicide. The main finding of this study is that students who perpetrated bullying *in conjunction* with problems warranting their meeting the suicidal risk threshold in high school were the most likely to experience psychiatric problems at follow-up. Approximately 2 years after the initial assessment psychological problems were still less frequent among those who had only reported risks for suicidal behavior (based on suicidal ideation, suicidal behavior, depression, or substance abuse) compared with students who had the suicide-related risk factors but also reported perpetrating bullying. This implies that frequent bullying of others during high-school years increases the risk for later depression and suicidality above and beyond the other established risk factors of suicide. The finding strengthens bullying as an important risk factor that should be considered among other important risk factors.

We found no significant difference between bully-victims who were at risk by virtue of their depression, suicidality, or substance problems in high school and those who shared these risks, but were neither bullies nor victims. However, this finding probably reflects the small number of “Suicide-At-Risk Bully-Victims” in the sample.

Our findings are consistent with a study by Rigby [6] among Australian youth, which found that victimization at baseline was not predictive of later “psychiatric health” after baseline health status was taken into account. Our findings are also consistent with Kim et al. [30], who demonstrated that bullying (and not only victimization) is a strong risk factor for the later development of psychopathologic behaviors. However, our findings are not consistent with those of Skapinakis [31] who found that victims of bullying behavior were more likely to express suicidal ideation. Their association was particularly strong for those who were bullied on a weekly basis and it was independent of the presence of psychiatric morbidity. In contrast, being a perpetrator was not associated with this type of ideation after adjustment. The differences between our results and those of Skapinakis may be explained by the fact that Skapinakis’s study was cross-sectional and assessed as outcome the least severe form of suicidal ideation, whereas we assessed serious suicidal ideation in a longitudinal study.

Our findings, which emphasize the concern for those high school students who bully others, support previous studies indicating that externalizing behavior is an important psychiatric

correlate of depression and suicidal behavior. Aggression may even be as important as depression in some kind of suicidal behaviors [32]. Apter et al. [33] have argued that suicide risk among individuals with externalizing disorders may be related to impulsive and anger-related behaviors.

The longitudinal design is a major strength of the study, providing a more valid examination of the independent sequelae of bullying behavior than cross-sectional data can provide. However, the study has several limitations. First, at baseline we used self-report questionnaires while at follow-up we conducted a telephone interview. Studies have shown that there are differences between alternative modes of assessing depression and suicidality [34,35]. People tend to disclose more on self-reports [36]. Nevertheless, identical procedures were used for all groups, so the data collection procedures would not have an impact on our examination of group differences. Second, although we included questions about specific types of victimization (e.g., cyberbullying), we were unable to examine their impact separately due to small sample sizes. Third, we employed suburban schools with predominantly white populations of limited socioeconomic diversity because the sampling frame was dictated by design considerations of our earlier study [12]. As such, the results cannot be generalized to urban, more ethnically or socioeconomically diverse settings. Previous studies reporting on ethnicity and socioeconomic status as factors in bullying behavior have shown inconsistent results [1,37–40]. Fourth, information about bullying behavior is based only on self-reports. Future studies may want to include peer nomination or parent/teacher reports. Fifth, we did not have measures of other established risk factors (e.g., impulsive aggression, sexual abuse, sexual orientation, suicide in the family) and thus cannot be certain whether it is bullying specifically that is relevant, or just the addition of one more major risk factor. Sixth, only 62% of eligible subjects completed follow-up assessments. Although those with poor emotional health are less likely to participate in a follow-up, we did not find the differences between the participants and nonparticipants to be clinically or statistically significant. For example, 78.6%, 25%, 29.6%, 27.8%, 44.8% of the participants’ responses during the screen indicated that they were depressed, had serious suicidal ideation, had attempted suicide, had a substance problem, or were functionally impaired, respectively; whereas, 83%, 29.8%, 27.7%, 18.1%, 47.9% of the nonparticipants’ responses indicated that they were depressed, had serious suicidal ideation, had attempted suicide, had a substance problem, or were functionally impaired, respectively [28]. Lastly, bullying related behaviors were not measured at

follow-up so it is possible, for example, that bullying behaviors continued for the perpetrators but did not for the victims.

In summary, bullying others in conjunction with depression or suicidality in high school is indicative of more serious concurrent problems and portends a worse outcome 2 years later than exhibiting depression or suicidality only. Thus, an assessment of bullying behaviors should be considered in suicide screening protocols. In addition, programs designed to reduce bullying behavior should be concerned with bullies as well as victims. Preventive efforts in high school should include those children who are characterized by both psychological disturbance and bullying, especially those who bully others.

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