Opportunistic Screening for Exposure to Bullying in the Pediatric Emergency Department

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Abstract
To assess opportunistic screening for exposure to bullying in the pediatric emergency department (ED), an anonymous survey inquiring about exposure to physical, verbal, social, and cyber bullying behaviors was given to ED patients 5 to 18 years old. The survey asked about being the recipient, perpetrator, and/or witness of bullying; the frequency of exposure; liking school; missing school; and presenting complaint. Either the child or parent could complete the survey. A total of 909 surveys were analyzed. Exposure was 78.7%. A greater proportion of females reported being victims and witnesses. Youth who reported being both victims and witnesses represented the largest group, with witness-only the second largest. Parents reported less cyber-bullying and witness status to all types of bullying. For children who did not like school, there was a significant difference in exposure versus nonexposure. There was no association with presenting complaint. Opportunistic screening for bullying exposure in pediatric ED patients warrants consideration as it may increase detection of preclinical status and clinical sequelae.

Keywords
bullying, screening, emergency medicine, adolescent medicine, general pediatrics

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Bullying is a public health threat to the nation’s youth. Exposure to bullying as a victim, bully, bully-victim, or witness have all been associated with multiple health consequences,1-7 thus the 22% of youth who report being bullied8 represent only a fraction of youth whose health is at risk. Ongoing research continues to deepen our understanding of the broad range of physical and mental health effects, as well as the length of their impact.

Consequences of being bullied include headache, backache, abdominal pain, eating disorders, insomnia, decreased self-esteem, anxiety, depression, substance abuse, and suicidality.1,2,4,9-13 Long-term studies have shown a continuing negative impact on physical and mental health, economic status, and social-relationship outcomes lasting at least 5 decades.14-17 Perpetrators of bullying are also at risk for somatic complaints and the mental health risks of depression, anxiety, suicidality, and substance abuse.2,4,10,15-18 In addition, perpetrators are at risk for delinquent and criminal behavior, with research showing poor long-term outcomes.19-23 Consequently, bullying others can be viewed as an indicator of both health and societal risks. Being both a target and a perpetrator (designated as bully-victim) confers a higher mental health risk compared to having a singular role, with longitudinal research indicating an increased risk of poor health, economic, and social-relationship outcomes into early adulthood.7,11,16

Witnesses, the largest group of exposed youth, are also at risk for depression, anxiety, substance abuse, and suicidal ideation.5,6,24,25 Youth often play more than one role in bullying exposure beyond the well-described bully-victim group. Witnesses may also be victims, perpetrators, or all three.10 A youth’s relationships, being friends or aligned with a perpetrator or victim, or a youth’s identification with a targeted group such as sexual minorities, may further affect youth who identify as a witness.26,27

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Many youth do not tell an adult about bullying. The percentage of youth that disclose being bullied to an adult decreases with age. By the time a child is in high school 43% of boys and 27% of girls will remain silent.28 It is estimated 14.8% of all school-age children in the United States will have at least one emergency department (ED) visit each year and 1.5 million adolescents use the ED as their usual source of care.29,30 ED providers may see youth where bullying is the root cause of their presenting complaint, as well as youth with unrelated symptoms. Additionally, recent bullying victimization has been associated with a positive screen for suicide risk.31 Therefore, the ED may provide an opportunity to detect both preclinical and clinical impact of bullying exposure. Our hypothesis is that anonymous screening of pediatric ED patients will reveal substantial exposure to bullying, regardless of age, gender, and presenting complaint, suggesting that universal nonanonymous screening should be explored.

Methods

An anonymous survey was given to school-age youth (5-18 years old) who presented to the William Beaumont Hospital Pediatric ED in Royal Oak, MI, from July 1, 2013, to December 31, 2013. Surveys and envelopes were distributed in person with standard registration paperwork. The completed survey was placed in an envelope, sealed, and returned via a locked drop box. Inconsistent dissemination and tracking resulted in a protocol change. From January 1, 2014, to December 31, 2014, the surveys were mailed to the patient’s home, addressed to the parent/guardian of the patient. The mailing included an addressed stamped envelope for return. In addition to the demographic information, the survey asked why they were being seen (chief complaint), whether the youth liked school, and had they ever missed school because of something that had embarrassed them or made them feel sad. The words bullying (or bully) were not used anywhere in the survey; rather, there were 4 questions about exposure to specific types of behavior consistent with physical, verbal, cyber, and social bullying: getting physically hurt by another schoolmate or having belongings taken/damaged; being called names or having things said that make a schoolmate feel bad about themselves or afraid; email, instant messaging, cell phone text messaging, or websites used to tell lies about or embarrass a schoolmate; and leaving a schoolmate out of a group or activity on purpose to make them feel angry or sad. The survey inquired whether the youth was exposed as a target, perpetrator, and/or witness, and the frequency of exposure. The youth or their parent could complete the survey and were asked to indicate who responded.

A target of bullying behavior was designated as a victim and a perpetrator as a bully. Exposure in any role at least once was considered a positive response, consistent with the Centers for Disease Control and Prevention’s definition of bullying which considers risk of repetition.32 Subjects were categorized based on whether they had reported being only a victim, only a bully, only a witness, some combination of the three, or none of the three. Frequency tables for this role in bullying were created.

Exploratory data analysis looking at relationships between any one pair of variables was conducted mainly with Pearson χ² tests, though Fisher’s exact tests (when expected cell count was too low) and Cochran-Armitage trend tests (when one variable had at least 2 categories and was ordinal) were also used. Pearson exact χ² tests using Monte Carlo simulations were conducted to determine associations between chief complaint and exposure to bullying.

The analysis looking at the relationship between who filled out the survey and the reported role in bullying while controlling for school level was conducted using Cochran-Mantel-Haenszel tests for general association and Breslow-Day tests for homogeneity of the odds ratio. The analysis looking at the relationship between grade level and reported role in bullying while controlling for who completed the survey was conducted using Cochran-Mantel-Haenszel tests for general association.

SAS version 9.3 for Windows and R version 2.15.1 for Windows were used for all analysis conducted for this study. This study was approved by the hospital’s institutional review board.

Results

A total of 945 surveys were returned. Thirty-six surveys were eliminated as the respondent indicated they had filled out one previously in the same academic year, leaving 909 for analysis. Of these 909 subjects, 25% were collected in the ED and 75% were returned by mail. The response rate for the mailed surveys was 8.3%. Response rate for surveys distributed in the ED was unable to be accurately determined. The data set for the surveys collected in the ED was missing all responses for witnessing social bullying due to a printing error.

There were 51.8% male respondents and 48.2% female respondents, with no significant difference between collection methods. A youth filled out 47.9% of the surveys versus 50.9% filled out by a parent. A child/parent together filled out 1.2% of surveys, which were not included in the analysis based on who responded. In
the ED 62.6% were filled out by a parent versus 47.5% by mail ($P < .001$).

Distribution by school level varied significantly between collection methods ($P < .001$). Almost half of the surveys collected by mail represented elementary school children. The distribution of school levels for surveys done in the ED was more evenly proportioned with the largest group being from high school (Table 1).

Table 1. Distribution of School Level via Emergency Department and Mail Survey Collection Methods.

| School Level     | ED (n = 227) | Mail (n = 682) | ED + Mail (N = 909) |
|------------------|--------------|---------------|---------------------|
| Elementary school| 31.7%        | 46.0%         | 42.5%               |
| Middle school    | 29.1%        | 28.3%         | 28.5%               |
| High school      | 39.2%        | 25.7%         | 29.0%               |

Abbreviations: ED, emergency department; Elementary school, K-5 grade; Middle school, 6-8 grade; High school, 9-12 grade.

There were 153 different chief complaints that were categorized broadly into 15 groups: injury, musculoskeletal, neurologic, head injury, somatic complaint, respiratory, psychological, infection, gastrointestinal, surgery, endocrine, assault, allergy, multiple, and other. No association was found between any category and exposure to bullying ($P = .79$). The chief complaints were also categorized into 2 groups, psychological ($n = 21$) and all others ($n = 842$). Although the sample size of the psychological complaints was small, analysis revealed no association between a psychological complaint and exposure to bullying ($P = 1.00$).

The majority of children, 84.6%, indicated they liked going to school, with no association between collection methods. In response to “Have you ever missed school because something happened at school that made you feel sad, nervous, angry, or embarrassed,” 14.7% responded yes, with no collection method association.

Exposure distribution revealed 511 (56.2%) of youth were victims, 150 (16.5%) were bullies, 647 (71.2%) were witnesses, and 194 (21.3%) reported no exposure ($N = 909$). Youth were able to indicate more than one role and were often included in more than one category. For specific roles, see Figure 1.

There were very few differences in reporting roles related to specific types of bullying via collection method. There was no difference in victims overall or by type of bullying. For bullies, a greater proportion of social bullying was reported via the ED versus mail ($P = .03$). A significantly higher proportion of respondents reported witnessing cyber-bullying in the ED group versus mail ($P = .04$).

A significant association was noted between female gender and report of being a victim or witness for multiple types of bullying. Females were also more likely to be a perpetrator of social bullying behavior. Male gender was significantly associated for reporting physical bullying (Table 2).

The data were analyzed for differences based on whether the child ($n = 442$) or parent ($n = 469$) filled out the survey; among bullies and victims, only cyber-bullying was significantly associated. A higher percentage of children reported being a victim of cyber-bullying ($P < .01$) and an instigator of cyber-bullying ($P = .01$). Controlling for who filled out the survey, the only significant association with school level was a higher proportion of children in middle school reported bullying ($P = .046$).

With witnesses, there was a statistically significant association with who completed the survey. When a child filled
Table 3. Survey Respondent and Reported Witnessing of Bullying Behaviors (N = 887).

| Role     | Type of Bullying | Percentage | Parent | Child | P Value |
|----------|------------------|------------|--------|-------|---------|
| Witness  | Overall          | 60.8       | 82.4   | <.001 |
|          | Physical         | 40.7       | 55.6   | <.001 |
|          | Verbal           | 55.6       | 70.8   | <.001 |
|          | Cyber            | 13.2       | 37.9   | <.001 |
|          | Sociala          | 41.0       | 56.1   | <.001 |

Social bullying witness data were missing from the emergency department.

Table 4. Witness Trends Associated With School Level.

| Role     | Type of Bullying | E   | M   | H   | P Value |
|----------|------------------|-----|-----|-----|---------|
| Witness  | Overall          | 64.2% | 76.4% | 76.1% | <.001 |
|          | Physical         | 42.5% | 54.8% | 50.4% | 0.033 |
|          | Verbal           | 53.6% | 70.0% | 69.8% | <.001 |
|          | Cyber            | 4.7%  | 32.0% | 46.9% | <.001 |

Abbreviations: E, elementary school; M, middle school; H, high school.

out the survey, the percentage that reported witnessing bullying was larger for exposure to any bullying behavior, as well as each specific type of bullying (Table 3). When controlling for school level, a significantly higher proportion of children versus parents reported witnessing any bullying for middle school (P < .001) and high school (P < .001), but not for early or late elementary school.

Trends in types of bullying and exposure were evaluated by school level. The only trend that showed a decrease with advancing school level was victims of physical bullying from 35.7% in elementary school, to 29.4% in middle school, to 22% in high school (P < .001). Victims of cyber-bullying increased as school level increased: elementary school 2.3%, middle school 12.2%, and high school 21.2% (P < .001). Another significant trend was perpetrators of cyber-bullying increased from elementary school 0.3% to middle/high school 3.8%/3.3% (P = .008). Witnessing bullying was lowest in elementary school for all types (Table 4).

Analysis for an association between a subject disliking school and exposure to bullying revealed that a larger proportion of the students who did not like school had been exposed to bullying. The association was significant for victims versus nonvictims (P < .001), bullies versus nonbullies (P = .001), and witnesses versus nonwitnesses (P = .01).

Discussion

Screening pediatric ED patients revealed substantial exposure to bullying, regardless of age, gender, and presenting complaint. Although prevalence could not be determined, 715/909 surveys indicated exposure. The variety of roles reported reflects the complexity of bullying behavior.

While exposure to bullying is known to be associated with a number of specific health problems, an association between presenting complaint and exposure to bullying was not identified. A possible explanation may be the detection of preclinical status. In youth presenting to the ED, universal screening rather than targeted complaint-based screening may prove to be most beneficial in detecting youth at risk.

While no gender is excluded from any role in bullying, the data suggest that females seen in the ED are at higher risk of being bullied or witnessing bullying for all types except physical. They are also more likely to be social bullies, while boys are more likely to have physically bullied. Awareness of these tendencies may help focus initial or follow-up questioning when time is limited as well as direct information/education provided.

The biggest difference between parent and child reporting involved cyber-bullying, as a victim, bully, and witness. Parents were also much less informed about witnessing any type of bullying behavior. While witnesses are often called upon to intervene in bullying situations, there has been much less public discussion about how they are affected. This may translate into parents not asking and youth not volunteering information. There are many variations in the role of the witness and the associated health risks may be compounded by the other roles played or where a youth’s sympathies lie. Thus, while parents may be knowledgeable and helpful in providing a history about their child’s exposure to bullying, health care providers should ask youth directly about witness status and any role in cyber-bullying, as it may yield information of which parents are unaware.

The data revealed trends in bullying behavior by school level, which may also help prioritize questioning. Reported instances of cyber-bullying increased across all roles as school level increased, and being the victim of physical bullying decreased. Trends in witnessing reflect the need to address this role particularly as students get older.

A commonly asked question to children is whether they like school. Of the 15.4% respondents that did not, a larger proportion had been exposed to bullying. Therefore, if a child answers no, it should trigger a heightened index of suspicion for bullying exposure.

The 2 collection methods yielded few differences. In the ED collection group there was a greater proportion of parents filling out the survey, possibly because their child was acutely sick or injured. Another difference was a greater proportion of social bullies were reported...
via the ED collection method. One explanation could be parents’ awareness of their children’s socialization patterns. Another could be that the greater percentage of high school students reflects an increasing awareness of intentional exclusionary behavior.

Limitations of this study include the low response rate of the mailed surveys and the uncalculated response rate of the ED collected surveys. Due to inconsistent dissemination patterns and the inability to accurately track how many surveys were truly dispersed to patients, the protocol was changed from distribution in the ED to mailing the survey. The low calculated response rate of the mailed surveys raises the concern of selection bias given the high exposure rate. Those exposed to bullying may have been more likely to complete and return surveys regardless of the collection method. Direct comparison of the prevalence from a school-age clinical population to other settings may not be appropriate, although percentages are similar. The reported proportion of victims seen in the ED may be higher as children with special health care needs are known to utilize pediatric emergency departments more frequently than other children and are also at increased risk for being bullied. Additionally, sequelae of bullying exposure could increase ED use. The inclusion of cyberbullying may also have contributed to high exposure rate.

Another limitation is the results were obtained from a large Midwest suburban ED and may not generalize to populations from other clinical settings or locations. However, the population our ED services has a diverse set of socioeconomic patients. The results of an anonymous survey may be different than nonanonymous query, whether verbal or written. The change in protocol required to address concerns about administration of the survey did result in some differences, and also a probably under reporting of social bullying witnesses.

Our data show screening in the ED provides the opportunity to detect preclinical status of bullying exposure. It may also aid in the diagnosis of clinical symptoms that are the sequelae of bullying exposure. Although an ED clinician’s time is limited, the number of youth potentially exposed to bullying, and the associated risks, suggests that inquiry would be worthwhile. It may be that screening should assume exposure, mirroring alcohol-screening practices for high school students. Although parents may be aware of much of their child’s exposure, they may not be aware of the impact or the potential health consequences, both acute and long-term, providing the opportunity for education.

Future areas of investigation needed include the evaluation of nonanonymous screening to determine the best method, respecting the time constraints of the ED, and its value. In addition, beyond detecting bullying exposure will be the need to assess impact and its severity to determine the need for intervention. A range of intervention strategies from providing resources, obtaining consents, to admission should be established. Consideration should be given to providing information about bullying as a health risk and available community resources to all school-age youth.

Author Contributions
MS: Contributed to conception and design; drafted the manuscript; critically revised the manuscript; gave final approval; agrees to be accountable for all aspects of work ensuring integrity and accuracy.
MM: Contributed to conception and design; critically revised the manuscript; gave final approval; agrees to be accountable for all aspects of work ensuring integrity and accuracy.
CC: Contributed to analysis and interpretation; critically revised the manuscript; gave final approval; agrees to be accountable for all aspects of work ensuring integrity and accuracy.

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References
1. Fekkes M, Pijpers F, Verloove-Vanhorick SP. Bullying behavior and associations with psychosomatic complaints and depression in victims. J Pediatr. 2004;144:17-22.
2. Gini G, Pozzoli T. Association between bullying and psychosomatic problems: a meta-analysis. Pediatrics. 2009;123:1059-1065.
3. Klomek AB, Kleinman M, Altschuler E, Marrocco F, Amakawa MA, Gould MS. High school bullying as a risk for later depression and suicidality. Suicide Life Threat Behav. 2011;41:501-516.
4. Srabstein J, McCarter R, Shao C, Huang Z. Morbidities associated with bullying behaviors in adolescents. Int J Adolesc Med Health. 2006;18:587-596.
5. Rivers I. Morbidity among bystanders of bullying behavior at school: concepts, concerns, and clinical/research issues. Int J Adolesc Med Health. 2011;24:11-16.
6. Rivers I, Poteat V, Noreen N, Ashurt N. Observing Bullying at School: The mental health implications of witness status. Sch Psychol Q. 2009;24:211-223.
7. Haynie DL, Nansel T, Eitel P, et al. Bullies, victims, and bully/victims: distinct groups of at-risk youth. J Early Adolesc. 2001;21:29-49.
8. US Department of Education. Student reports of bullying and cyber-bullying: results from the 2013 School Crime Supplement to the National Crime Victimization Survey. http://nces.ed.gov/pubs2015/2015056.pdf. Published April 2015. Accessed June 5, 2017.

9. Gini G, Pozzoli T. Bullied children and psychosomatic problems: a meta-analysis. Pediatrics. 2013;132:720-729. doi:10.1542/peds.2013-0614.

10. Rivers I, Noret N. Participant roles in bullying behavior and their association with thoughts of ending one’s life. Crisis. 2010;31:143-148.

11. Klomek AB, Marrocco F, Kleinman M, Schofield I, Gould M. Bullying, depression, and suicidality in adolescents. J Am Acad Child Adolesc Psychiatry. 2007;46:40-49.

12. Tharp-Taylor S, Haviland A, D’Amico EJ. Victimization from mental and physical bullying and substance use in early adolescence. Addict Behav. 2009;34:561-567.

13. Srabstein J, Piazza T. Public health, safety and educational risks associated with bullying behaviors in American adolescents. Int J Adolesc Med Health. 2008;20:223-233.

14. Takizawa R, Maghan B, Arsenault L. Adult health outcomes of childhood bullying victimization: evidence from a five-decade longitudinal British birth cohort. Am J Psychiatry. 2014;171:777-784.

15. Copeland WE, Wolke D, Angold A, Costello EJ. Adult psychiatric outcomes of bullying and being bullied by peers in childhood and adolescence. JAMA Psychiatry. 2013;70:419-426.

16. Wolke D, Copeland WE, Angold A, Costello EJ. Impact of bullying in childhood on adult health, wealth, crime, and social outcomes. Psychol Sci. 2013;24:1958-1970.

17. Mamun AA, O’Callaghan MJ, Williams GM, Najman JM. Adolescents bullying and young adults body mass index and obesity: a longitudinal study. Int J Obes (Lond). 2013;37:1140-1146.

18. Klomek AB, Sourander A, Niemelä S, et al. Childhood bullying behaviors as a risk for suicide attempts and completed suicides: a population-based birth cohort study. J Am Acad Child Adolesc Psychiatry. 2009;48:254-261.

19. Sourander A, Jensen P, Rönning JA, et al. Childhood bullying victims and their risk of criminality in late adolescence: the Finnish From a Boy to a Man study. Arch Pediatr Adolesc Med. 2007;161:546-552.

20. Kim MJ, Catalano RF, Haggerty KP, Abbott RD. Bullying at elementary school and problem behaviour in young adulthood: a study of bullying, violence and substance use from age 11 to age 21. Crim Behav Ment Health. 2011;21:136-144.

21. Farrington DP, Ttofi MM. Bullying as a predictor of offending, violence and later life outcomes. Crim Behav Ment Health. 2011;21:90-98.

22. Falb KL, McCauley HL, Decker MR, Gupta J, Raj A, Silverman JG. School bullying perpetration and other childhood risk factors as predictors of adult intimate partner violence perpetration. Arch Pediatr Adolesc Med. 2011;165:890-894.

23. Nansel TR, Overpeck MD, Haynei DL, Ruan WJ, Scheidt PC. Relationships between bullying and violence among US youth. Arch Pediatr Adolesc Med. 2003;157:348-353.

24. Rivers I, Noret N. Potential suicide ideation and its association with observing bullying at school. J Adolesc Health. 2013;53(1 suppl):S32-S36. doi:10.1016/j.jadohealth.2012.10.279.

25. Luster T, Small S, Lower R. The correlates of abuse and witnessing abuse among adolescents. J Interpers Violence. 2002;17:1323-1340.

26. Pozzoli T, Gini G. Active defending and passive bystand- ing behavior in bullying: the role of personal characteristics and perceived peer pressure. J Abnorm Child Psychol. 2010;38:815-827.

27. Woodford MR, Krentzman AR, Gattis MN. Alcohol and drug use among sexual minority college students and their heterosexual counterparts: the effects of experiencing and witnessing incivility and hostility on campus. Subst Abuse Rehabil. 2012;3:11-23. doi:10.2147/SAR.S26347.

28. Luxenberg H, Limber SP, Olweus D. Bullying in U.S. schools: 2013 status report. Center City, MN: Hazelden Foundation; 2014.

29. US Department of Health and Human Services, Centers for Disease Control and Prevention. Health, United States, 2014, With special feature on adults aged 55-64. May 2015. Available at http://www.cdc.gov/nchs/data/hus/2014/079.pdf. Published May 2015. Accessed October 12, 2015.

30. Wilson KM, Klein JD. Adolescents who use the emergency department as their usual source of care. Arch Pediatr Adolesc Med. 2000;154:361-365.

31. Stanley IH, Horowitz LM, Bridge JA, Wharff EA, Pao M, Teach SJ. Bullying and suicide risk among pediatric emergency department patients. Pediatr Emerg Care. 2016;32:347-351.

32. Gladden RM, Vivolo-Kantor AM, Hamburger ME, Lumpkin CD. Bullying Surveillance Among Youths: Uniform Definitions for Public Health and Recommended Data Elements, Version 1.0. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention and US Department of Education; 2013. http://www.cdc.gov/violenceprevention/pdf/bullying-definitions-final-a.pdf. Accessed October 12, 2015.

33. Bradshaw CP, Sawyer AL, O’Brennan LM. Bullying and peer victimization at school: perceptual differences between students and school staff. Sch Psychol Rev. 2007;36:361-382.

34. Van Cleave J, Davis MM. Bullying and peer victimization among children with special health care needs. Pediatrics. 2006;118:e1212-e1219.

35. O’Mahony L, O’Mahony DS, Simon TD, Neff J, Klein EJ, Quan L. Medical complexity and pediatric emergency department and inpatient utilization. Pediatrics. 2013;131:e559-e565.

36. National Institute on Alcohol Abuse and Alcoholism. Alcohol Screening and Brief Intervention for Youth: A Practitioner’s Guide. http://pubs.niaaa.nih.gov/publications/Practitioner/YouthGuide/YouthGuide.pdf. Accessed October 12, 2015.