

Effect of Abuse on Health

Results of a National Survey

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Hypothesis: The magnitude of risk would be highest for those reporting both types of abuse compared with those reporting 1 type or none.

Objective: To examine the independent associations between physical or sexual abuse or both and self-reported health status, mental health, and health-risk behaviors among a national school-based sample of adolescent girls.

Design: A secondary data analysis of a cross-sectional survey.

Setting: A nationally representative sample of 3015 girls in grades 5 through 12 from 265 public, private, and parochial schools (with an oversampling of urban schools) completed an anonymous survey conducted by the Commonwealth Fund Adolescent Health Survey.

Patients or Other Participants: Girls were eligible for this study if they responded to 2 questions assessing past physical and sexual abuse.

Results: Among the respondents, 246 (8%) reported a history of physical abuse; 140 (5%), sexual abuse; and

160 (5%), both. Logistic regression controlling for grade, ethnicity, family structure, and socioeconomic status found that those who reported both types of abuse compared with those who did not report any were significantly more likely to experience moderate to severe depressive symptoms (adjusted odds ratio [AOR], 5.10), moderate to high levels of life stress (AOR, 3.28), regular smoking (AOR, 5.90), regular alcohol consumption (AOR, 3.76), use of other illicit drugs in the past 30 days (AOR, 3.44), and fair to poor health status (AOR, 1.74). Finally, girls who reported both types of abuse were 2.07 times more likely to report moderate to high depressive symptoms compared with those reporting only sexual abuse (95% confidence interval, 1.14-3.74).

Conclusions: The magnitude of risk for adolescents reporting both types of abuse compared with no abuse is much greater than that for either abuse type alone. However, compared with both types, no significant increase in risk was detected in those reporting physical abuse only, and only depressive symptoms increased in those reporting sexual abuse only.

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THE PREVALENCE and incidence of child maltreatment vary widely in the general population.^{1,2} Various methodological factors contribute to the wide range of prevalence estimates, including definition variability, sampling differences, methods of data collection, and the number and types of questions used to assess childhood maltreatment.³ To acquire estimates, retrospective studies have used adults, because physical and sexual abuse that occurs during childhood often goes unreported.³ Sampling adolescents as opposed to adults is a practical solution to obtain prevalence estimates, especially when anonymous survey methods are used. Most studies that examine prevalence of child abuse experiences among adolescents use clinic-based samples. Few large-scale studies of adolescents exist. In a study that considered a large school-based sample, Neu-

mark-Sztainer et al⁴ found that 12.2% of girls reported experiencing sexual abuse and 15.5% reported physical abuse. Another study that examined substance abuse patterns among a large cohort of Minnesota public school students in grades 6, 9, and 12 found rates of self-reported sexual abuse among girls to vary from 4.9% in grade 6 to 11.7% in grade 12.⁵ Rates of self-reported physical abuse ranged from 7.4% in grades 6 and 12 to 11.2% in grade 9. Thus, from a representative US sample of adolescent participants, we might arrive at a reliable estimate of the prevalence of childhood maltreatment.

Although we may be unsure of the actual estimates, childhood physical and/or sexual abuse has been shown to be significantly associated with many physical and psychological sequelae, including depression, anxiety, substance abuse, and disordered eating.^{1,2,6-9} The relationship be-

SUBJECTS AND METHODS

The study population included a nationally representative sample of 3575 girls in grades 5 through 12 who participated in the 1997 Commonwealth Fund Adolescent Health Survey. We purposely described female respondents only, because recent data confirm that although the substantiated rates for many types of maltreatment are similar for boys and girls, the rates of sexual abuse differ significantly by sex, with the highest rates found among girls.¹⁵ This cross-sectional survey was conducted by Louis Harris and Associates, Inc, The Commonwealth Fund, New York, NY, from December 1996 through June 1997.^{16,17} Briefly, the nationwide survey used a 2-stage sampling strategy and a cluster design with oversampling of some units to ensure a representative sample. Respondents were selected from a nationally representative cross-section of 265 public, private, and parochial schools, with an oversampling of 32 urban schools. For a school to participate, permission was required from the lead administrators and school principal. Any school declining to participate was replaced by randomly choosing 1 of 5 schools with matching demographics and geography. The school selection procedure and survey method are discussed in more detail in a previously published study.¹⁸ Within each participating school, students in a randomly selected grade in an English classroom were surveyed anonymously in class. Louis Harris and Associates obtained approval for the study from the appropriate officials in accordance with the policies governing each school and collected data from students in compliance with the participating schools' internal review processes regarding informed consent. Some items of a sensitive nature were omitted from the questionnaire administered to students in grades 5 through 8, and similarly, versions of the questionnaires differed slightly between the sexes. The sensitive items in the questionnaire that were omitted from grades 5 through 8 were about sexual activity, pregnancy, and birth control. We believe that omission of these questions from the younger group's questionnaire had no impact on our study, because these questions did not apply directly to sexual abuse or any type of abuse. Moreover, the students were provided with an explicit invitation to skip any questions they did not feel

comfortable answering. Of the girls who completed the survey, 50% were white (non-Hispanic); 15%, black (non-Hispanic); 9%, Hispanic; 3%, Asian; 2%, other; and 21%, unknown ethnicity.

Our secondary data analysis used only the girls who responded to both questions assessing a history of sexual and physical abuse. Five hundred sixty girls (16%) did not respond to both questions, leaving a total of 3015 respondents to be included in the present analyses.

MEASURE AND DATA DEFINITIONS

The anonymously completed measure collected information across a number of domains, including demographic characteristics, physical or sexual violence, substance use (ie, cigarettes, alcohol, and other illicit drugs), and perceived health status. In addition, standardized measures of depressive symptoms and self-esteem and an index of life stress were included. For this study, 2 questions assessed abuse and were used to create the following 3 mutually exclusive categories: physical abuse only, sexual abuse only, and both. If a subject provided a positive response to the question, "Have you ever been sexually abused?" and a negative response to the question "Have you ever been physically abused?" the response was coded as sexual abuse only. No definitions for physical or sexual abuse were provided in the survey.

Demographic information collected included current grade, race/ethnicity, family structure, and parental education. Subjects were dichotomized into the younger group in grades 5 through 8 and the older group in grades 9 through 12. Race/ethnicity was categorized into non-Hispanic white, non-Hispanic black, Hispanic, other, and unknown. The latter category was used in all cases where this question was not answered. Family structure was assessed with the question "What adults do you live with?" We grouped adolescents as living with both parents, 1 parent, or some other adult or family structure unknown. We used the last grade completed by either parent as an index of socioeconomic status.

Adolescents provided 1 of the following 6 possible responses to the question about cigarette use: never, tried 1

tween child abuse and later sequelae vary widely across samples and types of abuse.⁶ Although Perkins and Luster¹⁰ did not find a significant relationship between sexual abuse and purging among midwestern adolescent girls, Rorty and colleagues¹¹ found that multiple forms of abuse (combinations of physical, psychological, and sexual abuse) predicted bulimia. Unfortunately, few studies that examined the long-term effects of childhood abuse have paid sufficient attention to the independent and combined effects of childhood sexual and physical abuse.¹²

Wind and Silvern¹³ conducted one of the first studies of the relationship between the type and extent of childhood abuse and adult functioning. As might be expected, these researchers found that adults who reported both physical and sexual abuse reported more symptoms on measures of posttraumatic symptoms, depression, and low self-esteem compared with a nonabused control group. In addition, the group who reported com-

bined abuse reported significantly more symptoms on these measures compared with those who reported 1 type of abuse as children. No difference on indices of depression or low self-esteem were detected between the physically and sexually abused groups. More recently, Schaaf and McCanne¹² found that college-aged women who reported experiencing a combination of types of abuse displayed much greater rates of revictimization and posttraumatic stress disorder than the nonabused group. However, they did not find differences in rates of revictimization or posttraumatic stress disorder diagnosis between the groups reporting physical or sexual abuse only. Unfortunately, the impact of various types of child maltreatment has exclusively focused on adult survivors, and the associated health risks among adolescents remain infrequently examined.

Pediatricians and other primary care providers need to screen vigorously for adverse childhood events among their patients and to treat affected children and adoles-

or 2 cigarettes, sometimes, smoked several cigarettes in the past week, smoked a pack or more in the past week, and used to smoke but quit. For these analyses, we categorized respondents as nonsmokers (never smoked or tried it once) or as former (smoked but quit), occasional (smoke sometimes), or regular (smoke several cigarettes or more per week) smokers. With regard to alcohol use, subjects selected 1 of the following 5 responses: never, once or twice in a lifetime, once in a while, at least once a month, and at least once a week. To gauge the intensity of drinking, those who said they drink at all were also asked how many alcoholic drinks they typically consume in a night when they drink, with responses ranging from 1 to more than 6. A follow-up question asked how often they drank "enough to feel buzzed, tipsy, or drunk." We classified respondents as nondrinkers (never drink or tried it once or twice) or as occasional (drink once in a while or at most once a month and consume fewer than 3 drinks when drinking) or regular (drink at least once a month or more frequently and consume at least 3 drinks when drinking) drinkers. Finally, we assessed illicit drug use with the general question "Have you used any illegal drugs in the past month or not?" Girls who responded yes to this question were coded as illicit drug users in the past month.

An index of depressive symptoms was developed using a modified version of the Children's Depression Inventory.¹⁹ This scale consisted of 14 items, each with the following 3 response options: none/mild, moderate, or severe. Each subject was asked to rate the degree to which each statement described her for the past 2 weeks, and a total score was computed. Consistent with previous work, total scores of at least 9 were used to define moderate to high levels of depressive symptoms.¹⁸ To measure self-esteem, we used the 10-item Rosenberg Self-Esteem Scale²⁰; scored on a 4-dimension scale, it has been used extensively with adolescents.²¹⁻²³ We dichotomized the results between a total score of no greater than 20 and at least 21 (range, 10-40) to indicate low levels and adequate to high levels of self-esteem, respectively.¹⁸ Subjects were also asked whether disruptive or stressful life events had occurred in the past year, such as the death of a close friend, divorce or separation of parents, or parental loss of

a job or trouble with the law. Based on their responses to 14 items using a scale from 0 to 4, a total score was obtained. Subjects with a score of at least 17 were defined as having moderate to high levels of life stress.¹⁸ Finally, to measure the constructs of perceived health status, subjects were asked to rate their current health on a 4-point scale from poor to excellent.

STATISTICAL ANALYSIS

The statistical consequences of the sampling plan were incorporated into the analysis through the following 3 different means: (1) responses were weighted to reflect grade enrollment, region, and ethnicity; (2) age groups were included in the analysis to allow for correlation of students' responses within classes; and (3) to stratify the sample by type of school and region, we included 4 variables (urban private/parochial, urban public, suburban private/parochial, and suburban public).

Bivariate relationships were examined using cross-tabulations and χ^2 statistics. In addition, associations were considered using binomial and multinomial logistic regressions. We examined the relative significance of each type of abuse compared with nonabuse for self-rated health, psychosocial/behavioral variables (eg, self-esteem and depression), and health-risk behaviors (regular smoking, alcohol consumption, and illicit drug use) after adjusting for grade level, race/ethnicity, parental education, and family structure. Finally, to detect whether the magnitude of risk for those reporting both types of abuse was greater, additional logistic regression and multinomial analyses were conducted in which those who reported physical or sexual abuse only were used as a reference group. Adjusted odd ratios were used to express the magnitude of outcomes when variables were dichotomized; among variables that were expressed in 3 or more levels (eg, smoking), adjusted odds ratios from the multinomial logistic regression that controlled for appropriate demographic characteristics as already described were used to demonstrate the magnitude of the independent relationship. All analyses were performed using Software for Statistical Analysis of Survey Data, version 7.0 (STATA, College Station, Tex)

cents for the consequences of child maltreatment.¹⁴ However, the relationship between the various types of abuse and adolescent health, including behaviors that put health at risk (health-risk behaviors), mental health problems, and health status, remains unclear. The purpose of this study was 2-fold. First, we reported the prevalence of physical and/or sexual abuse among a nationally representative sample of adolescent girls. Second, we examined the independent associations between abuse (physical, sexual, or both) and self-reported health status, mental health, and health-risk behaviors. We hypothesized that the magnitude of risk would be highest for those reporting both types of abuse compared with those reporting 1 type or none.

RESULTS

Of the 3015 girls in this sample, 546 (18%) reported a history of physical and/or sexual abuse. Two hundred forty-six (8%) reported experiencing physical abuse only;

140 (5%), sexual abuse only; and 160 (5%) both types of abuse.

Table 1 presents selected demographic characteristics among this school-aged sample stratified by abuse status. All analyses used no abuse as a reference category. Adolescent girls who reported abuse were notably more likely than those who did not to be in grades 9 through 12, to live in a single-parent household or with an adult other than a parent, and to have parents with less than a high school education. No significant differences were found in the race/ethnicity distribution among abuse categories.

The prevalence of regular cigarette smoking, regular alcohol consumption, and use of other drugs in the past 30 days were significantly higher among girls who reported abuse compared with those who did not report abuse (**Table 2**). Among girls who reported only sexual abuse, a lower proportion reported regular cigarette and alcohol use.

Table 1. Demographic Characteristics Stratified by Abuse Status*

Variable	Abuse Status, No. (%)			
	None (n = 2469)	Sexual and Physical (n = 160)	Sexual Only (n = 140)	Physical Only (n = 246)
Grade level				
5-8	1225 (56)	59 (39)†	57 (46)‡	74 (35)†
9-12	1224 (44)	101 (62)†	83 (54)	172 (65)†
Race/ethnicity				
White non-Hispanic	1475 (62)	96 (64)	83 (63)	155 (63)
Black non-Hispanic	414 (15)	30 (16)	23 (14)	22 (8)
Hispanic	261 (10)	18 (10)	18 (12)	30 (13)
Other	174 (6)	8 (7)	7 (5)	22 (7)
Unknown	145 (7)	8 (9)	9 (6)	17 (9)
Family structure				
Lives with both parents	1796 (74)	95 (62)†	82 (58)	165 (67)
Lives with 1 parent	519 (21)	32 (19)	42 (33)†	62 (26)†
Lives with other adult	95 (4)	26 (16)†	11 (6)†	10 (3)
Unknown arrangement	52 (2)	5 (4)	5 (3)	7 (4)
Parental education				
Less than high school	132 (5)	17 (10)‡	13 (9)‡	21 (10)‡
High school/some college	944 (37)	70 (43)‡	67 (45)‡	101 (39)
College degree or higher	1083 (44)	53 (34)‡	51 (40)	101 (40)
Unknown	310 (14)	20 (13)	9 (6)‡	23 (11)

*Comparisons were between each abuse group and the nonabused group. Sample size is an unweighted number; percentages are weighted. Percentages may not total 100 because of rounding and/or missing data.

† $P < .001$.

‡ $P < .05$.

Table 2. Prevalence of Health-Risk Behaviors Stratified by Abuse Status*

Variable	Abuse Status, No. (%)			
	None (n = 2469)	Sexual and Physical (n = 160)	Sexual Only (n = 140)	Physical Only (n = 246)
Smoking status				
Nonsmoker	1858 (78)	69 (43)†	78 (59)†	117 (52)†
Smoked, but quit	108 (5)	17 (11)†	10 (8)†	29 (13)†
Occasional	294 (11)	36 (23)†	26 (19)†	50 (18)†
Regular	173 (6)	38 (23)†	22 (14)†	48 (18)†
Alcohol consumption status				
Nondrinker	1654 (72)	61 (38)†	64 (49)†	112 (48)†
Occasional	438 (16)	58 (36)†	39 (28)†	49 (19)‡
Regular	314 (21)	40 (26)†	32 (23)†	79 (33)†
Illicit drug use in the past 30 d				
None	2109 (91)	105 (71)†	103 (81)†	175 (77)†
≥1 Time	233 (9)	45 (29)†	26 (19)†	53 (23)†

*Comparisons are between each abuse group and the nonabused group. Sample size is unweighted number; percentages are weighted. Percentages may not total 100 because of rounding and/or missing data. Variables are explained in the "Measure and Data Definitions" subsection of the "Subjects and Methods" section.

† $P < .001$.

‡ $P < .05$.

As might be expected, adolescent girls who reported some history of abuse were significantly more likely to report fair or poor health status, moderate to high levels of depressive symptoms, low self-esteem, and moderate to high levels of life stress compared with those who did not report abuse (reference group) (**Table 3**). Girls who reported experiencing both types of abuse reported the highest rates of depressive symptoms, life stress, and low self-esteem. With the exception of depressive symptoms, few differences were noted between those girls

who reported only physical compared with only sexual abuse.

Table 4 presents the independent associations between abuse status and various outcome measures. As can be seen, girls who reported experiencing both types of abuse were significantly more likely to experience negative outcomes compared with nonabused girls. In some instances, the adjusted odds ratios and adjusted odds ratios from the multinomial logistic regression were twice as high among those who experienced both types of abuse

Table 3. Health Status and Mental Health Characteristics Stratified by Abuse Status*

Variable	Abuse Status, No. (%)			
	None (n = 2469)	Sexual and Physical (n = 160)	Sexual Only (n = 140)	Physical Only (n = 246)
Health status				
Excellent	1225 (56)	27 (18)†	26 (22)	38 (17)‡
Good	893 (29)	86 (57)‡	75 (53)	145 (63)‡
Fair to poor	351 (15)	37 (25)‡	34 (26)‡	54 (21)‡
Depressive symptoms				
None to mild	2025 (86)	85 (53)	99 (71)‡	150 (63)†
Moderate to high	342 (14)	69 (47)‡	39 (29)‡	88 (37)‡
Self-esteem				
Adequate to high	1880 (82)	90 (56)‡	92 (66)‡	152 (66)‡
Low	403 (18)	61 (44)	45 (35)‡	78 (34)‡
Stress				
Low	1534 (63)	56 (32)‡	60 (39)	103 (40)‡
Less than moderate to high	935 (38)	104 (68)‡	80 (61)‡	143 (60)‡

*Comparisons are between each abuse group and the nonabused group. Sample size is unweighted number; percentages are weighted. Percentages may not total 100 because of rounding and/or missing data. Variables are explained in the "Measure and Data Definitions" subsection of the "Subjects and Methods" section.

† $P < .05$.

‡ $P < .001$.

Table 4. Independent Associations Between Abuse Status and Health Status, Mental Health, and Health-Risk Behaviors*

Abuse Status	Mental Health			Fair to Poor Health Status, OR (CI)	Health-Risk Behaviors		
	Moderate to High Levels of Depressive Symptoms, OR (CI)	Low Levels of Self-esteem, OR (CI)	Moderate to High Levels of Life Stress, OR (CI)		Used Illicit Drugs in the Past 30 Days, OR (CI)	Regular Cigarette Smoking, OR (CI)	Regular Alcohol Consumption, OR (CI)
Sexual and physical	5.10 (3.39-7.69)†	3.48 (2.26-5.37)	3.28 (2.26-4.75)†	1.74 (1.09-2.75)‡	3.44 (2.17-5.44)†	5.90 (3.21-10.83)†	3.76 (2.16-6.55)†
Sexual only	2.47 (1.55-3.92)†	2.44 (1.61-3.69)†	2.45 (1.66-3.63)†	1.93 (1.21-3.07)‡	2.02 (1.17-3.48)§	2.67 (1.42-4.99)§	2.70 (1.57-4.67)†
Physical only	3.39 (2.43-4.73)†	2.28 (1.67-3.11)†	2.35 (1.77-3.10)†	1.29 (0.87-1.90)	2.30 (1.53-3.47)†	3.44 (2.27-5.46)†	3.25 (2.14-4.94)†

*Odds ratios (ORs) and confidence intervals (CIs) are determined from multivariate logistic regressions, with the exception of the ones for "Fair to Poor Health Status," "Regular Cigarette Smoking," and "Regular Alcohol Consumption," which were derived from multivariate multinomial regressions. All regressions include controls for grade level, race/ethnicity, family structure, and parental education (as a proxy for socioeconomic status). For all dichotomous variables, yes indicates 1. The omitted category is "not abused." The reference groups are low/mild levels of depressive symptoms; moderate/high levels of self-esteem; low levels of life stress; excellent health; and not abused (for type of abuse).

† $P < .001$.

‡ $P < .05$.

§ $P < .01$.

compared with those who reported only 1 type. Specifically, girls who reported both types of abuse were 5.10 times more likely to report moderate to high levels of depressive symptoms and 5.90 times more likely to report regular smoking. In contrast, those girls who reported only sexual abuse were 2.47 times more likely compared with their nonabused peers to experience moderate to high levels of depressive symptoms and 2.67 times more likely to report regular smoking.

To evaluate the relative likelihood for each health outcome according to abuse status, we compared those who reported experiencing both types of abuse with those reporting sexual or physical abuse only. When those reporting both types of abuse were contrasted with those reporting sexual abuse only, a significant finding emerged (data not shown). Adolescent girls who reported both types of abuse were 2.07 times more likely (95% confidence interval [CI], 1.14-3.74) to report moderate to high

levels of depressive symptoms compared with those who reported sexual abuse only. When those reporting physical abuse only were used as the reference group, the adjusted odds ratios for moderate to high levels of depressive symptoms (1.51 [95% CI, 0.97-2.35]; $P = .07$) and self-esteem (1.53 [95% CI, 0.96-2.45]; $P = .08$) approached significance when controlling for demographic characteristics and nonabuse status.

COMMENT

Our data found that almost 20% of adolescent girls in this nationally representative sample reported experiencing physical or sexual abuse or both. Although these rates are somewhat lower than those of studies using clinical samples, these data are consistent with those of samples drawn from statewide school-based research.^{4,5} These alarming percentages underscore the importance of the position of the

What This Study Adds

Many studies examining the long-term effects of childhood abuse have paid insufficient attention to the independent and combined effects of childhood sexual and physical abuse, especially among adolescents. In addition, prevalence estimates of the occurrence of physical and sexual abuse of children have been conducted primarily among clinic-based samples. This study used a nationally representative sample to provide prevalence estimates for childhood abuse and to examine the independent associations between physical or sexual abuse or both and self-reported health status, mental health, and health-risk behaviors. We hypothesized that adolescent girls who reported both forms of abuse would be at the greatest risk for adverse health outcomes.

We found that the magnitude for increased health risk is greater for those young women who reported experiencing both types of abuse compared with those who did not report abuse. However, the increase in health risk is not significantly different when the comparison group is that reporting physical or sexual abuse only.

American Academy of Pediatrics, which advocated that pediatricians assume an important role in the identification and prevention of violence against children.²⁴

Consistent with our hypothesis, adolescent girls who reported experiencing both physical and sexual abuse compared with those who did not report child maltreatment demonstrated higher levels of risk for common health-risk behaviors that occur in adolescence. Finkelhor²⁵ postulates that early age, frequent and/or severe abuse, and abuse by a biological parent have been consistently linked to a greater likelihood of problems in adulthood such as substance abuse and depression. Thus, adolescent girls who report experiencing both types of abuse would seem to be at greatest risk for development of future psychopathology and to require early identification and treatment when contrasted with their non-abused peers.

We found that the risk for moderate to high levels of depressive symptoms was 5 times higher for those who reported both types of abuse compared with those who reported no abuse and twice as high among those who reported only sexual abuse, when controlling for important demographic characteristics. Moreover, independent of child maltreatment, adolescent girls and young women are at higher risk for mental health difficulties, relative to their male counterparts.²⁶ In addition, Harkness and Monroe²⁷ found severe abuse, sexual abuse, antipathy, and neglect to be significantly associated with endogenous depression among adult women. Unfortunately, although some data suggest that the psychological health of abused children improves over time, many children remain at a level of clinical concern.¹ Therefore, when screening for abuse, and when this history is affirmed, the pediatrician should also evaluate for depressive symptoms, especially among young girls who report a history of both types of abuse.

Another important finding in our data was that adolescent girls who reported experiencing both types of

abuse were almost 6 times more likely to report regular smoking compared with their nonabused peers. Moreover, among those who reported sexual or physical abuse only compared with those who reported no abuse, we found approximately 2.5 and 3.5 increases, respectively, in the risk for reported regular smoking. These relationships are not surprising, as a link between smoking and depressive symptoms has been demonstrated.¹⁸ Adolescent girls offer insight on this association when they say that they smoke to reduce or alleviate stress.²⁸

In contrast to our second hypothesis, we did not detect significant increases in risk when girls reporting both types of abuse were compared with those reporting physical abuse only. In addition, we observed only negligible differences in the magnitudes of risk for health-risk behaviors, poor health status, and poor mental health between those reporting sexual or physical abuse only compared with those reporting no abuse. With the exception of depressive symptoms, the experience of only 1 type of abuse places young girls at risk for substance abuse, low self-esteem, and higher levels of life stress, compared with young girls without a history of victimization. These data are consistent with other research investigating substance abuse,⁵ anxiety,¹ depression,¹ and disordered eating⁴ and their relationship to self-reported physical or sexual abuse. For example, Neumark-Sztainer et al⁴ found similar risk magnitudes for disordered eating among adolescent girls who reported experiencing physical or sexual abuse after controlling for sociodemographic and psychosocial factors.

Several limitations of our study deserve mention. First, the 2 single questions used to identify a history of physical and/or sexual abuse may have underestimated the prevalence in this sample. Typically, the self-reported rates of victimization increase when specific behaviors are assessed instead of labels, because an adolescent may not believe she experienced abuse. Second, we cannot establish causality for the observed relationships between abuse type and health-risk behaviors, health status, or mental health. Although cross-sectional data can rule out potential causes when associations are not present, they cannot determine the temporal order of events. Furthermore, our use of adjusted odds ratios from the logistic and the multinomial logistic regressions throughout the analysis rather than relative risk may overstate the size of the effects for some outcomes. Third, our conclusions cannot be generalized to adolescents who are not attending or enrolled in school. Adolescents who have dropped out of high school may be at increased risk for psychological and behavioral sequelae of abuse, thus potentially decreasing our prevalence estimate of child maltreatment. Finally, we cannot ensure that each student who experienced abuse disclosed this information on the survey. However, efforts were taken to ensure that each participant understood their responses to be anonymous, and the collected data are consistent with those of other reports describing the prevalence of child maltreatment.

In 1999, an estimated 826 000 children and adolescents were victims of substantiated abuse and neglect, and slightly more than half (52%) of these were girls.¹⁵ Secondary analysis of a nationally representative sample

underscores the need for pediatricians and other primary care providers to offer universal screening to patients, including adolescents. Moreover, pediatricians who provide care to adolescent girls must be mindful of depressive symptoms, their association with any childhood maltreatment, and the demonstrated relationship with other health-compromising behaviors common to this population.

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