The Associations Between Victimization, Feeling Unsafe, and Asthma Episodes Among US High-School Students

Monica H. Swahn, PhD, MPH, and Robert M. Bossarte, PhD

We examined the associations between victimization, missed school because of feeling unsafe, and asthma episodes among US high-school students using the 2003 Youth Risk Behavior Survey. Cross-sectional analyses on adolescents with asthma (n=1943) showed that any victimization and missed school because of feeling unsafe significantly increased the odds of having an asthma episode in the past year (adjusted odds ratio [OR] = 1.45; 95% confidence interval [CI] = 1.07, 1.95 and adjusted OR = 2.93; 95% CI = 1.90, 4.53, respectively). Victimization and feeling unsafe are important but poorly understood risk factors for asthma. (Am J Public Health. 2006;96:802–804. doi:10.2105/AJPH.2005.066514)

METHODS

Analyses used cross-sectional data from the 2003 Youth Risk Behavior Survey, which included a nationally representative sample (N=15,214) of high-school students in grades 9 through 12. Students voluntarily completed the anonymous, self-administered questionnaire in school following local parental permission procedures. The overall response rate was 67%. The data were weighted to be representative of students in grades 9 through 12 in public and private schools in the United States. Victimization was defined as having been threatened or injured with a weapon such as a gun, knife, or club on school property; having had something, e.g., car, clothing, or books, stolen or deliberately damaged on school property; or having been injured in a physical fight and having to be treated by a doctor or nurse at least once during the preceding year. Missed school because of feeling unsafe was defined as having missed 1 or more days of school in the past 30 days because of feeling unsafe at school or while travelling to or from school.

Participants were asked 2 questions about asthma: (1) “Has a doctor or nurse ever told you that you have asthma?” (response options for this question were “yes” or “no”) and (2) “During the past 12 months, have you had an episode of asthma or an asthma attack?” (response options were “I do not have asthma”; “No, I have asthma, but I have not had an episode of asthma or an asthma attack during the past 12 months”; or “Yes, I have had an episode of asthma or an asthma attack during the past 12 months”). Responses to these 2 questions determined the lifetime prevalence of asthma diagnosis, current asthma (whether a student still had asthma), and asthma episode in the past year (whether a student had an asthma attack or episode in the past year). The analyses we present are based on those students who reported that they had ever been diagnosed with asthma and who also stated...
that they currently had asthma (n=1943). The outcome variable was having had an asthma episode in the past year. The term asthma episode is used to refer to either an asthma episode or an asthma attack.

We computed 2 logistic regression analyses to test the associations between victimization in the past year or having missed school because of feeling unsafe in the past month and having had an asthma episode in the past year after we adjusted for demographic factors (i.e., grade, gender, race/ethnicity) and for other potential confounders (i.e., smoking cigarettes on 1 or more days in the past 30 days, describing self as slightly or very overweight, and exercising on 1 or more days in the past 7 days). All analyses are based on weighted data computed using SUDAAN statistical software (Research Triangle Institute, Research Triangle Park, NC).

RESULTS

Of those students who reported that they had current asthma, 37.9% also reported that they had an asthma episode in the past year. Any victimization in the past year significantly increased the odds of having an asthma episode in the past year (adjusted odds ratio [OR]=1.45; 95% confidence interval [CI]=1.07, 1.95). Missed school because of feeling unsafe was significantly associated with having had an asthma episode (adjusted OR=2.93; 95% CI=1.90, 4.53).

We computed stratified analyses to determine whether these associations varied by metropolitan status (Table 1). Any victimization increased the odds of having had an asthma episode for students living in urban and rural areas but not for students living in suburban areas. Similarly, missed school because of feeling unsafe was significantly associated with having had an asthma episode for suburban and rural areas but not for urban areas.

DISCUSSION

Our findings showed that victimization and having missed school because of feeling unsafe were significantly associated with asthma episodes among students. These findings build on earlier reports on the link between violent victimization and asthma morbidity among inner-city children by documenting that the associations are important across metropolitan areas and that the associations are important in a nationally representative sample of adolescents, not only in high-risk samples. Thus, victimization and missed school because of feeling unsafe are important but poorly understood risk factors for asthma morbidity that pertain to a large population of children and adolescents.

The findings in this report are subject to at least 4 limitations. First, all participants were high-school students, and results do not reflect the experiences of youths who have dropped out of school. Second, our measures, victimization, having missed school because of feeling unsafe, and having had an asthma episode, were self-reported and therefore subject to reporting bias. Poorly controlled asthma may be linked to stressful events, which make asthma episodes easier to recall. Third, the data do not permit an assessment of the temporal ordering between victimization, feeling unsafe, and asthma episodes. However, prospective research shows that a stressful life event quadruples the risk for an asthma episode in the 2 days immediately following the event. Finally, the analyses do not consider the many potential mediators and moderators that may be part of the complex mechanisms linking a stressor such as victimization with asthma.

Future research and intervention efforts need to consider the role of psychosocial factors, including victimization, to better understand and potentially reduce asthma episodes and their severity. Moreover, the types and levels of exposure to violence as well as reactions to violence may differ across metropolitan regions, which also should be examined in future research. In addition, focus groups of adolescents with asthma who have experienced victimization may yield clinically useful information for the management and prevention of asthma episodes. Meanwhile, the findings from the current investigation can be used as additional empirical support for the need to broaden the scope of asthma research and practice to incorporate a wider range of behaviors and exposures.

| TABLE 1—Associations Between Asthma Episodes and Victimization and Having Missed School Because of Feeling Unsafe Among US High-School Students (n = 1943), by Metropolitan Status: 2003 |
|---|---|---|---|---|
| | All | Urban | Suburban | Rural |
| | % | % | % | % |
| % | Adjusted ORa | (95% CI) | Adjusted ORa | (95% CI) | Adjusted ORa | (95% CI) |
| Total | 37.9 | 37.0 | 38.5 | 37.1 |
| Any victimization | | | | |
| No | 33.1 | 27.8 | 34.6 | 33.6 | 1.00 |
| Yes | 41.6 | 42.0 | 1.95 (1.19, 3.22) | 41.7 | 1.34 (0.87, 2.08) | 40.6 | 1.55 (1.08, 2.22) |
| Missed school because of feeling unsafe | | | | |
| No | 36.1 | 35.1 | 1.00 | 37.0 | 1.00 | 34.5 | 1.00 |
| Yes | 62.4 | 57.9 | 2.16 (1.00, 4.66) | 59.5 | 3.02 (1.51, 6.05) | 78.9 | 7.17 (2.50, 20.59) |

Note. OR = odds ratio; CI = confidence interval.

*Adjusted for gender, grade, race/ethnicity, smoking cigarettes on 1 or more days in the past 30 days, describing self as slightly or very overweight, and exercising on 1 or more days in the past 7 days.

About the Authors
At the time of the study, the authors were with the Division of Violence Prevention, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, Atlanta, Ga.

Requests for reprints should be sent to Monica H. Swahn, PhD, MPH, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 4770 Buford Hwy, Mail Stop K-50, Atlanta, GA 30341-3724 (email: mswahn@cdc.gov).

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Contributors
M.H. Swahn planned and conducted the analyses and drafted the brief. R.M. Bossarte conducted analyses and reviewed drafts of the brief.

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Note. The findings and conclusions in this brief are those of the authors and do not necessarily represent the views of the Centers for Disease Control and Prevention.

Human Participant Protection
The Youth Risk Behavior Survey received Centers for Disease Control and Prevention institutional review board approval.

References


