

Evidence of Underreporting of Adverse Childhood Experiences, San Francisco Municipal STD Clinic, 2007

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Sexually transmitted diseases (STDs), including human immunodeficiency virus (HIV) infection, continue to be a public-health burden in the United States. Beyond proximate risk factors that are present in the short period before STD acquisition, such as multiple sex partners and substance use, studies have found a link between childhood abuse and adult STD/HIV-related risk behaviors,^{1–9} self-reported history of STD diagnosis,^{3–4,7,10} and HIV infection.^{11–15}

These studies have largely focused on 1 or 2 types of abuse (e.g., sexual and/or physical) without accounting for other negative experiences that may accompany such abuse. The Adverse Childhood Experiences (ACE) Study, an ongoing mail-in survey of adults in care at a health-maintenance organization, expanded the range of childhood-abuse exposures to include various types of maltreatment and household dysfunction.⁴ Although respondents were assured that the survey would remain confidential and not be included in their medical records, adverse childhood experiences may have been underreported.^{16–18}

In this study, we evaluated reporting of adverse childhood experiences among patients attending a municipal STD clinic. Specifically, we explored the following questions: (1) What is the prevalence of self-reported adverse childhood experiences among patients attending a municipal STD clinic, and (2) Does reporting of exposure to adverse childhood experiences differ by anonymous versus confidential survey?

We evaluated reporting of adverse childhood experiences among patients attending the San Francisco City Clinic between November 5th and December 7th, 2007, using a modified version of The ACE Study questionnaire. To assess potential underreporting, the survey was administered anonymously for 2 weeks (November 5th–19th). For the following 2 weeks (November 20th–December 7th), the survey was administered confidentially, meaning that the results were linked to clinical data obtained at the clinic visit. The same survey

instrument was used during the anonymous and confidential periods, and all surveys were administered in the waiting room. The only differences were the text that explained what confidential or anonymous meant and the inclusion of the patient's medical record number on the confidential survey.

All patients visiting City Clinic were eligible to complete the survey. Patients were asked to complete the survey at the registration desk. Those who had already completed the survey were asked not to fill out again if they returned for a visit during the survey period. Registration staff explained the survey and its voluntary nature. Patients who refused had access to the same services as those who completed the survey. No incentive or compensation was offered. These data were analyzed to evaluate a public-health program and health-care operations, and thus met the criteria for exemption from the US Department of Health and Human Services policy on protection of human research subjects (Code of Federal Regulations, Title 45, Part 46).

The questionnaire on adverse childhood experiences was based on a previously validated survey instrument¹⁹ that was adapted from the Conflict Tactics Scale.²⁰ The 14 questions on the survey asked about experiences during the respondents' first 18 years of life, and were subsequently categorized into 7 different domains: emotional abuse (2 questions), physical abuse (2 questions), sexual abuse (4 questions), exposure to substance abuse (2 questions), exposure to mental illness (2 questions), violent treatment of mother or stepmother (1 question), and incarceration of a household member (1 question).²¹ Respondents were defined as having had a type of adverse childhood experience if they answered "yes" to at least one of the questions in that category. The total number of exposures to the 7 categories was summed to create a 3-part ACE score (classified as 0, 1–3, or 4 or more). We used the Pearson χ^2 square test to assess differences in ACE score between anonymous- and confidential-survey respondents. All statistical analyses were conducted in SAS 9.1.3 (SAS Institute Inc., 2002–2003).

Of the 819 patients who visited the San Francisco municipal STD clinic between November 5th and 19th, 2007, 255 completed the anonymous survey (31.1% response rate). Of the 839 patients who visited between November 26th and December 7th, 273 completed the confidential survey (32.5% response rate). The prevalence of each type of adverse childhood experience and the ACE score for anonymous- and confidential-survey respondents are presented in the Table 1. In the overall sample, 57.8% reported at least one type of adverse childhood experience and 15.3% reported 4 or more types; 22.9% reported sexual abuse as a child.

Anonymous-survey respondents reported more adverse childhood experiences than confidential-survey respondents. This trend was consistent across all types of adverse childhood experiences; the differences were statistically significant ($P <$

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TABLE 1. Definition and Prevalence of Adverse Childhood Experiences (ACE) by Survey Type, San Francisco Municipal STD Clinic, 2007 (n = 528)

	Survey Type			P*
	Anonymous n = 255 (%)	Confidential n = 273 (%)	Overall n = 528 (%)	
Emotional abuse	78 (30.6)	64 (23.4)	142 (26.9)	0.064
Did a parent or anyone in your household often or very often . . .				
. . . swear at, insult, or put you down?				
. . . act in a way that made you afraid that you would be physically hurt?				
Physical abuse	55 (21.6)	37 (13.6)	92 (17.4)	0.015
Did a parent or anyone in your household often or very often . . .				
. . . push, grab, shove, or slap you?				
. . . hit you so hard that you had marks or were injured?				
Sexual abuse	66 (25.9)	55 (20.2)	121 (22.9)	0.117
Did an adult or person at least 5 y older than you ever . . .				
. . . touch or fondle you in a sexual way?				
. . . have you touch their body in a sexual way?				
. . . attempt oral, anal, or vaginal intercourse with you?				
. . . actually have oral, anal, or vaginal intercourse with you?				
Substance abuse	90 (35.3)	87 (31.9)	177 (33.5)	0.405
Did you live with anyone who . . .				
. . . was a problem drinker or alcoholic?				
. . . used street drugs?				
Mental illness	84 (32.9)	76 (27.8)	161 (30.3)	0.202
Was a household member depressed or mentally ill?				
Did a household member attempt suicide?				
Mother treated violently	30 (11.9)	25 (9.2)	55 (10.5)	0.318
Was your mother (or stepmother) sometimes, often, or very often pushed, grabbed, slapped, kicked, hit, or otherwise treated violently?				
Incarcerated household member	25 (9.8)	25 (9.3)	50 (9.5)	0.820
Did a household member go to prison?				
ACE score (number of ACE types)				
0	93 (36.5)	130 (47.6)	223 (42.2)	0.034
1–3	118 (46.3)	106 (38.8)	224 (42.4)	—
4 or more	44 (17.3)	37 (13.6)	81 (15.3)	—

*Pearson χ^2 test.

0.05) for physical abuse (21.6% vs. 13.6%, $P = 0.01$) and overall ACE score ($P = 0.03$), and borderline statistically significant for emotional abuse (30.6% vs. 23.4%, $P = 0.06$).

Given prior reports showing associations between adverse childhood experiences and STDs, we anticipated that the prevalence of adverse childhood experiences among patients at an urban STD clinic would be higher than among those seen in general medical-care settings. However, the prevalence in this clinic sample was similar to that recently reported in a primary-care population, where 63.6% reported at least one type of adverse childhood experience, 12.2% reported 4 or more types, and 20.4% reported sexual abuse.²²

Our data also indicate that patients who knew the survey would be linked to their clinical record were less willing to report adverse childhood experiences on a self-administered questionnaire, suggesting that the true prevalence in this sample may be higher than reported on the confidential surveys. Un-

derreporting may be even more dramatic in primary-care samples than STD-clinic patients, who may be more prepared to answer questions about sensitive information at the clinical visit.

While the survey-response rate was low, it did not differ between survey groups so a resulting bias was unlikely. The analysis was limited by its small sample size; analyses of the relationship between adverse childhood experiences and STD outcomes among the confidential-survey respondents did not yield statistically significant results (data not shown), but the study was likely underpowered to detect an association.

A growing body of epidemiologic literature has used a life-course perspective to describe associations between distal risk factors, such as adverse childhood experiences, and adverse adult outcomes such as STDs. Our data suggest that underreporting may obscure the prevalence of such exposures and the magnitude of their effects, particularly if those who underreport the exposure are more likely to have an STD.

Studies of the relationship between adverse childhood experiences and adult STDs should consider the sensitive nature of reporting this type of exposure and develop measures accordingly.

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