Sexual Abuse and Sexual Risk Behavior: Beyond the Impact of Psychiatric Problems

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Objective   This study examined the association between sexual abuse (SA) and sex risk in girls and boys placed in alternative and therapeutic school settings while controlling for psychiatric problems.   **Method**   Adolescents were recruited from alternative and therapeutic schools. Youth completed audio computer-assisted self-interviews assessing childhood abuse, sexual behaviors, sexual attitudes, and psychiatric symptoms.   **Results**   Of the 162 youth with available data, 23% reported a moderate or severe SA history. After controlling for gender and the presence of a psychiatric diagnosis, youth with a SA history were significantly more likely to have engaged in sex, had sex in the last 90 days, and engaged in unprotected sex. Adolescents with a history of SA also endorsed fewer advantages of using condoms.   **Conclusions**   SA is uniquely associated with sexual behavior and attitudes even when adjusting for the presence of a psychiatric diagnosis. These data have implications for interventions for those with SA histories.

Key words   adolescents; child abuse and neglect; HIV/AIDS; risk behavior.

A recent review of studies on childhood and adolescent sexual abuse (SA) found consistent associations between SA and subsequent sexual risk behaviors (e.g., younger age at first consensual intercourse, unprotected sex, number of partners) as well as evidence that these relationships are identifiable starting in adolescence (Senn, Carey, & Vanable, 2008). However, the effects of SA and the effects of mental health problems associated with SA are entangled in many studies, making it difficult to distinguish between the effects of SA and the effects of psychological symptoms on sex risk. Two studies using symptom checklists have shown risk behaviors to be associated with SA even after controlling for psychological symptoms (Auslander, et al., 2002; Elze et al., 2001). A third investigation of only girls controlled for clinically significant elevations in depressive symptoms, with SA continuing to predict sex risk behaviors (Buzi et al., 2003).

SA history may influence sex risk behaviors via a variety of mechanisms such as attitudes about self and sex [see Lescano and colleagues' (2004) review of theory and treatment applications]. Individuals with a history of SA endorse more negative attitudes about their sexuality and report lower levels of interpersonal power in sexual relationships (Finkelhor & Browne, 1985). Another investigation reported that even 10 years following SA disclosure, participants with a history of SA endorsed lower birth control efficacy than comparison participants (Noll, Trickett, & Putnam, 2003). In addition to risk related to perceived self-efficacy, individuals with a history of SA may have difficulty regulating affect (Van der Kolk et al., 1996; Zlotnick, Zakriski, Shea, & Costello, 1996). This is particularly important to adolescent sexual decision making, as those with a history of SA who have difficulty managing or expressing affect may become overwhelmed by the task of negotiating safe sex and respond with avoidance, dissociation, or impulsivity. Alexithymia, or the inability to express feelings with words, may be a marker of problems in affect regulation and is present in adults with a history of SA (McLean, Toner, Jackson, Desrocher, & Stuckless, 2006; Scher & Twaite, 1999; Zlotnick, Mattia, & Zimmerman, 2001; Zlotnick et al, 1996).

Quina and colleagues (2004) have posited a theoretical model by which childhood sexual abuse leads to adult human immunodeficiency virus (HIV) risk. In this theory, SA causes feelings of stigmatization, powerlessness, and fear, as well as sexualization in children, which in turn influence attitudes and cognitions about the self and sexual situations. These cognitions are theorized to have a potentially bidirectional relationship with problem behaviors, such as less intention to use condoms or more substance use, which lead to HIV risk via unprotected sex, multiple partners or unwanted intercourse.

While such theories suggest that a history of SA may influence sexual risk, it is possible that a third factor associated with both SA and sexual risk may account for this relationship. One such potential factor is psychiatric illness (Miller, 1999). However, the impact of SA can be difficult to distinguish from the impact of psychiatric problems that often occur among those with a history of SA. Adolescents with a history of SA are at increased risk for psychiatric disorders, including depression, conduct disorder, and post-traumatic stress disorder, and psychiatric disorders have also been shown to be associated with sexual risk behavior (Arata, Langhinrichsen-Rohling, Bowers, & O'Brien, 2007; Copeland, Keeler, Angold, & Costello, 2007; Kilpatrick et al., 2003; Senn, Carey, & Vanable, 2008). In general, adolescents in psychiatric treatment report greater sexual risk such as more sexual partners and less condom use (Lescano, Brown, Hadley, D'Eramo, & Zimskind, 2007). For example, depressed youth are less likely to use condoms and more likely to have a history of sexually transmitted diseases than their non-depressed peers (Shrier et al., 2001; Shrier, Harris, Sternberg, & Beardslee, 2001). In addition, youth with externalizing psychiatric disorders, who are often impulsive and sensation-seeking, are more likely to engage in risk behaviors (Brady & Donenberg, 2006; Kahn, Kaplowitz, Goodman, & Emans, 2002; Kowleski-Jones & Mott, 1998). Several mechanisms for the relationship between psychiatric disorder and sexual risk have been hypothesized, including self-destructive attitudes and cognitive immaturity (Brown, Kessel, Lourie, Ford, & Lipsitt, 1997).

Youth in alternative schools may be more likely to have histories of SA, as well as to have psychiatric disorders (Buzi et al., 2003; Grunbaum & Basen-Engquist, 1993; Weller et al., 1999), thus making them a high risk subgroup. The majority of youth in alternative schools (86%) have had sexual intercourse as compared with less than half (46%) of youth in typical schools (Centers for Disease Control, 2002; Grunbaum, Lowry, & Kann, 2001). Furthermore, only 46% of students in alternative school placements reported using a condom during their most recent sexual intercourse (Grunbaum, Lowry, & Kann, 2001). Examination of the association between SA and risk behaviors in these youth is warranted (Buzi et al, 2003).

Only one published investigation has examined the association between SA and risk behaviors in female adolescents in alternative school settings (Buzi et al., 2003). In this study, approximately one quarter (27%) of girls reported a history of nonconsensual sex. After controlling for age, ethnicity, family income, and clinically elevated depressive symptoms, a history of SA was associated with early initiation of intercourse, having had three or more sexual partners in the last 3 months, and a history of sexually transmitted disease.

SA is clearly associated with psychiatric symptoms and sexual risk. However, previous research has largely been conducted with community samples, and studies with those in psychiatric treatment have not controlled for the presence of a psychiatric diagnosis. As such, the increased rates of sexual risk behaviors observed in youth with a SA history may arguably be attributable to increased rates of psychiatric diagnosis among these youth. Although one published investigation has controlled for clinically elevated depressive symptoms, the study was conducted with females only, did not examine other comorbid psychiatric diagnoses, and did not explore attitudes about sex that could inform understanding of the association between SA and sex risk (Buzi et al., 2003). Thus, research has not yet firmly established the distinct influence of SA on sexual risk separate from influences conferred by the comorbid psychiatric diagnoses frequently seen in this population.

The present investigation examined SA and sex risk behaviors in girls and boys in alternative and therapeutic school settings. First, it was hypothesized that youth with a history of SA would report more sex risk behaviors, riskier attitudes about sex (including low condom self-efficacy and riskier condom use attitudes), and poorer psychological functioning (including increased levels of psychiatric symptomatology, increased distress, poorer family functioning, and decreased restraint). Second, to assess whether the relationship between SA and sex risk may be attributed to psychiatric diagnosis, the additional risk conferred by SA history for sex risk behaviors and riskier attitudes/cognitions while accounting for psychiatric symptoms was examined. Consistent with previous literature and theory, it was expected that a history of SA would be associated with greater endorsement of risky behaviors, attitudes, and cognitions even after controlling for gender and the presence of a psychiatric disorder, supporting the

notion that SA is associated with sexual risk regardless of its influence on one's mental health.

Methods
Study Design and Sample

Data were collected as part of the baseline assessment of an HIV prevention program (Project STAR- Safe Thinking and Affect Regulation) conducted with students attending any one of sixteen nearby schools in southern New England. Sites were therapeutic schools serving adolescents with identified mental health concerns, and alternative schools for students not performing in traditional academic environments. Participants were placed in these school settings due to a variety of internalizing and externalizing disorders requiring specialized programs or a need for an environment that could address factors that had led to difficulty in traditional school settings. Alternative and therapeutic schools were included to represent a broad spectrum of non-traditional schools for youth who have had difficulty succeeding in traditional school settings and who, accordingly, may be at risk for additional health and psychosocial concerns. All study protocols were approved by the hospital institutional review board, informed consent was obtained from all participants ≥ 18 years of age or from minors' parents or guardians, and assent was obtained from youth < 18 years old.

Participants were between the ages of 12 and 19 years. The primary inclusion criterion for the study was attendance at a participating alternative or therapeutic school setting. Because adolescents were going to take part in an HIV prevention program, exclusion criteria included factors that might affect sexual behavior during the study period, including if they were currently pregnant, had recently given birth, were HIV positive by self-report, or had a history of being a sexual aggressor. Students with developmental delays that might affect comprehension of intervention content were also ineligible. Schools identified eligible adolescents and requested permission from parents to release contact information to study staff, who then contacted parents to arrange meetings to obtain informed consent. At the time of baseline assessment, adolescents were approached with the details of the study and provided assent to participation. Adolescents were compensated $20 for their time related to completing questionnaires.

Of 289 adolescents for whom consent to contact was obtained, 203 (70%) were able to be reached and consented into the study. Of those consented, 184 completed the baseline assessment (3 adolescents refused and 16 no longer attended the school when the baseline assessment occurred). Assessment measures were completed via audio computer-assisted self-interviews (ACASI), administered on laptop computers to ensure privacy. Of these, 162 (88%) had data for items relevant to the present analyses. Participants were provided a 90-day calendar, and a standard script instructing participants to recall significant events of the last three months was used to assist in recall of the past 90 days. Research staff supervised completion of the measures and answered participant questions as they arose.

The sample was 57% female. Most participants identified as White (54%), followed by Black/African American (17%), American Indian/Alaskan Native (3%), Native Hawaiian/Pacific Islander (3%), Asian (1%), Multiracial (13%), and No Response (10%); this is similar to the racial composition of the communities in which the schools were located. Twenty-seven percent identified being of Latino descent. The average age of participants was 15.3 years ($SD = 1.3$). Seventy-four percent of participants were from therapeutic schools, 26% were from alternative schools.

Measures
Childhood Abuse

Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998). The five-item Sexual Abuse subscale from the CTQ assessed perceived SA (e.g., ''I believe I was sexually abused'') on a five-point scale (''never true'' to ''very often true''). The CTQ is a frequently used, reliable, and valid measure of abuse history (Bernstein et al., 2003). The range was 5–25, with a mean score of 7.4 (SD = 4.9) and a modal score of 5 (alpha = .93). The CTQ manual classifies scores into four categories of sexual abuse: none, low, moderate, and severe. In order to categorize participants in a manner that conveyed common clinical meaning, participants with a score of ≥ 8 are classified as moderate/severe SA, based on the measure's normative data. This cutoff is also greater than the mean of the sample, thus supporting the use of the normative cutoff. Throughout the remainder of this article, SA is defined as those reporting scores in the moderate or severe range.

Sexual Behaviors

Participants reported whether they had ever been sexually active, defined as having had vaginal, anal, or oral sex, and whether they had had vaginal or anal sex in the last 90 days. Sexually active participants also provided the number of sexual partners in the last 90 days. The number of times participants had vaginal or anal sex with each partner in the last 90 days, as well as the number of times they used condoms, was used to calculate the number of unprotected sexual acts. The proportion of

protected sexual acts was calculated by dividing the number of protected acts by the total number of sexual intercourse acts. This percentage provides a description of risk behavior separate from the absolute number of risk acts. For example, two adolescents who both have 5 unprotected sexual encounters are not similar if one had sex 6 times and the other had sex 100 times. The relationship between these two variables in this sample suggests that they are related but distinct constructs ($r = -.34$, $p = .007$).

Sexual Attitudes and Cognitions

Condom use attitudes (Brown, Lourie, Zlotnick, & Cohn, 2000). Condom use attitudes were assessed using 8 items (alpha = .70, range 8–35) related to perceived reactions to condoms (e.g., ''I would feel like I did something wrong if my partner and I didn't use a condom''). Items were answered on a 5-point scale (''strongly agree'' to ''strongly disagree'').

Advantages of condom use (Prochaska, Redding, Harlow, Rossi, & Velicer, 1994). Advantages of condom use were measured via 13 reasons (alpha = .78, range = 20–65) to use or not use condoms (e.g., ''I would feel safer'' or ''It would be a lot of trouble''), rated on a 5-point scale (''not at all important'' to ''very important'').

Self-efficacy for condom use (Prochaska et al., 1994). This scale contains 13 items (alpha = .94, range 13–52) reflecting participants' beliefs in their abilities to use condoms in various contexts (e.g. ''How sure are you that you could use a condom when . . . your partner doesn't want to use one'' ''. . . you are depressed''). Participants responded on a 4-point scale (''very sure I could'' to ''very sure I couldn't'').

Tolerance for people with AIDS (Brown et al., 2000; alpha = .76, range 6–18). Tolerance for people with AIDS was assessed via 6 items (e.g., ''I think that the kids who have the AIDS virus should be kept out of school'') with response choices of ''yes,'' ''sort of true,'' or ''no.''

Sexual Self-Esteem Inventory (SSEI; Zeanah & Schwarz, 1996). The SSEI includes 35 items (alpha = .90, range 85–188) rated on a 6-point scale (''disagree strongly'' to ''agree strongly''). The scale assesses affective responses to personal appraisals of sexual thoughts, feelings, and behaviors with items such as ''I am pleased with my physical appearance'' or ''I feel guilty about my sexual thoughts and feelings.''

HIV knowledge (Brown et al., 2000). A 20-item knowledge scale was administered (alpha = .69, range 5–20). Participants responded ''true,'' ''false,'' or ''not sure'' (coded as incorrect) to items such as ''A birth control pill will protect you against AIDS.''

Higher scores on these measures indicate more positive, less risky attitudes/ cognitions and more knowledge.

Psychological Factors

Computerized Diagnostic Interview Schedule for Children (C-DISC; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000). The C-DISC is a structured, computer-assisted diagnostic interview that screens for a full range of DSM-IV diagnoses and was administered via audio-assisted laptop computer to participants. The Present State Youth version was used to assess for the presence of the following psychiatric disorders: Major Depressive Disorder (MDD), Generalized Anxiety Disorder (GAD), Posttraumatic Stress Disorder (PTSD), Mania/Hypomania, Oppositional Defiant Disorder (ODD), and Conduct Disorder (CD). To minimize subject burden, diagnoses less frequently observed in youth in alternative schools and of less interest to the aims of the project, such as Enuresis, were not included. Diagnoses were derived using the scoring algorithm developed by the DISC development group, which provides three clinical categories. A positive diagnosis exists if the adolescent reports full symptom, duration, and frequency criteria according to the DSM-IV. An intermediate diagnosis is assigned when at least half of the disorder criteria have been endorsed. A negative diagnosis is given when less than half of the criteria have been met. Given evidence from the larger trauma literature that subthreshold diagnoses confer clinically meaningful levels of distress, functional impairment, and even suicidal ideation, both positive and intermediate diagnoses (hereafter termed ''diagnosed'') were included in analyses related to the presence of a psychiatric disorder, similar to previous studies (Carlier & Gersons, 1995; Marshall et al., 2001; Schutzwohl & Maercker, 1999; Stein, Walker, Hazen, & Forde, 1997; Weiss et al., 1992).

Columbia Impairment Scale (CIS; Bird et al., 1993). The CIS includes 13 items (alpha = .82, range 13-54) assessing disturbance in general functioning in various domains of behavior (e.g., ''How much of a problem do you think you have with . . . your behavior at school (or job)'' or ''getting along with your mother''). Items are rated on a 5-point scale from ''none'' to ''very big.''

Brief Symptom Inventory-18 (BSI; Derogatis & Savitz, 2000). The BSI was administered, assessing symptoms of depression, anxiety, and somatization (alpha = .93, range 18–90). Responses were given on a 5-point Scale (''not at all'' to ''extremely'').

Family Assessment Device (FAD; Epstein, Baldwin, & Bishop, 1983). The FAD General Functioning subscale (alpha = .84, range 17–44) was used to assess the overall

Table I. Rates of positive or intermediate diagnoses from the C-DISC among adolescents in alternative/therapeutic schools by history of sexual abuse (N = 155)

	No significant history of sexual abuse (%) (n = 119)	Significant history of sexual abuse (%) (n = 36)	χ^2	p
Generalized Anxiety Disorder (n = 22)	13[a]	19	1.02	.312
Post Traumatic Stress Disorder (n = 17)	8	19	3.45	.063
Major Depressive Disorder (n = 29)	14[a]	34[c]	6.94	.008
Mania/Hypomania (n = 10)	7[a]	6	.068	.794
Oppositional Defiant Disorder (n = 55)	33[b]	50[d]	3.49	.062
Conduct Disorder (n = 54)	28[a]	60	12.13	.000
At Least One Diagnosis (n=94)	54	83	10.11	.001
More Than One Diagnosis (n = 61)	33	61	9.30	.002

Note. ''No significant history of sexual abuse'' refers to a score in the ''none'' or ''low'' categories of the Childhood Trauma Questionnaire. Some participants provided incomplete data for some categories of the Computerized Diagnostic Interview Schedule for Children (C-DISC).
[a] n = 118.
[b] n = 117.
[c] n = 35.
[d] n = 34.

health and pathology of the family via 12 items (e.g., ''We can express feelings to each other'') on a 4-point scale (''strongly agree'' to ''strongly disagree'').

Weinberger Adjustment Inventory (WAI; Weinberger, Feldman, Ford, & Shastain, 1987). The WAI measures overall adjustment of adolescents; this study used two 12-item subscales, Distress (alpha = .88, range 14–59) and Restraint (alpha = .81, range 18–59), rated on 5-point scales (''mostly false'' to ''mostly true''). The Distress subscale includes items related to anxiety, depression, and low self-esteem, such as ''I usually think of myself as a happy person.'' The Restraint subscale assesses the ability to control impulses and suppress aggression (e.g., ''I do things without giving them enough thought'').

Toronto Alexithymia Scale (TAS; Bagby, Parker, & Taylor, 1994). The TAS is a 20-item questionnaire (alpha = .75, range 23–83) measuring symptoms of difficulties identifying and describing feelings. Participants responded to items such as ''I am able to describe my feelings easily'' on a 5-point scale (''strongly disagree'' to ''strongly agree'').

Hope Scale (Snyder et al., 1997). This scale is a 6-item assessment (alpha = .84, range 8–36) of optimistic thinking (e.g., ''Even when others want to quit, I know that I can find ways to solve the problem'') rated on a 6-point scale.

With the exceptions of the Hope Scale and WAI Restraint, higher scores indicate more symptoms or impairment for all scales.

Data Analysis

Analyses were performed using SPSS 14.0 for Windows (SPSS Inc., 2006). Students with histories of SA were compared to those without such histories on demographic variables, presence of psychiatric disorders, sexual risk, sexual attitudes, and psychological factors using Chi-square analyses and t-tests. For those sexual variables (behaviors, attitudes, and cognitions) significantly related to SA in bivariate analyses, adjusted odds ratios (AORs) were calculated using multiple logistic regression to examine the hypothesis that a history of SA would be associated with sex risk even after controlling for gender and the presence of a psychiatric disorder. Some participants did not complete all measures (e.g., seven adolescents did not complete the CDISC). Analyses included all possible participants, and sample sizes for each analysis are described in Tables 1–3.

Results

Consistent with prior investigations of alternative school settings (Buzi et al, 2003), 37 participants (23%) reported SA in the moderate or severe classifications of the CTQ. More females reported having been sexually abused than males [29% vs. 15%; χ^2 (1, N = 162) = 4.75, p < .05], and of those abused, 73% (N = 27) were girls. Due to small samples of individual minority racial groups, white participants were compared to non-white participants. No significant differences with regards to abuse emerged [23% vs. 29%; χ^2 (1, N = 146) = .631, p = .43]. Similarly, Latino ethnicity [28% vs. 21%; χ^2 (1, N = 160) = .756, p = .38] and age [15.3 vs. 15.3; t(160) = .04, p = .97] were not related to reports of SA.

Sixty-one percent of the sample endorsed positive or intermediate diagnosis on the C-DISC for at least one of the six diagnostic categories, as shown in Table 1.

Table II. Differences between adolescents in alternative/therapeutic schools with and without SA histories

	No significant history of SA		Significant history of SA			
	%/Mean	SD	%/Mean	SD	Test statistic	N
Sexual behaviors						
Ever had sex	52%		78%		$\chi^2 = 8.11*$	160
Sex in the last 90 days[a]	51%		75%		$\chi^2 = 4.57*$	87
Proportion of protected sex acts[b]	.63	.39	.37	.44	$t = 2.20*$	50
Number of sexual partners last 90 days[b]	1.9	1.1	1.6	0.8	$t = .86$	51
Number of unprotected sex acts[b]	5.8	16.0	16.6	28.0	$t = -1.59$	50
Sexual attitudes and cognitions						
Condom use attitudes	29.6	5.2	26.7	6.3	$t = -2.72*$	152
Condom advantages	51.4	8.5	45.3	10.8	$t = 3.42*$	143
Self-efficacy for condom use	45.3	7.1	38.8	11.3	$t = 2.88*$	124
HIV knowledge	13.1	3.1	13.6	3.5	$t = 1.19$	162
Tolerance for people with AIDS	14.9	2.6	15.4	2.9	$t = -1.14$	158
SSEI	137.4	23.2	139.0	23.9	$t = -.33$	124
Psychological measures						
CIS	26.9	9.1	31.7	8.8	$t = -2.78*$	158
BSI Total Scale	31.0	12.8	37.0	14.7	$t = -2.44*$	162
FAD General Function	29.2	5.8	32.3	5.6	$t = -2.48*$	135
WAI Distress	31.1	9.9	35.5	9.0	$t = -2.45*$	161
WAI Restraint	40.3	7.9	35.3	7.0	$t = 3.49*$	161
TAS Total Scale	51.4	11.8	57.8	9.7	$t = -2.94*$	157
Hope Scale	24.1	5.8	22.6	6.7	$t = 1.25$	160

Note. * $p < .05$. BSI = Brief Symptom Inventory; CIS = Columbia Impairment Scale; CTQ = Childhood Trauma Questionnaire; FAD = Family Assessment Device; SSEI = Sexual Self-Esteem Inventory; TAS = Toronto Alexithymia Scale; WAI = Weinberger Adjustment Inventory. ''No significant history of SA'' refers to a score in the ''none'' or ''low'' categories of the CTQ.
[a]Among participants who had ever been sexually active ($n = 87$).
[b]Among participants who had been sexually active in the past 90 days ($n = 51$).

Adolescents with histories of SA were more likely to be diagnosed than those who denied abuse [χ^2 (1, $N = 155) = 10.11$, $p = .001$], and they were more likely to endorse multiple diagnoses [χ^2 (1, $N = 155) = 9.30$, $p = .002$]. They were also significantly more likely to receive a positive or intermediate diagnosis of MDD and CD. No significant differences emerged for PTSD, ODD, GAD, or Mania/Hypomania.

As seen in Table 2, students with a history of SA were significantly more likely to have ever had vaginal, anal, or oral sex [χ^2 (1, $N = 160) = 8.11$, $p = .004$] than those without histories of SA. Of those who were ever sexually active, adolescents with histories of SA were more likely to report vaginal or anal sex in the past 90 days [χ^2 (1, $N = 87) = 4.57$, $p = .03$]. Of those who were sexually active in the last 90 days, students with histories of SA reported significantly lower proportions of sexual acts protected by a condom than those without such histories [$t(48) = 2.20$, $p = .03$]. No significant differences emerged related to number of sexual partners or the absolute number of acts unprotected by a condom among recently sexually active adolescents.

Students who had been sexually abused expressed riskier attitudes toward condoms. Specifically, they endorsed more negative reactions to condoms [$t(150) = -2.72$, $p = .007$], fewer advantages of condom use [$t(141) = 3.42$, $p = .001$], and lower self-efficacy for using condoms [$t(34.99) = 2.88$, $p = .007$]. They did not exhibit differences in knowledge of HIV-related information, tolerance for people who have HIV, or sexual self-esteem.

On psychological measures, adolescents with histories of SA reported greater functional impairment on the CIS [$t(156) = -2.78$, $p = .006$], and more psychological symptoms on the BSI [$t(160) = -2.44$, $p = .016$]. In addition to rating family functioning more poorly on the FAD [$t(133) = -2.48$, $p = .014$], teens with histories of SA endorsed more distress [$t(159) = -2.45$, $p = .016$] and less restraint [$t(159) = 3.49$, $p = .001$] on the WAI and more alexithymia on the TAS [$t(155) = -2.94$, $p = .004$] than those who did not report significant abuse. No significant difference on the Hope Scale emerged.

To control for the significant influences of gender and psychiatric symptomatology on SA as well as sexual

Table III. Logistic regression models

	df	Wald	AOR	CI for AOR		p
Had ever had sex (N = 153)						
Gender	1	.02	.95	.47	1.90	.881
Psychiatric diagnosis	1	4.59	2.17	1.07	4.42	.032
Sexual abuse	1	5.56	2.83	1.19	6.73	.018
Had sex in the last 90 days (N = 83)						
Gender	1	2.57	2.29	.83	6.30	.109
Psychiatric diagnosis	1	.73	1.58	.55	4.55	.395
Sexual abuse	1	4.56	3.19	1.10	9.24	.033
Had unprotected sex in last 90 days (N = 47)						
Gender	1	4.04	.10	.01	.95	.045
Psychiatric diagnosis	1	4.90	.09	.01	.75	.027
Sexual abuse	1	5.12	8.33	1.33	52.26	.024
Fewer advantages of condom use (N = 137)						
Gender	1	14.18	4.66	2.09	10.39	.000
Psychiatric diagnosis	1	1.62	1.69	.75	3.8	.203
Sexual abuse	1	6.49	3.24	1.31	8.02	.011
Poorer attitudes toward condom use (N = 145)						
Gender	1	.01	1.03	.51	2.07	.941
Psychiatric diagnosis	1	4.65	.45	.22	.93	.031
Sexual abuse	1	1.92	.55	.24	1.28	.166
Lower self-efficacy for condom use (N = 116)						
Gender	1	.002	.98	.45	2.14	.961
Psychiatric diagnosis	1	1.34	1.61	.72	3.58	.247
Sexual abuse	1	2.88	2.22	.88	5.60	.090

Note. Referent groups for the independent variables were female, no diagnosis, and none/low on the Childhood Trauma Questionnaire.

behaviors and attitudes, odds ratios adjusted for both gender and the presence of a positive or intermediate C-DISC diagnosis were calculated using multiple logistic regression to determine the unique influence of SA on the sexual behavior and attitudinal/cognitive variables found to be significant in bivariate analyses. For ease of interpretation, proportion of protected sex acts was categorized by whether or not the participant had ever used a condom in the last 90 days. Scales of attitudes/cognitions were dichotomized using median splits.

Controlling for gender and presence of any psychiatric diagnosis, a SA history was associated with a lifetime history of sex (AOR = 2.83, p = .018), having had sex in the last 90 days (AOR = 3.19, p = .033), and not using condoms in the past 90 days (AOR, 8.33, p = .024). A history of SA was also associated with the lower half of scores (riskier attitudes) on the scale describing advantages of condom use (AOR = 3.24, p = .011). No significant associations with abuse emerged regarding condom self-efficacy or attitudes toward condom use. See Table 3 for complete results of the logistic regression models.

Discussion

The present investigation is the first to examine the relationship of SA with sex risk attitudes and behaviors while accounting for the presence of a psychiatric disorder in girls and boys attending alternative and therapeutic schools. The rate of SA reported by participants in the present investigation (23%) was commensurate with a prior investigation of girls in an alternative school setting (27%; Buzi et al, 2003) and was at the extreme high end relative to rates reported in typical high school settings (range 8–23%; Senn et al., 2008 for summary). Also consistent with the findings of Buzi and colleagues, participants in this study with a SA history were significantly more likely to be sexually active and risky. Youth with a SA history used condoms in only 37% of sexual encounters; their non-abused peers reported using condoms 63% of the time.

SA was related to the likelihood of endorsing significant symptomatology on at least one psychiatric diagnostic category of the computerized interview (83% vs. 54%). Even among this at-risk population, it appears that the frequency of psychiatric disturbance was more common among those who had been sexually abused, and that the nature of these disturbances included both internalizing and externalizing symptoms. Consistent with previous literature, those who reported SA also reported significant differences from non-abused peers on a variety of psychological measures. This suggests that SA has a wide-ranging psychological impact, even when compared to that of other teens with psychiatric difficulties. In short, this is a highly vulnerable population.

The present study also examined the associations of SA with sex risk after applying conservative statistical control for the effects of gender and psychiatric symptomatology. All three behavioral models were consistent with the hypotheses. The odds of having ever been sexually active were greater for youth with a history of SA than for non-abused peers, as were the odds of having recently had sex and of not using condoms. These data suggest that the behavioral risks observed with SA are not solely a result of the mental health challenges that often result from SA. In fact, with SA in the models, psychiatric diagnosis represented additional risk in only one model, ever being sexually active. Psychiatric diagnosis was not significantly associated in three models and was associated with less risk in two others, using condoms and condom attitudes. This suggests that SA may be a more salient factor in sexual risk than psychiatric diagnosis for these adolescents.

Consistent with this pattern of greater sexual risk, even when accounting for psychiatric disorder, adolescents

with histories of SA reported fewer advantages towards using condoms than those without histories of SA. While attitudes and cognitions related to condoms differed in bivariate analyses, other attitudes and cognitions (tolerance for people with HIV, sexual self-esteem, and HIV knowledge) did not, suggesting that the difference between groups was specifically related to condoms and not merely a general difference on all scales related to sex or sexual outcomes. It is also noteworthy that a low rate of condom use was reported. Condom use typically requires a process of communication and negotiation between partners, who must share control to decide on safer sex. Other research has shown that sexually active youth with a history of SA show poorer HIV-preventive communication skills (Brown, Kessel, Lourie, Ford, & Lipsitt, 1997). Moreover, as youth with a SA history in this study endorsed more alexithymia, communication deficits may be influenced by difficulties identifying one's own affect.

Although the data cannot confirm the origin of the negative condom attitudes among the SA group, a history of SA may damage adolescents' perceptions of control in sexual situations. Thus, they may have less perceived ability to raise the topic of condoms or control condom use. For adolescents who have been sexually abused, this may create cognitive dissonance between the importance of condoms and their diminished self-efficacy to use them. As a result, they may adopt negative cognitions about condoms to reduce this dissonance, thus creating the poor attitudes and usage found in this study.

These data have important implications for pediatric practitioners, particularly those working with maltreated children. Providers should be aware of the sexual risk behaviors that are associated with sexual abuse, independent of the psychiatric functioning of the adolescents with whom they work. Practitioners are encouraged to have open conversations with teens that elicit thoughts and attitudes about sex, since without these discussions maladaptive cognitions and attitudes appear likely to persist. Discussing the importance of condom use and of communicating with partners about sexual wishes is critical to the health and well-being of adolescents with a history of SA. Furthermore, as suggested by Lescano et al. (2004), practicing the identification and labeling of emotions to reduce alexithymia may be beneficial in combination with teaching affect regulation strategies. Adolescents who have been sexually abused may also benefit from cognitive monitoring techniques to recognize unhealthy assumptions related to sexuality that they may hold. Role plays can provide opportunities for experiential training in these skills. These approaches may improve alexithymia, attitudes toward condoms, and condom use and lead to less risk for this vulnerable population.

Limitations to the present research exist. First, the study did not assess details of abuse histories that might be useful in describing the sample, such as the frequency of the abuse (such that repeated sexual trauma may have different deleterious effects than single events) or the timing of abuse in relation to other developmental milestones (such as puberty or onset of mental health problems). It is also possible that some adolescents, when asked if they had ever had sex, may have included their abusive experience(s) when answering this question. In addition, the CTQ does not obtain descriptions of the nature of abuse, thus the study may have included a broad range of abuse experiences (e.g., coerced sex, rape, incest, molestation by non-family members, etc.). These factors, as well as the ways in which adolescents defined abuse, may have confounded analyses. Also, the cross-sectional nature of the data prevents temporal conclusions from being drawn. This study did not investigate the psychological mechanisms by which SA is associated with sexual risk, and the study sample size did not allow for examination of all possible mediators; further research on these factors is needed. The sample sizes for analyses related to sexual behavior, in particular, were small, due to the number of sexually active participants in the sample. While significant results were identified for variables related to sexual activity, the resulting confidence intervals are wide, making conclusions regarding the magnitude of these effects difficult. Schools were advised that, because it was not clear how adolescents with a history of sexual aggression might respond to the content of the intervention program, students with such histories should be excluded from referral. This may have excluded some students with a history of SA. Adolescents with histories of SA who become sexual aggressors may have different patterns of psychiatric symptoms than those who do not become sexual aggressors. Also, information related to the number of students eligible for participation was not collected for the study, and thus the generalizability of the sample obtained is difficult to determine. Finally, key variables (e.g., SA and sexual activity) relied on self-reports, although confidential laptop computer administration has been found to increase reports of sensitive sexual behaviors (Romer et al., 1997).

This study suggests that sexual abuse adds to sexual risk outcomes above and beyond the risk conferred by the psychiatric disorders that many sexually abused adolescents experience. Given greater frequency of risky sexual attitudes and behavior among adolescents with SA histories, highlighting these issues in treatment is of

critical importance. Fortunately, alternative and therapeutic schools can also provide rich settings for addressing these topics with these vulnerable youth.

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