

Observing Bullying at School: The Mental Health Implications of Witness Status

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This study explores the impact of bullying on the mental health of students who witness it. A representative sample of 2,002 students aged 12 to 16 years attending 14 schools in the United Kingdom were surveyed using a questionnaire that included measures of bullying at school, substance abuse, and mental health risk. The results suggest that observing bullying at school predicted risks to mental health over and above that predicted for those students who were directly involved in bullying behavior as either a perpetrator or a victim. Observing others was also found to predict higher risk irrespective of whether students were or were not victims themselves. The results are discussed with reference to past research on bystander and witness behavior.

Keywords: bullying, observer, witness, mental health, school

Previous studies of bullying behavior have tended to focus on risk factors associated with the primary roles of victim, perpetrator, and that of the “bully victim” (Juvonen, Graham, & Schuster, 2003; Nansel, Overpeck, Pilla, Ruan, Simons-Morton, & Scheidt, 2001). Among victims of bullying, higher rates of depression and anxiety coupled with psychosomatic complaints are common (e.g., headaches and abdominal pains; Fekkes, Pijpers, & Verloove-Vanhorick, 2004; Kaltiala-Heino, Rimpelae, & Rantanen, 2000; Srabstein, McCarter, Shao, & Huang, 2006) together with lower levels of academic attainment, self-esteem, and social functioning (Hawker & Boulton, 2000; Schwartz, Gorman, Nakamoto, & Toblin, 2005). When compared with their nonaggressive peers, perpetrators re-

port lower levels of school engagement and belonging, as well higher rates of delinquent behavior outside school (Haynie, Nansel, & Eitel, 2001; Nansel et al., 2001). Among students who have the dual role of perpetrator in some situations and victim in others (“bully victims”), higher rates of depression and reports of somatic complaints are common, and there is an increased probability of these students being referred for psychiatric assessment above those who are primarily perpetrators and victims (Nansel et al., 2001; Swearer, Song, Cary, Eagle, & Mickelson, 2001). Furthermore, higher rates of substance use are associated with both bullying and victimization (Shepherd, Sutherland, & Newcombe, 2006; Swahn, Bossarte, & Sullivent, 2008; Thompson, Sims, Kingree, & Windle, 2008).

Although students who witness bullying have a key role to play in challenging it, there remains a dearth of information on this particular subgroup (Craig & Pepler, 1997; Frey, Hirschstein, Snell, Edstrom, MacKenzie, & Broderick, 2005; Hawkins, Pepler, & Craig, 2001). Research by Salmivalli, Lagerspetz, Björkqvist, Österman, and Kaukiainen (1996) into the group processes associated with bullying at school identified a range of secondary roles

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beyond those of perpetrator and victim that incorporated a degree of bystander behavior (see also Salmivalli, Huttunen, & Lagerspetz, 1997). Using a combination of self-reports and peer-nominations, Salmivalli et al. (1996) demonstrated that the role of bystander includes those who join in with perpetrators in bullying another (“*assistants*”), those who provide positive feedback to perpetrators (“*reinforcers*”), those who stay away and watch from a distance (“*outsiders*”), and those who attempt to intervene on behalf of the victim (“*defenders*”).

Salmivalli et al.’s (1996) research marked a significant shift in our understanding of bullying behavior, expanding beyond the primary roles that other researchers had focused upon. The “*assistant*” was clearly defined in terms of being an active but secondary role in bullying perpetration; however, other roles were less clearly defined. Items that identified the role of the “*reinforcer*” incorporated statements such as, “Comes around to see the situation,” and “Is usually present, even if not doing anything” as well as those who laughed at the victim or encouraged the perpetrator (Salmivalli et al., 1996, p. 15). Furthermore, those that described “*outsiders*” included items such as, “Goes away from the spot,” “Doesn’t take sides with anyone,” and “Pretends not to notice what is happening” (p. 15). Such a role suggested that “*outsiders*” are not only aware of bullying taking place but move away from the group to avoid it. Finally, descriptions of the “*defender*” role, which was found primarily among girls, included items that addressed issues such as consoling the victim or being supportive as well as active items demonstrating direct intervention or help-seeking behavior. Ultimately, while the participant roles identified by Salmivalli et al. (1996) incorporated both active and passive behaviors and provided an index of the multiple roles students engage in when bullying occurs, they also masked the effects of passively observing incidents of bullying.

Participant Roles and Mental Health

Salmivalli et al. (1996) found evidence of social acceptance, particularly among boys, when they acted in some secondary roles (“*reinforcers*,” “*assistants*,” and “*defenders*”) and rejection when engaged in other roles (particularly among “*defenders*” and “*outsiders*”).

Thus, some limited discriminant validity among certain participant roles as measured by the Salmivalli measure has been documented. However, few studies have examined the psychological correlates for students who are uninvolved in bullying or who have been bystanders (Glew, Fan, Katon, Rivara, & Kernic, 2005; Juvonen et al., 2003). Juvonen et al. (2003) found that sixth-grade students whom they classified as “uninvolved” (i.e., could not be classified as perpetrators, victims or “bully victims”) did not experience depression, social anxiety, or loneliness to the same degree as victims or bully victims. Similarly, Glew et al. (2005) found that bystanders in their study of third- to fifth-grade students (those who did not bully others, or those who were not bullied) were less likely to feel unsafe at school, had a greater sense of belonging to their school, and were less likely to feel sad on a daily basis.

The different ways in which participants, bystanders, or the uninvolved have been identified (i.e., peer or teacher nominations, or self-reports) has meant that there has been a lack of uniformity in research findings and, more particularly, a lack of convergence with findings from other studies of childhood exposure to violence. For example, Groves (1999) noted that children who witness domestic violence repeatedly are more likely to require counseling to overcome the emotional and relationship difficulties they experience. In their meta-analysis of 118 studies of the psychosocial outcomes of children exposed to interparental violence, Kitzmann, Gaylord, Holt, and Kenny (2003) found that witnesses of interparental violence had significantly worse behavioral outcomes when compared with nonwitnesses. In addition, various studies exploring exposure to community or neighborhood violence have shown that child witnesses are more likely to exhibit poor school behavior, symptoms of emotional disturbance, depression, posttraumatic stress, drug and alcohol abuse, and in extreme cases, and suicidal tendencies (Fitzpatrick & Boldizar, 1993; Kirkpatrick et al., 2000; Kuther, 1999; Mazza & Reynolds, 1999).

There are several additional factors that suggest that witnessing the victimization of other peers may uniquely account for elevated mental health risks, over and above direct involvement as the primary bully or victim. In their study of victimization among sexual minority youth

(those who identify as gay, lesbian, or bisexual), D'Augelli, Pilkington, and Hershberger (2002) suggested that those who observe another sexual minority youth being victimized may experience many of the emotional and psychological effects of direct victimization, particularly if they were previously a victim. Thus, comparable to the model discussed by Kuther (1999), for some (e.g., those who are victimized in other settings) observing the victimization of peers at school may constitute a form of psychological revictimization or covictimization, increasing mental health risk and substance use (Russell, Frantz, & Driscoll, 2001). In addition for those struggling to "fit in" with their peers, observing others' victimization may heighten anxiety around their own vulnerability (Glover, Gough, Johnson, & Cartwright, 2000). Finally, as yet another possible indication that witnessing the victimization of other peers may contribute to elevated mental health concerns over and above bullying and victimization, Craig and Pepler (1997) suggested that those who observe others being bullied but do not become involved, experience a degree of cognitive dissonance resulting from a discrepancy in their behavioral intentions (e.g., to intervene when bullying occurs), and their actual actions (e.g., remaining uninvolved). This might also account for increased levels of mental health risk beyond what is account for by direct involvement as a bully or victim.

Currently, the literature suggests that there is a lack of consensus among researchers about the mental health implications of observing violence, particularly at school. Thus, to further contribute to the limited research that exists, we explored the multiple behavioral roles associated with school bullying, and tested the extent to which being a witness or bystander when bullying takes place impacts mental health and substance use.

Aims and Objectives

We hypothesized that perpetration of bullying and victimization would be significantly associated with multiple indicators of mental health risk and substance use. Furthermore, we hypothesized that witnessing peer victimization would be significantly associated with higher reported levels of mental health risk and substance use. We based this hypothesis on the

various arguments proposed in prior studies that witness status may uniquely affect the mental health of students (e.g., Craig & Pepler, 1997; D'Augelli et al., 2002; Kuther, 2002). In addition, we hypothesized that witnessing the victimization of other peers would predict elevated mental health risk over and above that predicted by direct involvement in bullying episodes as either perpetrator or victim. Finally, as a competing hypothesis, we tested whether witnessing victimization would predict higher levels of mental health concerns and substance use only among students who had also been victims. Specifically, we tested whether direct victimization moderated the association between witness status and mental health risk and substance use.

Method

Participants

The current study consisted of a representative sample of 2,002 pupils (55% boys, 45% girls) ages 12 to 16 years ($M = 13.60$, $SD = 1.06$) attending 14 public (state) schools in the North of England. In accordance with the approved classification system for ethnicity used in the 2001 United Kingdom Census, that majority of participants (91%) described themselves as "White" or "British White," 1.8% as of mixed/dual heritage, 1.3% as "Asian" or "British Asian," 0.4% as "Black" or "British Black," 0.3% as "Chinese," and 5.1% as "other." Participants represented approximately 50% of the students and schools initially identified as representative by the Local Education Authority (LEA). Of those students who did not participate, the majority attended schools where the project was perceived to be too great a disturbance on curricula activities (i.e., preparation for examinations), or where antibullying interventions were already in place. The remainder included those students who were absent on the days the surveys took place, or those who opted not to complete the surveys.

Procedure

All 14 schools were contacted and invited to participate in the study called "The Social Inclusion Project" by the LEA. Participating schools were generally representative of the region in terms of students' social-economic

background, sex, and ethnicity, and were chosen by the LEA, which ensured that the appropriate mix of urban and rural, coeducational and single-sex schools was achieved. The majority of schools were nondenominational. Prior to data collection, parents and guardians received consent letters from the head teachers (principals) of the participant schools. In line with LEA protocols at the time, students were not surveyed if parents, guardians, or primary caregivers confirmed orally or in writing that they did not wish their children to participate. Prior to data collection, researchers were introduced to the students by class teachers who discussed how the data would be collected and the types of questions they would answer. It was stressed that they could omit to answer any questions they felt were too personal, or made them feel uncomfortable. It was also stressed that they could opt not to complete the questionnaire, if they so chose on the day. Questionnaires were completed independently in class over a 40- to 60-min period. Each class was supervised by a member of the research team supported by a teacher. At the end of the data collection process, questionnaires were placed in envelopes and sealed. The head teacher (principal) of each school received an individualized report following data collection detailing prevalence rates of bullying by grade and sex to assist them and the LEA in the development of antibullying initiatives.

Measures

Perpetrator, Victim, and Witness Status

The 15-item antibullying inventory was adapted from the English version of the Olweus Bully/Victim Questionnaire (Olweus, 1994) and provided participants the opportunity not only to indicate whether they had experienced or perpetrated bullying behavior, but also witnessed one or more specific forms of that behavior during the current term (i.e., across a 9-week period). The inventory included an extended list of bullying behaviors not found in the original version of the questionnaire (i.e., called names about race or color, hit or kicked, called other names, rumors spread, no one speaks, frightened by a look or stare, belongings taken, threatened with violence, homework destroyed, graffiti written, pressured to smoke to-

bacco, drink alcohol, or take drugs) which were scored 0 = *No*, 1 = *Yes*. Students were also asked to estimate the frequency with which bullying occurred (1 = *Never* to 5 = *Several times a week*), and the various locations it happened (also an extended list), which included corridors, classrooms during lessons, school yard at recess, playing fields during physical education, school bus or bus stop, walking to and from school, lavatories, away from school, and other. We selected this measure because of its previous validation and use among similar adolescent samples and because we found these items to distinguish more clearly the witness status role from the bullying and victimization roles than the Participant Roles Questionnaire used to assess the roles identified by Salmivalli and colleagues (Salmivalli et al., 1997, 1996). The reliability coefficients for items assessing number of types of bullying behavior engaged in, victimization experienced, and witnessing bullying behavior were $\alpha = .68, .65, \text{ and } .79$, respectively. The reliability coefficients for the items assessing locations for bullying, victimization, and witnessing bullying behavior were $\alpha = .78, .76, \text{ and } .81$, respectively.

We used the students' reports of the different forms of bullying they perpetrated, experienced, or witnessed, together with the number of locations and estimates of frequency during the current term to calculate a chronic/severity index for perpetration, victimization, and witness status. For example, to compute the bullying chronicity score, we added the total number of types of bullying behavior reported by students, the frequency with which they engaged in bullying behavior, and the number of locations they reported engaging in bullying behavior. We followed analogous procedures to compute victimization and witness chronicity scores.

Mental Health Concerns

The 53-item adolescent version of the Brief Symptom Inventory (BSI; Derogatis, 1994), a shortened version of the Revised Symptom Checklist (SCL-90-R; Derogatis & Cleary, 1977), provides mean scores (range = 0–4) on nine dimensions of psychopathology or psychological distress: somatization (7 items; e.g., faintness, heart/chest pains), obsessive-compulsiveness (6 items; e.g., checking and double-checking things, difficulties concentrating), in-

terpersonal sensitivity (4 items; e.g., feelings hurt, feelings of inferiority), depression (6 items; e.g., suicidal ideation, hopelessness), anxiety (6 items, e.g., nervousness, restlessness), hostility (5 items; e.g., annoyance/irritation, urges to inflict harm on another), phobic anxiety (5 items; e.g., afraid of open spaces, uneasiness in crowds), paranoid ideation (5 items; e.g., blaming others for own misfortunes, distrust of others), and psychoticism (5 items; e.g., beliefs of being punished for sins, others controlling thoughts). Reliability coefficients for the subscales ranged from $\alpha = .71$ (Psychoticism) through $\alpha = .85$ (Depression) in the current study.

We used the data from students who reported no involvement in bullying behavior at school (i.e., those who reported they were not victims, perpetrators, and rarely, if ever, witnessed bullying within the past nine weeks) as the comparison group to transform the BSI raw mean scores into *T* scores because appropriate norms are not already available for a nonclinical United Kingdom sample. Also, because BSI scores are often presented as *T* scores, we felt that using this comparison group to compute the *T* scores would provide a better contextualization of the descriptive statistics for these scores than would raw mean scores on each subscale. We used the mean and standard deviation of scores on the respective BSI subscale from participants in the "no involvement" comparison group to compute the *z*-scores for all participants, which we then transformed into *T* scores using the standard formula of $T = 50 + (10 \times z_i)$.

Common Student Concerns

Common student concerns and worries were assessed using 17 items that were of interest to the researchers and LEA (e.g., schoolwork or examinations, sex, being lesbian or gay, drugs, alcohol, weight, size or body shape, friendships, problems at home). Students were asked to indicate each item for which they were currently concerned (0 = *No*, 1 = *Yes*). The reliability coefficient for the items was $\alpha = .71$.

Substance Use

Items related to exposure to alcohol and other drugs were adapted from questions drawn from

1999 Youth Risk Behavior Survey (see Centers for Disease Control and Prevention, 2006). Pupils were asked to indicate whether or not they tried or used cigarettes, alcohol, Cocaine, Cannabis/Marijuana, glue/sprays/aerosols/paint, nail polish, heroine, speed/amphetamines, Ecstasy or any other drug (e.g., Magic Mushrooms, Poppers [Amyl Nitrate], Lysergic Acid Diethylamide [LSD]). Items were score 0 = *No*, 1 = *Yes*. The reliability coefficient for the items was $\alpha = .70$.

Results

Participant Roles in Bullying Behavior

Overall, approximately 20% of pupils reported some perpetration of bullying behavior in the current term, and approximately 34% of pupils reported experiencing victimization. In contrast, the majority of pupils (63%) reported having witnessed peers being bullied during the current term. When examining multiple perpetrator-victim-witness combinations (see Table 1 for details regarding gender), only 27.6% of students were identified as completely uninvolved in bullying episodes during the current term (i.e., they did not report perpetrating bullying, they were not victims, nor had they witnessed bullying during the past nine weeks), 1.4% reported being perpetrators of bullying only, 6.7% reported being victims only, 30.4% were witnesses only, 1.3% were identified as "bully victims" (i.e., reporting both perpetration and victimization during the current term), 6.7% reported being both perpetrators and witnesses, 15.2% as reported being both victims and witnesses, and 10.7% reported being perpetrators in some situations, as well as victims and witnesses in others. Overall, the results demonstrate that bullying was part of the daily lives of the majority of students.

We did not find gender differences on the total number of types of bullying perpetrated by students, $F(1, 1974) = 2.91, p > .05$, or experienced by students as victims, $F(1, 1977) = 0.41, p > .05$, but we did identify a small significant gender difference, based on the partial-eta squared effect size indicator (Cohen, 1988), in the total number of types witnessed by students, $F(1, 1974) = 6.69, p = .01, \eta^2 = .003$; girls reported slightly more observations of bullying than boys. We documented the same

Table 1
Bullying, Victimization, and Witness Roles Group Membership

Status	n (%)		
	Boys (N = 1,095)	Girls (N = 895)	Total (N = 1,990)
No involvement	323 (29.5)	226 (25.3)	549 (27.6)
Witness only	315 (28.8)	290 (32.4)	605 (30.4)
Victimization only	79 (7.2)	54 (6.0)	133 (6.7)
Bullying only	17 (1.6)	12 (1.3)	29 (1.4)
Bullying and victimization	15 (1.3)	10 (1.1)	25 (1.3)
Bullying and witness	82 (7.5)	51 (5.7)	133 (6.7)
Victimization and witness	144 (13.2)	159 (17.8)	303 (15.2)
Bullying, victimization, and witness	120 (10.9)	93 (10.4)	213 (10.7)

Note. N = 1,990. Twelve participants were missing data that prevented classification.

pattern of results for the chronicity scores of bullying ($p > .05$), victimization ($p > .05$), and witness status, $F(1, 1917) = 8.03$, $p < .01$, $\eta^2 = .004$.

Bullying Roles, Mental Health Risks, and Substance Use

Descriptive statistics and correlations among the bullying episode roles (i.e., severity of perpetration, victimization, and observation), men-

tal health risks, and substance use are presented in Tables 2 and 3. As hypothesized, these roles were significantly associated with each risk indicator. For perpetration, associations ranged from $r = .12$ (nonclinical concerns) through $r = .34$ (substance use). The sizes of associations for witness status ranged from $r = .15$ (phobic anxiety) through $r = .28$ (paranoid ideation). Associations among victimization severity and risk indicators ranged from $r = .25$ (obsessive-compulsiveness) through $r = .38$ (interpersonal

Table 2
Descriptive Statistics for Included Measures

	Boys		Girls	
	Range	M (SD)	Range	M (SD)
Bullying chronicity	0.00–19.00	0.95 (2.32)	0.00–23.00	0.91 (2.00)
Victim chronicity	0.00–22.00	1.67 (3.07)	0.00–19.00	1.87 (2.89)
Witness chronicity	0.00–26.00	4.34 (4.80)	0.00–27.00	4.97 (4.88)
Somatization	42.74–106.12	52.15 (11.54)	42.74–106.12	53.68 (11.66)
Obsessive-compulsive	41.13–96.12	52.60 (11.49)	41.13–96.12	53.36 (11.84)
Interpersonal sensitivity	42.21–92.92	51.95 (11.26)	42.21–92.92	55.76 (12.63)
Depression	43.26–98.57	52.07 (11.66)	43.26–98.57	54.74 (12.56)
Anxiety	42.96–109.15	52.16 (11.65)	42.96–109.15	54.34 (12.53)
Hostility	41.30–88.47	54.00 (12.19)	41.30–88.47	53.72 (11.74)
Phobic anxiety	44.53–112.90	51.58 (11.38)	44.53–112.90	52.67 (11.86)
Paranoid ideation	41.54–93.26	53.56 (11.44)	41.54–93.26	54.67 (11.82)
Psychoticism	43.84–106.64	52.73 (12.00)	43.84–106.64	53.48 (11.87)
Nonclinical concerns	0.00–14.00	1.28 (1.92)	0.00–17.00	1.99 (2.09)
Substance use	0.00–9.00	1.36 (1.25)	0.00–9.00	1.38 (1.25)

Note. Bullying, victim, and witness chronicity scores were computed using the formula: number of types of bullying/victimization/witness + frequency of bullying/victimization/witness + number of locations for bullying/victimization/witness. Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism are the subscales of the Brief Symptom Inventory (BSI). Nonclinical concerns = total number of nonclinical concerns participants reported; substance use = total number of substances (i.e., alcohol and other drugs) used by participants. *T*-scores for the BSI subscales were calculated using the mean and *SD* of scores on the respective subscale from participants in the "no involvement" comparison group to compute the *z* scores for all participants, which were then transformed into *T* scores using the standard formula of $T = 50 + (10 \times z)$. Raw mean score ranges on the BSI subscales were 0 to 4.

Table 3
Correlations Among Bullying, Victimization, and Bystander Chronicity and Mental Health Measures

Scale	Bully	Victim	Witness	BSI-1	BSI-2	BSI-3	BSI-4	BSI-5	BSI-6	BSI-7	BSI-8	BSI-9	NCC	Substance use
Bully	—													
Victim	.24***	—												
Witness	.37***	.33***	—											
BSI-1	.18***	.26***	.23***	—										
BSI-2	.19***	.25***	.24***	.69***	—									
BSI-3	.14***	.38***	.24***	.61***	.63***	—								
BSI-4	.19***	.34***	.22***	.69***	.71***	.77***	—							
BSI-5	.15***	.30***	.20***	.74***	.73***	.71***	.79***	—						
BSI-6	.28***	.30***	.26***	.59***	.67***	.61***	.66***	.64***	—					
BSI-7	.14***	.29***	.15***	.64***	.61***	.61***	.65***	.71***	.50***	—				
BSI-8	.18***	.36***	.27***	.63***	.69***	.76***	.75***	.70***	.68***	.62***	—			
BSI-9	.14***	.27***	.17***	.68***	.70***	.70***	.79***	.75***	.61***	.64***	.72***	—		
NCC	.12***	.27***	.23***	.21***	.24***	.29***	.29***	.24***	.23***	.21***	.28***	.22***	—	
Substance use	.34***	.05	.17***	.21***	.20***	.10***	.17***	.15***	.27***	.10***	.15***	.15***	.13***	—

Note. $N = 2,002$. Bully, Victim, and Witness = chronicity scores of bullying behavior, victimization, and witness status from the Anti-Bullying Questionnaire; BSI = Brief Symptom Inventory; BSI-1 = Somatization; BSI-2 = Obsessive-Compulsive; BSI-3 = Interpersonal Sensitivity; BSI-4 = Depression; BSI-5 = Anxiety; BSI-6 = Hostility; BSI-7 = Phobic Anxiety; BSI-8 = Paranoid Ideation; BSI-9 = Psychoticism; NCC = Nonclinical common concerns.

*** $p < .001$.

sensitivity). To test for gender differences on risk indicators, we first conducted a multivariate analysis of variance (MANOVA) with the BSI subscales, nonclinical concerns, and substance use entered as dependent variables and gender entered as the independent variable. Results indicated significant gender differences, Wilks's $\Lambda = .92$, $F(11, 1717) = 14.04$, $p < .001$, $\eta^2 = .08$. Follow-up univariate analyses of variance (ANOVAs) indicated significant gender differences on the following BSI subscales: Somatization, $F(1, 1727) = 6.50$, $p = .01$, $\eta^2 = .004$; Interpersonal Sensitivity, $F(1, 1727) = 42.63$, $p < .001$, $\eta^2 = .02$; Depression, $F(1, 1727) = 16.99$, $p < .001$, $\eta^2 = .01$; Anxiety, $F(1, 1727) = 12.37$, $p < .001$, $\eta^2 = .01$; non-clinical concerns, $F(1, 1727) = 49.51$, $p < .001$, $\eta^2 = .03$. In all cases girls' scores on the subscales were higher than boys'; however, it should be noted that effect sizes indicated these differences to be small.

Bully Roles Predicting Mental Health and Substance Use Risks

To test our hypothesis that witnessing the victimization of other peers would predict elevated mental health risks and substance use over and above direct involvement in bullying episodes as either a perpetrator or a victim, we conducted multiple regression analyses with the *T* scores for the BSI subscales and scores on substance use as dependent variables and the chronic/severity indices of perpetration, victimization, and observation as independent variables. In these models, we also included gender as an independent variable for the cases in which gender differences were significant on the specific dependent variable. As hypothesized, witnessing the victimization of peers uniquely and significantly predicted elevated reported mental health risks on multiple BSI indicators, even after controlling for the effect of also being a perpetrator or victim (range of $\beta = .07$ to $.15$; Table 4). Furthermore, whereas bullying chronicity was not itself a significant predictor of elevated risk on Interpersonal Sensitivity, both being a victim and being a witness to the bullying of others were significant predictors of elevated risk for this subscale. In a model predicting common nonclinical student concerns, being a victim ($\beta = .20$) and being a witness to the victimization of others ($\beta = .15$) were found to be significant predictors, however, perpetration was not a signif-

icant predictor (see Table 4). Furthermore being a perpetrator ($\beta = .32$) and being a witness to the victimization of others ($\beta = .06$) each predicted elevated levels of substance use, however, being a victim did not (see Table 4).

We conducted hierarchical regression analyses to test for the moderating effect of victimization on the association between witness status and higher levels of mental health risk and substance use. As a test of moderation, in these analyses we examined whether elevated risk on mental health and substance use was associated with witnessing the bullying of other students only for those students who had themselves been the direct target of victimization in other situations. To reduce the effects of multicollinearity, we centered victimization and bystander scores (Aiken & West, 1991) and entered these variables as main effects on Step 1, along with bullying scores. We then entered the interaction effect between victimization and witness indices on Step 2 of the model to test the significance of the moderating effect and the extent to which it contributed to an increased amount of explained variance in the overall model. Results indicated that the moderating effect was not significant (range of $\beta = -.003$ to $-.06$) and did not contribute to explaining a substantial amount of variance in any of the models. Thus, the negative effects of witnessing others being bullied were not dependent on having been a target of victimization in other circumstances.

Discussion

The results from this study suggest that observing the victimization of other peers can have a significant negative impact on multiple indicators of mental health. Furthermore, the nonsignificant moderating effect of victimization on the association between witnessing bullying and experiencing elevated mental health risks suggests that observing victimization can negatively impact psychological functioning even in cases where students themselves have not been victimized in other settings or at other times. In addition, our finding that bullying and witnessing the victimization of other peers each predicted higher levels of substance use suggests that students who witness bullying may share some commonalities with those who engage in bullying behavior.

Table 4
Predicting Mental Health Risks From Bullying Roles

Model and independent variables	<i>b</i>	<i>SE (b)</i>	β	<i>R</i> ²
Somatic complaints ^a				.10
Gender	1.12	.52	.05*	
Perpetration	0.49	.14	.09***	
Victimization	0.74	.10	.19***	
Witness	0.32	.06	.13***	
Obsessive-compulsiveness ^b				.10
Perpetration	0.52	.14	.09***	
Victimization	0.76	.10	.19***	
Witness	0.34	.06	.14***	
Interpersonal sensitivity ^c				.18
Gender	3.28	.52	.14***	
Perpetration	0.12	.14	.02	
Victimization	1.37	.09	.33***	
Witness	0.29	.06	.12***	
Depression ^d				.14
Gender	2.16	.53	.09***	
Perpetration	0.49	.14	.08***	
Victimization	1.17	.10	.28***	
Witness	0.24	.06	.10***	
Anxiety ^e				.10
Gender	1.59	.54	.07**	
Perpetration	0.33	.14	.06*	
Victimization	0.98	.10	.24***	
Witness	0.23	.06	.09***	
Hostility ^f				.15
Perpetration	1.04	.14	.18***	
Victimization	0.94	.10	.23***	
Witness	0.28	.06	.11***	
Phobic Anxiety ^g				.09
Perpetration	0.32	.13	.06*	
Victimization	1.01	.09	.26***	
Witness	0.10	.06	.04	
Paranoid ideation ^h				.16
Perpetration	0.27	.13	.05*	
Victimization	1.18	.09	.30***	
Witness	0.36	.06	.15***	
Psychoticism ⁱ				.09
Perpetration	0.33	.14	.06*	
Victimization	0.98	.10	.24***	
Witness	0.18	.06	.07**	
Nonclinical common concerns ^j				.11
Gender	0.60	.09	.15***	
Perpetration	0.01	.02	.02	
Victimization	0.14	.02	.20***	
Witness	0.06	.01	.15***	
Substance use ^k				.12
Perpetration	0.19	.01	.32***	
Victimization	-0.01	.01	-.03	
Witness	0.02	.01	.06*	

^a $F(4, 1788) = 48.48, p < .001$. ^b $F(3, 1792) = 66.87, p < .001$. ^c $F(4, 1794) = 98.66, p < .001$. ^d $F(4, 1795) = 74.71, p < .001$. ^e $F(4, 1791) = 50.74, p < .001$. ^f $F(3, 1784) = 105.42, p < .001$. ^g $F(3, 1784) = 58.25, p < .001$. ^h $F(3, 1789) = 112.88, p < .001$. ⁱ $F(3, 1789) = 57.37, p < .001$. ^j $F(4, 1869) = 60.08, p < .001$. ^k $F(3, 1721) = 76.62, p < .001$.

* $p < .01$. ** $p < .01$. *** $p < .001$.

Understanding the Role and Effects of Witness Status

There are several potential explanations for why witnessing the victimization of other peers can result in elevated mental health risks over and above that which is predicted by perpetration and victimization. It is possible that those individuals victimized in other settings may be experiencing psychological revictimization or indirect covictimization through their empathic understanding of the suffering of the victim they observe (D'Augelli et al., 2002). Indeed, this would account for the increased levels of risk we observed in terms of anxiety and paranoid ideation. Alternatively, witnesses may worry about or assume that they too will be victimized at some point and this may account for the higher levels of interpersonal sensitivity we observed. Finally, in line with Craig and Pepler's (1997) observation, some students who witness others being bullied, but who are nevertheless not directly involved, may experience a degree of cognitive dissonance resulting from the discrepancy between their desire to intervene and their lack of action. This could account for the increased levels of risk we observed on hostility. More broadly, our findings align with those indicating that children and adolescents who are exposed to forms of violence often experience elevated psychological, and social concerns (Groves, 1999; Kitzmann et al., 2003). Combined, these factors (i.e., psychological revictimization, fear of subsequent direct victimization, and cognitive dissonance) reflect unique psychological strains that can accompany witnessing the victimization of peers, apart from those associated with direct involvement as one who engages in bullying or is victimized.

In this study, the majority of students (63%) indicated that they had witnessed peers being victimized in the past 9-week term. Our findings parallel those of Smith and Shu (2000), who estimated that approximately 66% of a school's population has a primary (perpetrator and/or victim) or secondary (bystander) role in bullying episodes. These findings underscore the need for research into the experiences of students who observe bullying at school. Notwithstanding, rates of perpetration and victimization were higher than other studies conducted at secondary school levels: 25% and 39%, respectively (see Juvonen et al., 2003; Nansel et al., 2001; Smith, Mortia, Junger-Tas,

Olweus, Catalano, & Slee, 1999). Although some researchers have questioned the use of self-reports in estimating the prevalence of bullying without peer and teacher nomination strategies (Juvonen & Graham, 2001; Pellegrini & Bartini, 2000), it is not always the case, particularly with indirect bullying, that teachers or other students are aware of it taking place (Pellegrini & Bartini, 2000; Van der Wal, de Wit, & Hirasing, 2003). In addition, while we acknowledge that in some studies participants who complete self-report questionnaires may underreport the prevalence of bullying, or provide socially desirable answers, in this study we took care to ensure that rapport and trust were established among the local authority officers, teachers, students, and the research team. In particular, efforts were made to assure students that neither parents nor teachers would see their completed questionnaires except in cases where child protection issues arose. Furthermore, in the majority of schools the researchers were familiar faces to both students and to teachers. Thus we endeavored to ensure that the objectives of the study and the data gathering process were transparent, and that the inventories and measures used were not opaque.

In addition, our adaptation of the Olweus Bully/Victim Questionnaire, which included mirror items for those who had witnessed bullying as well as those who had been perpetrators and victims, provided some support for Salmivalli et al.'s (1996) classification of bystanders in that those who witnessed bullying shared commonalities with perpetrators that were characteristic of the behaviors of "assistants" or "reinforcers." It was interesting to note that we found higher rates of substance use among those students who were perpetrators in some situations and also witnesses in others, when compared with those who had alternative roles. Olweus (1993) noted in his follow-up study that substance use was a characteristic of some perpetrators, which again suggests that perhaps those with the dual roles of perpetrator and witness were more active in their secondary or observer roles than passive. By using a behavioral inventory such as the adapted version of the Olweus Bully/Victim Questionnaire we were able to control for co-occurring participant roles and thus directly assess the impact of bullying upon those who not only have multiple roles in bullying at school but also those who have single roles as perpetrators, victims and, most significantly, witnesses.

Implications for School Psychologists and School Personnel

The current findings indicate a need for school principals, teachers, and school psychologists to be aware of the possible impact that witnessing bullying can have upon the mental health of their students. In addition to discussing actual victimization experiences, school psychologists might also discuss with students and with parents the emotional impact bullying can have upon those who witness it, and how it can affect the way in which they react to situations where others are victimized. Interventions are needed that include and engage students who are not victims themselves but who are aware of victimization taking place, as these students can play a positive role in enhancing the school environment (Frey et al., 2005; Hawkins et al., 2001; Vreeman & Carroll, 2007). Although students involved in the primary bullying and victimization role may be most visible to teachers, administrators, and school psychologists, there is a need for greater awareness that bullying episodes involve multiple individuals in various roles, including a large number of students who witness these episodes. School psychologists might work with students who witness bullying to identify and practice positive behavioral strategies to counter bullying, foster empathy or to build personal and interpersonal strengths so they can take on the role of “*defender*” rather than “*outsider*” (see Richards, Rivers, & Akhurst, 2008). Indeed, whole school early interventions have been shown to be particularly effective in reducing psychological distress in the most extreme situations (i.e., following the suicide of a student; see Brock, 2002; Mauk & Rodgers, 1994). School psychologists, in both their professional training and responsibilities to the school, are positioned to play a substantial role in these prevention and intervention efforts.

Strengths and Limitations of the Current Study

Overall, our findings add support to previous studies that recommend whole school approaches to tackling bullying. It further adds to our knowledge by examining the mental health correlates of bullying behavior for stu-

dents in roles other than those of perpetrator and victim. The main strength of this study lies in the identification of the nature of the psychological distress experienced by those who witness bullying at school. An additional strength lies in the fact that our study included a large participant sample from multiple schools in the North of England. Nevertheless, there remain limitations that should be noted. First, while the use of self-report measures for perpetrators, victims, and witnesses of bullying have been found to have a high degree of convergence with peer and teacher nominations (see Espelage, Holt, & Henkel, 2003; Olweus, 1994), there is a continued need to incorporate multiple methods of examining bullying among students. This may be particularly important where there is not an opportunity to build a rapport between researchers, school staff, and students to the degree that was possible in this study. Second, although perpetration, victimization, and being a witness each significantly predicted higher levels of reported mental health risks among students, a considerable amount of variance remained to be accounted for in our regression models. Consequently, this study provides an insight into the potential implications of bullying behavior on mental health, but our results should not be interpreted too widely. For example, we were unable to assess students for preexisting mental health problems, nor were we given the opportunity to explore with them the length of time and severity of bullying they perpetrated, experienced, or witnessed beyond one school term (i.e., 9 weeks). Finally, although we included a large and representative sample of students the targeted region of the North of England, students who participated may differ in certain ways from students who did not participate. However, we note that many of our findings with regard to bullying and victimization were convergent with those documented in previous studies.

Future Directions for Research

Given the amount of variance yet to be accounted for in our regression models, it seems likely that elevated mental health risk during adolescence is caused by a combination of stressors, and while this can include bullying at school, it is also likely to include a range of other factors associated with adolescence such

as the establishment of social and romantic relationships, family dynamics, and academic attainment. Similarly, although we found that student reports of their bullying experiences predicted higher mental health risk, overall it should be noted that levels of reported concerns were not noticeably high. However, as this study was conducted among a nonclinical sample of students, we expected that their concerns would be within a nonclinical range. Future research might examine those adolescents who do meet clinical classification levels for diagnoses such as depression or anxiety to determine whether perpetrating, witnessing, and being a victim of bullying behavior have lesser or greater predictive effects on current psychological functioning when compared with those found in this study. We would also argue that future research should differentiate between potential types of active and passive witness or observer statuses that have been suggested by other researchers (Salmivalli et al., 1996). Although our results indicated that the perpetration, victimization, and witnessing of bullying behavior were significant predictors of higher levels of concurrent mental health risk, a longitudinal study would provide a better means of assessing the effects of these participant roles on the well-being of our school populations. In conclusion, greater attention to the roles of those who witness bullying and the implications of witness status are needed in both research and practice as part of the larger effort to address bullying within schools.

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