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Original article

Potential Suicide Ideation and Its Association With Observing Bullying at School

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 A B S T R A C T

Purpose: To explore those contextual factors that predict potential suicide ideation among students who observe bullying at school.

Methods: 1,592 students of whom 1,009 who reported having observed bullying at school were surveyed from 14 secondary schools in the North of England. Role-related (not-involved, victim, perpetrator, 'bully-victim' and observer) and gender-wise comparisons of key variables were undertaken prior to hierarchical multiple regressions to determine those associated with potential suicide ideation.

Results: Analyses indicated that students who observed bullying behavior were significantly more likely than those not involved in bullying to report symptoms of interpersonal sensitivity, to indicate greater helplessness and potential suicide ideation. Hierarchical multiple regression analyses indicated that, among boys, helplessness ($\beta = .48, p < .001$) followed by frequency of bullying perpetration ($\beta = .11, p < .001$), and a less supportive home climate ($\beta = -.10, p < .004$) were associated with potential suicide ideation. Helplessness was found to be the only variable associated with potential suicide ideation among girls ($\beta = .49, p < .001$).

Conclusions: Perceived helplessness is significantly associated with potential suicide ideation among students who observe bullying at school.

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Negative social, educational, and home climates have been shown to be correlated with increased suicide ideation among youth cross-nationally and particularly for those youth who represent a minority sub-set of the population [1–3]. Individual factors such as interpersonal sensitivity, helplessness and a perceived loss of locus of control, together with social factors such as a perceived lack of family and community-level support have also been linked to suicide ideation [4–6]. While

it is suggested that thoughts of ending life among the general adolescent population could be as high as 30% with approximately one-third making at least one suicide attempt [1], significantly higher rates of suicide ideation have been found among those youth who are subjected to violence and abuse at school and particularly those who are subjected to bias-based discrimination [7,8].

Much of the research focusing on suicide associated with school bullying has focused on the victims and perpetrators of such behavior, and it has been generally assumed that other youth remain largely unaffected by the actions they have witnessed or heard about [9]. Studies of bystander behavior have traditionally sought to understand why observers do not intervene from a social dynamic perspective without exploring the emotional and psychological impact of witnessing a violent or life-threatening interaction. With respect to the school environment specifically, early research on bystanders focused on the

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roles some students took in bullying interactions and whether they actively or passively participated in the victimization of peers (independently or as part of a group), or offered support to victims following an event [10]. Subsequent cross-sectional research conducted in the United Kingdom (U.K.) has suggested that students who observe bullying are also at risk of certain negative outcomes including increased alcohol consumption, depression, anxiety and, ultimately, thoughts of ending life, more so than those students who are not involved in bullying behavior [11,12].

The purpose of this study is to better understand how the perceived presence or absence of family and school support, observations of bias-based or non-biased bullying, the presence of a group of perpetrators, the frequency of bullying observed, interpersonal sensitivity, and helplessness are associated with potential suicide ideation among students who observe bullying.

Methods

Participants

This study is drawn from a larger sample of 2,002 students aged 12 to 16 years attending 14 publicly funded secondary schools in one Local Educational Authority (LEA) in the North of England, and includes 1,592 students (79.5%; 54.1% boys, 45.9% girls; *M* age 13.6 years, *SD* 1.06) who completed all the relevant questions in the survey. Using the approved classification system for ethnicity for the 2001 U.K. Census, most students (92.5%) described themselves as 'White' or 'British White', 1.5% as of mixed/dual heritage, .8% as 'Asian' or 'British Asian', .3% as 'Black' or 'British Black', .3% as 'Chinese', and a further 4.6% as 'other'. For the purposes of this study, students were classified into five discrete categories (not involved, victims, perpetrators, 'bully-victims', and observers). Overall, 449 students reported that they had not been involved in bullying (252 boys, 197 girls), 96 reported having been victims of bullying (58 boys, 38 girls), 21 reported being perpetrators (11 boys, 10 girls) 17 reported being so-called 'bully-victims' (10 boys, 7 girls), and 1,009 said they had observed bullying (this included bystanders who were sometimes also victims and/or perpetrators; 531 boys, 478 girls).

Procedure

Of the 50 secondary schools (including special schools) located within the LEA (population: approximately 44,000 students), over half were identified as suitable for inclusion in the study by LEA staff. Fourteen schools were eventually selected that were considered representative of the region in terms of students' social-economic background, sex, and ethnicity, ensuring an appropriate mix of urban and rural, co-educational, and single-sex schools. Participants represented approximately 50% of the students enrolled in the selected schools. Following approval of the protocol by the LEA and the university ethics committee, parents and guardians were informed of the study via letters sent by the head teacher (principal) of each school. Students were not surveyed if parents or guardians confirmed orally or in writing that they did not wish their children to participate. Additionally, students were not surveyed where the project was perceived to be a significant disturbance on curricula activities such as examination

preparation, or where anti-bullying interventions were established. Surveys were completed in 40-60 minutes and students were informed that they could omit to answer questions that they felt were irrelevant or distressing. Students with special educational needs were provided with additional time to complete the questionnaire or were assisted by a researcher. Each headteacher received a report detailing prevalence rates of bullying by grade and sex to assist them in developing anti-bullying initiatives in his or her school.

Measure of bullying behavior

A 15-item anti-bullying inventory based upon the Olweus Bully/Victim Questionnaire [13] afforded students the opportunity to identify whether they had been a victim or perpetrator of bullying as well as introducing mirror questions about observing physical, verbal, and relational bullying at school and on the way to and from school. The inventory provided an extended list of bullying behaviors which included *being frightened by a look or stare, belongings taken, homework destroyed, graffiti written, pressured to smoke tobacco, drink alcohol or take drugs* which were scored 0 = No, 1 = Yes [11]. Students were asked to identify the reasons why they thought they were bullied/bullied others, or why another student was bullied (scored 0 = No, 1 = Yes) which were clustered into two categories: bias-based or discriminatory (six items – *physical weight/size; ethnicity; traveller; gay/lesbian; special needs; disability*); and non-biased (eight items – *general appearance/clothing; good or poor school work; friendships; good or poor at sports; possessions/brands*). Comparable with other U.K. studies of bullying behavior students' reports of the frequency with which experienced (e.g. *How often have you been bullied at school this term?*), perpetrated or observed bullying were used as an index of severity (coded as 0 = *I haven't been bullied* to 4 = *Several times a week*) [14]. We also recorded whether or not perpetrators were assisted or supported by others (coded as 0 = *No group*, 1 = *Group*).

Measure of perceived school and home climate

Students were asked to identify whether there were teachers, staff or administrators in whom they felt they could confide (8 options; 0 = No; 1 = Yes); whether they had seen teachers stop bullying when it took place (coded 1 = *Never*; 4 = *Always*); whether they had seen students stop bullying when it took place (coded 1 = *Never*; 4 = *Always*); and whether or not they had seen or knew of incidents of bullying being reported (coded 1 = *Never*, 4 = *Always*). Positive responses (the identification of one or more faculty/staff members in whom students could confide, and reports that bullying was tackled *sometimes* or more often) were coded 1 = *Generally Supportive* with 0 = *Generally Unsupportive*. Perceived home climate was measured using two items. Students identified family members in whom they felt they could confide (8 options; 0 = No; 1 = Yes); and whether or not they had told someone at home about bullying they had experienced, perpetrated or observed (coded 1 = *Never*; 5 = *Everday*). Positive responses (the identification of one or more family members in whom students could confide, and self-reports of telling someone about bullying *sometimes* or more often) were coded 1 = *Generally Supportive* with 0 = *Generally Unsupportive*.

Measures of interpersonal sensitivity, helplessness, and potential suicide ideation

For this study, the 53-item Brief Symptom Inventory (BSI) [15] provided items for measures of recent (i.e. last 7 days) interpersonal sensitivity, helplessness, and potential suicide ideation with each item scored on a 0–4 scale (0 = *Not at all*, 4 = *Extremely*). Scores for interpersonal sensitivity was derived from the established subscale consisting of four items relating to feelings of being hurt and feelings of inferiority ($\alpha = .81$). A measure of helplessness was derived from the mean of four items that correspond to current definitions of this construct found in the research - a perceived lack of autonomy, an inability to facilitate change, the existence of systemic or organizational prohibitions, and associated cognitive inferences [16] - (*Feeling blocked in getting things done; Feeling that people will take advantage of you if you let them; Feeling that you are watched or talked about by others; and Feelings of worthlessness*). The reliability coefficient for this subscale was ($\alpha = .79$). Finally, a single item from the BSI (*Thoughts of ending your life*) was used as a measure of potential suicide ideation.

Analysis

Firstly, we compared scores and reports for key independent variables (interpersonal sensitivity, helplessness, perceived home climate, perceived school climate in this study) and the dependent variable (potential suicide ideation) using analysis of variance (ANOVA) and chi-square according to participants' roles in bullying behavior (*not involved*, *victim*, *perpetrator*, '*bully-victim*', and *observer*). Secondly, for observers, we compared scores for boys and girls on each of the independent variables again using ANOVA and chi-square to determine whether there were any significant gender differences that would impact upon subsequent analyses. We then conducted hierarchical multiple regression analyses to determine whether the independent variables used this study (perceived school and home climate, observation of bias based or non-biased based bullying, the presence or absence of a group of perpetrators, frequency of bullying observed, interpersonal sensitivity, and helplessness) were associated with potential suicide ideation among boys and girls separately after controlling for self-reports of the frequency of victimization by others and perpetration of bullying. We were also interested to see whether the interaction of the presence of a group together with our measure of helplessness was associated with potential suicide ideation. The recommended formula $N > 50 + 8m$ [m = number of independent variables] was used to ensure the sample size met analysis requirements [17].

Results

Comparisons on key variables used in the study

Table 1 provides a summary of the data and analyses of five key variables (interpersonal sensitivity, helplessness, potential suicide ideation, perceived school and home climate). One-way between groups analysis of variance with post-hoc Sheffé tests indicated that students not involved in bullying behavior were significantly less likely to report symptoms of interpersonal sensitivity when compared to perpetrators ($p < .001$), 'bully-victims' ($p < .05$), or observers ($p < .001$). They were also significantly less likely to report indices of helplessness when

Table 1

Descriptive and Summary Statistics of Key Study Variables According to Role in Bullying

1) Variable (continuous)	M	SD	F value and Sig.
Interpersonal sensitivity			$F(4, 1,587) = 16.33, p < .001$
a – not involved (n = 449)	.48	.63	a<c**, a<d*, a<e**
b – victim (n = 96)	.92	.84	
c – bully (n = 21)	1.04	.89	
d – bully-victim (n = 17)	.92	.94	
e – observer (n = 1,009)	.73	.84	
Helplessness			$F(4, 1,587) = 17.73, p < .001$
a – not involved	.56	.79	a<b**, a<d*, a<e**
b – victim	1.10	.98	
c – bully	.95	.88	
d – bully-victim	1.26	1.07	
e – observer	.96	.96	
Potential suicide ideation			$F(4, 1,587) = 8.19, p < .001$
a – not involved	.37	.88	a<e**
b – victim	.69	1.06	
c – bully	1.05	1.53	
d – bully-victim	1.18	1.29	
e – observer	.68	1.22	
2) Variable (Dichotomous)	Yes (%)	No (%)	Chi-Square Sig.
Perceived school climate supportive?			
a – not involved	25.6	74.4	a<b**, a<e**
b – victim	41.7	58.3	b<e**
c – bully	38.1	61.9	c<e**
d – bully-victim	47.1	52.9	d<e**
e – observer	77.5	22.5	
Perceived home climate supportive?			
a – not involved	90.4	9.6	a<e**
b – victim	94.8	5.2	b>d**
c – bully	90.5	9.5	
d – bully-victim	76.5	23.5	d<e*
e – observer	94.4	5.6	

* $p < .05$.

** $p < .01$.

compared to victims ($p < .001$), 'bully-victims' ($p < .001$), and observers ($p < .001$). Those not involved in bullying were also significantly less likely to report thoughts of ending life when compared to observers ($p < .001$). All other comparisons were not significant. Chi-square analyses indicated that students who reported observing bullying were more likely to perceive their school climate as supportive when compared to the other groups, and were more likely to report perceived supportive home climates when compared to those students not involved in bullying ($p < .001$).

Gender differences among students who observe bullying

Table 2 provides a summary of the data and following comparisons between boys and girls who reported observing bullying at school on the independent variables used in the subsequent hierarchical regression analyses. In terms of victimization, girls reported being bullied significantly more than boys ($p < .03$). Similarly for perpetration girls also reported bullying others significantly more often than boys ($p < .01$). Girls reported having observed more incidents of non-biased bullying than boys ($p < .02$). However, no significant differences were found between boys and girls in terms of having observed bias based bullying or in terms of the frequency with which they had observed all forms of bullying at school. Girls' scores for the BSI subscale for interpersonal sensitivity and our measure of helplessness were found to be significantly higher than boys' ($p < .001$). Significantly more girls (39.7%) were likely to report

Table 2Descriptive and Summary Statistics of Independent Variables by Gender of Observers ($N = 1,009$)

1) Variable (continuous)	<i>M</i>	<i>SD</i>	<i>F value and Sig.</i>
Frequency of victimization			
boys ($n = 531$)	.60	1.07	$F(1, 1,007) = 4.89, p < .03$
girls ($n = 478$)	.75	1.02	
Frequency of perpetration			
boys	.30	.68	$F(1, 1,007) = 7.32, p < .01$
girls	.41	.69	
Frequency of bullying observed			
boys	1.73	1.20	$F(1, 1,007) = 1.47, ns$
girls	1.81	1.18	
N observations of bias-based bullying			
boys	1.00	1.19	$F(1, 1,007) = .55, ns$
girls	.94	1.14	
N observations of non-biased bullying			
boys	1.02	1.58	$F(1, 1,007) = 5.98, p < .02$
girls	1.26	1.58	
Interpersonal sensitivity			
boys	.71	.79	$F(1, 1,007) = 17.82, p < .001$
girls	.93	.88	
Helplessness			
boys	.86	.88	$F(1, 1,007) = 11.01, p < .001$
girls	1.06	1.03	
2) Variable (Dichotomous)	Yes (%)	No (%)	<i>Chi-Square and Sig.</i>
Perceived school climate supportive?			
boys	76.6	23.4	$\chi^2(1) = 4.70, ns$
girls	78.5	21.5	
Perceived home climate supportive?			
boys	91.9	8.1	$\chi^2(1) = 13.88, p < .001$
girls	97.3	2.7	
Group			
boys	18.5	81.5	$\chi^2(1) = 53.97, p < .001$
girls	39.3	60.7	

observing bullying perpetrated by a group than boys (18.5%). Boys and girls perceived school climate to be generally supportive (76.6% and 78.5% respectively), however more girls than boys perceived home climate to be supportive (97.3% vs. 91.9%) and this was found to be significant ($p < .001$).

Potential suicide ideation among observers of bullying behavior

Table 3 provides a summary of the results from the hierarchical regression analyses for boys and girls separately. We wished to determine which of the key independent variables and an interaction variable (group x helplessness) were significantly associated with potential suicide ideation after controlling for self-reports of the frequency of victimization and of perpetration of bullying. Preliminary analyses indicated that there were no violations of the assumptions underlying hierarchical regression analysis. We applied a Bonferroni correction to our regression analyses and used an adjusted alpha level of .005 (.05/10).

Among boys ($n = 531$), frequency of victimization and frequency of perpetration of bullying explained 8.2% of the variance in potential suicide ideation at Step 1, $F(2, 528) = 24.83, p < .001$. At Step 2, and the entry of the remaining independent variables, the total variance explained by the model increased to 34.6%, $F(11, 519) = 24.92, p < .001$; $R_{\text{Change}} = .26, F_{\text{Change}}(9, 519) = 22.88, p < .001$. Three independent variables made

Table 3

Final Regression Models Predicting Suicide Risk among Bystanders

Independent variables	Boys		Girls	
	β	R^2	β	R^2
Frequency of victimization	.04	.35**	-.03	.27**
Frequency of perpetration	.11**		.06	
Perceived supportive school climate	-.05		.03	
Perceived supportive home climate	-.10*		-.01	
N of observations of bias bullying	.09		.06	
N of observation of non-bias bullying	-.08		-.06	
Group/no group	.01		.00	
Frequency of bullying observed	.05		.06	
Interpersonal sensitivity	.06		.01	
Helplessness (centred)	.46**		.50**	
Group x Helplessness	.04		-.02	

* $p < .005$.** $p < .001$.

significant statistical contributions to the final model: helplessness ($\beta = .46, p < .001$) followed by frequency of bullying perpetrated ($\beta = .11, p < .005$) and a less supportive home climate ($\beta = -.10, p < .004$).

Among girls ($n = 478$), frequency of victimization and frequency of perpetration of bullying explained only 3.3% of the variance in potential suicide ideation at Step 1, $F(2, 475) = 8.05, p < .001$. At Step 2, the total variance explained by the model increased to 27.3%, $F(11, 466) = 15.93, p < .001$; $R_{\text{Change}} = .24, F_{\text{Change}}(9, 466) = 17.130, p < .001$. Only one independent variable, helplessness, made a significant statistical contribution to the final model ($\beta = .50, p < .001$).

Discussion

In this study our measure of helplessness was found to be significantly associated with potential suicide ideation among students who had observed bullying. Previous studies of bystander behavior from within the domain of social psychology have argued that issues such as cue ambiguity or social influence and diffusion of responsibility explain why others do not intervene [18]. However a more recent meta-analysis of the bystander effect found that situations that are perceived to be dangerous are recognized as such faster and more clearly as requiring immediate action than non-dangerous situations and thus they increase arousal levels and the likelihood of intervention. Furthermore bystanders are more likely to offer physical support to victims when those victims were exclusively male, when they did not understand the social dynamics at play, when they knew the protagonists, or when there were virtually no other bystanders present [19]. In the context of this study, it is hypothesized that perceived helplessness (including a lack of autonomy, an inability to change what is happening coupled with feelings of low self-worth) impacts significantly upon the ability of school-aged students to intervene to help another being bullied, perhaps more so for girls than boys who report seeing more bullying perpetrated by a group. However, our analyses did not suggest that the interaction of the presence of a group of perpetrators and helplessness was associated significantly with potential suicide ideation for either sex. Furthermore, our data suggests that external factors such as home climate may also have a role to play in explaining potential suicide ideation and this requires further consideration.

It should be noted that suicide ideation among those who observe bullying remains relatively low. In a previous study drawn from the same pool of students [8], bystanders who did not engage in bullying others and had not been victimized were more likely (but not significantly so) to report *Thoughts of death and dying* and/or *Thoughts of ending your life* than students with no involvement in bullying behavior. Such thoughts were found to be highest among those students who were concurrently victims, perpetrators and observers. Thus, observing bullying has an important part to play in understanding the mental health of the whole school population [7].

There are several limitations to this study. Firstly, the data presented represent the findings from 14 schools in one geographical region in the north of England with relatively low numbers of students from minority ethnic communities, thus our findings may not be generalizable to the present population of the U.K. Secondly, given that this study focused primarily on issues of bullying behavior over a nine-week period (i.e. one term), students were only able to give estimates of the frequency of the bullying they had experienced, perpetrated or observed. A more focused study addressing recent bullying (i.e. in the last week) would provide a more accurate assessment of the association between bullying behavior and mental health. Thirdly, we used self-reports in this study, and future research should include peer or teacher observations or nominations to better understand the interpersonal dynamics at play. Finally, we did not have data on students' mental health prior to data collection and thus we cannot be assured that items representing our measure of helplessness (including on affective item drawn from the depression subscale – *Feelings of worthlessness*) are linked with or a consequence of having experienced, perpetrated or observed bullying.

This study provides an initial exploration of the links between observing bullying behavior at school and potential suicide ideation. It suggests that much more research is required focusing on the well-being of those who observe bullying, their status within the school hierarchy, and the role they can potentially play in anti-bullying interventions if they feel empowered to take action to stop bullying when they see it. It also suggests that researchers and practitioners should look beyond the bully

and victim roles when trying to understand the mental health and well-being in school-based populations.

References

- [1] Evans E, Hawton J, Rodham K, et al. The prevalence of suicidal phenomena in adolescents: A systematic review of population-based studies. *Suicide Life Threat Behav* 2005;35:239–50.
- [2] Bender WN, Rosenkrans CB, Crane MK. Stress, depression, and suicide among students with learning disabilities: Assessing the risk. *Learn Disabil Q* 1999;22:143–56.
- [3] Hatzenbuehler ML. The social environment and suicide attempts in lesbian, gay, and bisexual youth. *Pediatrics* 127:896–903.
- [4] Kaltiala-Heino R, Rimpelä M, Marttunen M, et al. Bullying, depression, and suicidal ideation in Finnish adolescents: School survey. *BMJ* 1999;319:348–51.
- [5] Collins S, Cutcliffe JR. Addressing hopelessness in people with suicidal ideation: Building upon the therapeutic relationship utilizing a cognitive behavioural approach. *J Psychiatr Ment Hlt* 2003;10:175–85.
- [6] Evans WP, Owens PE, Marsh SC. Environmental factors, locus of control, and adolescent suicide risk. *Child Adolesc Soc Work J* 2005;22:301–19.
- [7] Klonsky ED, Oltmans TF, Turkheimer E. Deliberate self-harm in a nonclinical population: Prevalence and psychological correlates. *Am J Psychiatry* 2003;160:1501–8.
- [8] Russell ST, Sinclair KO, Poteat VP, Koenig BW. Adolescent health and harassment based on discriminatory bias. *Am J Pub Health* 2012;102:493–5.
- [9] Rivers I. Morbidity among bystanders of bullying behavior at school: Concepts, concerns, and clinical/research issues. *Int J Adolesc Med Health* in press. DOI: 10.1515/IJAMH.2012.003.
- [10] Salmivalli K, Lagerspetz K, Björkqvist K, et al. Bullying as a group process: Participant roles and their relations to social status within the group. *Agg Behav* 1996;22:1–15.
- [11] Rivers I, Poteat VP, Noret N, et al. Observing bullying at school: The mental health implications of witness status. *Sch Psychol Q* 2009;2:211–23.
- [12] Rivers I, Noret N. Participant roles in bullying behavior and their association with thoughts of ending one's life. *Crisis J Crisis Interv Suicide Prev* 2010;3:143–8.
- [13] Olweus D. Annotation: Bullying at school: basic facts and effects of a school based intervention program. *J Child Psychol Psych* 1994;35:1171–90.
- [14] Hughes-Jones S, Smith PK. Self-reports of short-term and long-term effects of bullying on children who stammer. *Brit J Educ Psychol* 1999;69:141–58.
- [15] Ashforth BE. The experience of powerlessness in organizations. *Org. Beh. & Hum. Dec. Proc* 1989;43:207–42.
- [16] Derogatis LR. Brief Symptom Inventory: Administration, Scoring, and Procedures Manual. Minneapolis, Minnesota: National Computer Systems Inc; 1994.
- [17] Tabachnick BG, Fidell LS. *Using Multivariate Statistics*. 5th edition. Boston, Massachusetts: Allyn and Bacon; 2007.
- [18] Latane B, Darley J. Bystander "apathy". *Amer Scientist* 1969;57:244–68.
- [19] Fischer P, Krueger JI, Greitemeyer T, et al. The bystander-effect: A meta-analytic review on bystander intervention in dangerous and non-dangerous emergencies. *Psychol Bull* 2011;137:517–37.