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## Brief report: Associations between in-person and electronic bullying victimization and missing school because of safety concerns among U.S. high school students

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### Abstract

Although associations between bullying and health risk behaviors are well-documented, research on bullying and education-related outcomes, including school attendance, is limited. This study examines associations between bullying victimization (in-person and electronic) and missing school because of safety concerns among a nationally representative sample of U.S. high school students. We used logistic regression analyses to analyze data from the 2013 national Youth Risk Behavior Survey of students in grades 9–12. In-person and electronic victimization were each associated with increased odds of missing school due to safety concerns compared to no bullying victimization. Having been bullied both in-person and electronically was associated with greater odds of missing school compared to electronic bullying only for female students and in-person bullying only for male students. Collaborations between health professionals and educators to prevent bullying may improve school attendance.

### Keywords

Bullying; Cyberbullying; Adolescence; School absenteeism

### Introduction

Associations between bullying and health risk behaviors are well-documented (Sigurdson, Wallander, & Sund, 2014). However, limited research examines bullying and education-related outcomes, including school attendance, a gap recognized in the scientific literature (Beran & Li, 2007; Dake, Price, & Telljohann, 2003) and recently highlighted in the popular media. In 2013, *The Atlantic* published a critique of a commonly cited figure—more than 160 000 students miss school each day to avoid being bullied—noting that the data source is unclear and outdated (Barkhorn, 2013). However, the author acknowledged how such a statistic can galvanize support for bullying prevention (Barkhorn, 2013), suggesting that

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additional research is needed to better understand the relationship between bullying and missing school.

According to the 2013 national Youth Risk Behavior Survey (YRBS), 7.1% of U.S. high school students did not attend school at least once during the prior 30 days because of safety concerns (Kann et al., 2014). However, this statistic could reflect students who felt unsafe for reasons other than bullying, such as living in a high-crime neighborhood. The current study uses YRBS data to document links between bullying and absenteeism by examining associations between bullying victimization and missing school because of safety concerns. Given increasing attention to electronic bullying as a distinct type of bullying (Cassidy, Faucher, & Jackson, 2013), this study specifically explores electronic bullying in addition to in-person bullying at school.

## Method

Data from the 2013 YRBS conducted among a nationally-representative sample of U.S. high school students in grades 9–12 were used ( $n = 13\,583$ ). The national YRBS procedures were approved by the Centers for Disease Control and Prevention’s Institutional Review Board and are described elsewhere (Kann et al., 2014). Participants answered two items about bullying victimization: “During the past 12 months, have you ever been bullied on school property?” (hereafter referred to as in-person) and “During the past 12 months, have you ever been electronically bullied? (include being bullied through e-mail, chat rooms, instant messaging, Web sites, or texting.)” Responses from both questions were used to create a categorical predictor variable: 1-bullied in-person *and* electronically; 2- bullied only in-person; 3- bullied only electronically; and 4- not bullied. The outcome variable was dichotomized so that students who reported missing school 1 day(s) during the past 30 days because they felt they would be unsafe at school or on the way to or from school were considered to be missing school because of safety concerns.

Chi-square tests examined bivariate differences in bullying prevalence by demographic characteristics. Logistic regression models were used to explore associations between bullying victimization and missing school because of safety concerns. The models were stratified by sex given that girls and boys may be differentially involved in bullying (Nansel et al. 2001; Wang, Jannotti, & Nansel, 2009). Adjusted analyses controlled for grade, race/ethnicity, and physical fighting on school property during the past 12 months. Weighted data were analyzed with SUDAAN version 9.3 (RTI International, Research Triangle Park, NC) to account for the complex sampling design.

## Results

About one-quarter (25.2%) of students experienced bullying during the past 12 months. Overall, 9.2% were bullied both in-person and electronically, 10.4% were bullied only in-person, and 5.6% were bullied only electronically (Table 1). Among bullied students, 15.5% missed 1 day(s) of school because of safety concerns during the past 30 days compared to 4.1% of students who were not bullied ( $p < 0.0001$ ).

Comparing types of bullying victimization to no victimization (Table 2), in-person and electronic bullying victimization were independently associated with missing school because of safety concerns among both male and female students, even when adjusting for physical fighting on school property. Similarly, female and male students who experienced both types of bullying had more than five and six times the odds, respectively, of missing school because of safety concerns (Female AOR = 5.34, 95% CI = 3.72–7.66; Male AOR = 6.68, 95% CI = 4.73–9.42).

Some differences between female and male students were observed when comparing types of bullying. Female students experiencing both types of bullying had greater odds of missing school compared to those bullied only electronically (AOR = 2.54, 95% CI = 1.33–4.83). Female students bullied only in-person had greater odds of missing school because of safety concerns compared to those bullied only electronically (AOR = 1.76, 95% CI = 1.09–2.83). Male students experiencing both types of bullying had greater odds of missing school compared to those bullied only in-person (AOR = 2.37, 95% CI = 1.55–3.64).<sup>1</sup>

## Discussion

This study provides the first nationally representative estimates of increased risk of missing school due to safety concerns associated with in-person, electronic, and both types of bullying among U.S. high school students. The prevalence estimate that 15.5% of bullied students missed school one or more days in the previous 30 days because of safety concerns equates to over 600 000 of the more than 16 million enrolled secondary school (public and private) students in 2011–2012 (NCES 2014a, 2014b). Moreover, we found that each type of bullying, alone and in combination, was associated with increased likelihood of missing school. Although null associations between bullying and absenteeism have been found (Dake et al., 2003; Glew, Fan, Katon, Rivara, & Kernic, 2005), our findings are consistent with prior studies that showed risk associations between having been bullied and missing school (Beran & Li, 2007; Dake et al., 2003). Such correlations are unsurprising. However, documenting these associations using national data can garner support for bullying prevention.

Importantly, the findings suggest that students experiencing multiple types of bullying, including in-person and electronic, may have a greater likelihood of missing school because of safety concerns compared to students experiencing a single type of bullying. Although the patterns of this finding differed for female and male students (for females it was compared to electronic bullying only whereas for males it was compared to in-person bullying only), the potential for some type of additive effect warrants additional consideration. Previous research also indicates that multiple forms of bullying may be associated with greater likelihood of negative outcomes (Schneider, O'Donnell, Stueve, & Coulter, 2012), and such findings suggest that educators, who are held accountable for students' academic success, have a vested interest in addressing electronic bullying to mitigate possible consequences such as absenteeism.

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<sup>1</sup>Data presented in-text only.

By examining in-person and electronic bullying separately and in combination, this study highlights the need for continued attention to in-person bullying while also emphasizing the importance of electronic bullying prevention for schools. Overall, in-person bullying was more prevalent than electronic bullying and was associated with greater risk of missing school compared to electronic bullying among female students. Compared to no bullying victimization, electronic bullying was associated with missing school because of safety concerns, both independently and co-occurring with in-person bullying. Even though electronic bullying may occur beyond school boundaries, these findings suggest that this type of bullying may be a risk factor for absenteeism.

This study has several limitations. Because YRBS is conducted among students in grades 9–12, results are not generalizable to students in other grades or college. Students absent from school the day of the survey may be excluded from analyses, although make-up survey administrations minimize this concern. Additionally, the survey asks almost exclusively about risk behaviors, precluding us from controlling for other potential confounders of the association between bullying victimization and missing school because of safety concerns. It is possible that safety-related factors other than bullying victimization, such as neighborhood crime, may explain the observed associations. Finally, with cross-sectional data, causality cannot be determined.

Despite these limitations, this study provides valuable national estimates of the associations between bullying—in-person and electronic—and missing school because of safety concerns. The findings highlight a potential education-related consequence of bullying, adding to growing evidence of bullying's negative impacts. Given that absenteeism is associated with many health risk behaviors (Eaton, Brener, & Kann, 2008), this study can support education *and* health professionals' efforts to implement bullying prevention activities. Closer collaboration between health and education professionals, already encouraged by other researchers (Bradley & Greene, 2013), may be particularly beneficial for bullying prevention.

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**Table 1**

Prevalence of bullying victimization by sex, race/ethnicity, and grade, National Youth Risk Behavior Survey, 2013

	<b>In-person and electronic (n = 1144)</b>	<b>In-person only (n = 1355)</b>	<b>Electronic only (n = 732)</b>	<b>Not bullied (n = 10 256)</b>	<b>p-value<sup>a</sup></b>
	<b>% (95% CI)</b>	<b>% (95% CI)</b>	<b>% (95% CI)</b>	<b>% (95% CI)</b>	
Total	9.2 (8.5–10.0)	10.4 (9.8–11.2)	5.6 (5.0–6.2)	74.8 (73.3e76.2)	
<b>Sex</b>					<0.0001
Female	13.1 (11.8–14.5)	10.6 (9.9–11.4)	7.9 (6.9–9.0)	68.4 (66.4–70.3)	
Male	5.3 (4.7–6.0)	10.2 (9.2–11.4)	3.3 (2.7–4.0)	81.2 (79.5–82.9)	
<b>Race/ethnicity</b>					<0.0001
Non-Hispanic Black	4.3 (3.6–5.1)	8.4 (7.1–9.9)	4.4 (3.4–5.7)	82.9 (81.0–84.6)	
Hispanic	7.7 (6.4–8.2)	10.0 (8.7–11.6)	5.1 (4.2–6.2)	77.2 (74.7–79.4)	
Non-Hispanic White	10.8 (9.8–12.0)	10.9 (9.8–12.2)	6.1 (5.2–7.1)	72.2 (69.8–74.4)	
<b>Grade</b>					<0.0001
9th	11.4 (9.9–13.1)	13.6 (12.3–15.0)	4.7 (3.8–5.8)	70.3 (67.9–72.7)	
10th	9.6 (8.3–11.2)	12.6 (11.0–14.4)	4.8 (3.9–6.1)	73.0 (70.3–75.5)	
11th	8.5 (7.0–10.3)	8.3 (7.1–9.7)	6.4 (5.4–7.5)	76.9 (74.5–79.0)	
12th	6.8 (5.8–7.9)	6.6 (5.3–8.1)	6.7 (5.9–7.7)	80.0 (77.7–82.1)	

CI = confidence interval.

<sup>a</sup>P-values compare distributions (chi-square statistics) of bullying victimization by demographic characteristics.

**Table 2**

Associations between bullying victimization and missing school because of safety concerns, National Youth Risk Behavior Survey, 2013.

	Female students		Male students	
	Prevalence <sup>a</sup> % (95% CI)	AOR <sup>b</sup> (95% CI)	Prevalence <sup>a</sup> % (95% CI)	AOR <sup>c</sup> (95% CI)
<b>Bullying victimization</b>				
In-person and electronic	21.7 (17.2, 27.0)	5.34 (3.72–7.66)	19.9 (14.9–26.1)	6.68 (4.73–9.42)
In-person only	15.9 (12.3–20.4)	3.70 (2.47–5.55)	9.9 (7.4–12.9)	2.81 (2.04–3.89)
Electronic only	9.9 (6.4–15.1)	2.10 (1.19–3.70)	13.1 (7.4–22.1)	3.58 (1.84–6.97)
Not bullied	4.9 (3.7–6.3)	ref	3.5 (2.7–4.4)	ref
<b>Physical fighting at school</b>				
Involved	19.5 (15.0–25.0)	2.09 (1.47–2.96)	15.5 (11.6–20.4)	3.27 (2.27–4.71)
Not involved	7.8 (6.5–9.5)	ref	4.0 (3.1–5.0)	ref
<b>Race</b>				
Black	8.0 (6.0–10.6)	1.44 (0.92–2.24)	7.8 (5.7–10.7)	2.42 (1.67–3.49)
Hispanic	12.6 (10.2–15.4)	2.09 (1.44–3.04)	6.9 (5.3–9.0)	1.98 (1.35–2.90)
White	7.4 (5.7–9.5)	ref	3.8 (2.9–4.9)	ref
<b>Grade</b>				
9th	9.8 (8.2–11.8)	1.22 (0.85–1.75)	5.5 (4.2–7.2)	0.90 (0.57–1.42)
10th	10.7 (7.8–14.6)	1.45 (0.96–2.18)	5.3 (3.9–7.2)	1.05 (0.72–1.52)
11th	8.1 (6.3–10.4)	1.22 (0.75–1.98)	5.8 (4.2–7.8)	1.12 (0.77–1.65)
12th	5.9 (4.1–8.3)	ref	5.0 (3.7–6.7)	ref

AOR = adjusted odds ratio; CI = confidence interval.

<sup>a</sup>Prevalence of missing school because of safety concerns by type of bullying victimization.

<sup>b</sup>n = 6535.

<sup>c</sup>n = 6432.