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Psychological Impact of Types of Sexual Trauma Among College Women

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Studies typically demonstrate that sexual victimization is associated with negative outcomes, yet they often fail to control for other trauma exposure and rarely address the impact of developmental level at the time of exposure or the type of sexual trauma experienced. The present study addresses these confounds by identifying groups of women with unique, nonoverlapping sexual trauma histories and examines the association between type of sexual trauma exposure and mental health impairment, social adjustment, and sexual functioning. This study compared five discrete groups of college-sophomore women based on self-identified trauma histories including no trauma, childhood sexual assault, childhood sexual abuse, adolescent sexual assault, and revictimization. Significant differences based on sexual trauma type were observed; individuals who experienced adolescent sexual assault or revictimization were at greatest risk for psychopathology, poor social adjustment, and risky sexual behaviors.

Sexual trauma, encompassing experiences such as molestation, rape, and ongoing sexual abuse, is unfortunately quite common. In a nationally representative sample of college women, 20% of respondents reported that they had experienced forced sexual intercourse (Brener, McMahon, Warren, & Douglas, 1999). In a study of New Zealand university students, 51% of women reported some type of sexual-victimization history, with 25% reporting experiences of rape or attempted rape (Gavey, 1991).

Sexual victimization is associated with negative emotional, physical, and behavioral outcomes. Victims of sexual trauma have a significantly higher prevalence of both mental and physical health problems when compared to nonvictims (e.g., Follette, Polusny, Bechtle, & Naugle, 1996) and are more likely to engage in risky behaviors, including substance use and sexual risk-taking behavior (e.g., Kilpatrick, Acierno, Resnick, Saunders, & Best, 1997).

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Childhood Sexual Abuse

Multiple meta-analyses have established a relationship between childhood sexual abuse (CSA) and later maladjustment (e.g., Rind, Tromovitch, & Bauserman, 1998). Molnar, Buka, and Kessler (2001) found that among a nationally representative sample of women from the National Comorbidity Survey, CSA was significantly associated with 14 of 17 lifetime mood, anxiety, and substance-use disorders. This is consistent with numerous studies that found relationships between CSA and subsequent psychopathology including depression, substance-use disorders, eating disorders, and anxiety disorders including PTSD (e.g., Rodriguez, Ryan, Vande Kemp, & Foy, 1997) as well as medical problems (e.g., Romans, Belaise, Martin, Morris, & Raffi, 2002). Although these studies pointed to strong relationships between CSA and later

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psychopathology, the mechanisms through which exposure has an impact on outcomes is not clearly understood as victims of CSA often experience other traumas as well (e.g., Rodriguez et al., 1997). Yet, this type of confound is rarely addressed conceptually or controlled for statistically. Further, many studies (e.g., Merrill, Thomsen, Sinclair, Gold, & Milner, 2001) do not distinguish between a single episode versus ongoing abuse when examining the impact of childhood sexual trauma.

Revictimization

CSA also is associated with subsequent victimization (e.g., Messman-Moore & Long, 2003). A recent meta-analysis estimated that 15 to 79% of female CSA survivors experienced adult rape (Roodman & Clum, 2001). Victims of CSA also have significantly higher rates of intimate partner violence (Briere & Runtz, 1987). Further, there is evidence to suggest that women who are exposed to multiple traumatic events are more likely to experience a negative impact than women who experience single-event traumas (e.g., Follette et al., 1996).

Despite the substantial literature documenting the spectrum of negative outcomes of childhood sexual trauma, very little research has examined the unique impact of varying types of sexual trauma. Sexual trauma can occur as a single episode, a number of single episodes, or in an ongoing way (i.e., abuse). Further, it can occur throughout the life span, even among the elderly, as well as at various crucial developmental points, including early childhood or adolescence. These differences are rarely addressed in the empirical literature even though such variations are likely to be associated with different outcomes.

Research has tended to focus myopically on target traumatic events while not addressing the impact of other traumatic exposures. In a study using National Comorbidity Survey data, Ullman and Brecklin (2002) reported that 73% of their sexual assault respondents experienced a traumatic life event other than sexual assault, and greater number of traumatic events was associated with higher risk for PTSD. It therefore seems important to consider the entire trauma history when examining outcomes or, alternatively, to target individuals who have not been exposed to other types of trauma. The current study used the latter strategy to examine the specific impact of sexual trauma. Participants were selected based on particular trauma exposures, allowing for the examination of the relationship between nonoverlapping types of sexual trauma and their associated mental health and behavioral outcomes.

We hypothesized that a non-trauma-exposed group would have the least symptomatology, the highest social adjustment, and the most adaptive sexual functioning followed by a progression that would reflect a gradient with more severe and more frequent sexual trauma exposure being associated with greater negative impact. In addition, it was hypothesized that sexual trauma exposure during childhood would be associated with more severe outcomes than exposure during adolescence.

Method

Participants

Participants were 125 college-sophomore women. These women were part of a larger sample from six college campuses who were screened for trauma exposure and then selected for specific trauma histories following an extensive telephone screen. The purpose of the larger study was to examine trauma-specific outcomes in a sample of young women who were carefully screened for their exposure to specific and mutually exclusive trauma categories.

The majority of the sample was single (97%), and the mean age was 19.29 years ($SD = 0.61$). Two thirds of the sample was White, 23% was African American, and 10% was Asian American or other ethnicity. Twenty-two percent of the sample reported that their fathers had less than a college education, 45% had fathers with at least some college, and 33% had fathers with more than a college education. Comparable figures for mothers were 18, 54, and 28%, respectively.

Participants were assigned to mutually exclusive sexual trauma groups based on their responses to the telephone interview. Definitions for the five sexual trauma groups follow. (a) *No Trauma* ($n = 58$): Participants responded negatively to all questions on the Stressful Life Events Screening Questionnaire (by mail) or only reported events that fell significantly below a severity threshold. A negative trauma history was then confirmed during the telephone interview. (b) *Childhood sexual assault* (CSAssault; $n = 15$): Participants endorsed only a single act of molestation or the insertion of objects, fingers, or penis into the participant's rectum or vagina prior to the age of 12 years by a perpetrator at least 5 years older than the participant. (c) *Adolescent sexual assault* (ASAssault; $n = 33$): Participants endorsed only a single act of molestation or the insertion of objects, fingers, or penis into the participant's rectum or vagina at age 12 years or over. With the exception of acts involving relatives that did not require the use of force for inclusion, physical force or physical

threat was required for assaults involving a perpetrator who was not a relative. The acts had to be against the participant's will or occur while she was helpless. This category included attempted rape with physical force or physical threat. (d) *Childhood sexual abuse* (CSAbuse; $n = 9$): Participants endorsed sexual assault (as defined earlier) at least five times in the period of 1 year by the same (and only) perpetrator prior to age 12 years without subsequent victimization by another perpetrator. (e) *Revictimization* (REVIC; $n = 10$): This was a multiple-victimization category. Participants endorsed both childhood and adolescent sexual trauma.

For participants in the CSAssault, ASAssault, CSAbuse, and REVIC groups, the only traumas experienced were the sexual traumas that led to their classification in one of the four sexual trauma groups. Participants with concurrent physical assault or abuse or *any* other type of trauma were not included in this study. A limited number of women with sexual abuse initiated during adolescence prevented having a sixth category of adolescent sexual abuse.

Procedure

Explanations of the study procedures have been published previously (Green et al., 2000; Green et al., 2001). Mailings were sent during 4 semesters to all college-sophomore women who were below the age of 24 and taking at least 9 credit hours during that semester. Women were sent a detailed description of the study, an assurance of confidentiality, a packet of self-report questionnaires, and a separate consent form on which they could provide their name and telephone number if they were interested in participating in the next phase of the study. In total, 10,722 questionnaires were mailed and 2,568 were returned (response rate = 24%). Of those returned, 65% gave permission to be contacted for the next phase of the study.

Based on whether their initial questionnaire responses approximated inclusion criteria, 700 women were screened by telephone to confirm specific and mutually exclusive traumatic-event-exposure histories. Based on this second screening, 363 women were eventually interviewed in person. Women signed a separate consent form for a 3-hr interview and were paid $25. Study procedures were approved by the Georgetown University Institutional Review Board.

Interviewers

Interviewers were six women graduate students from clinical psychology doctoral programs in a subset of the campuses studied and two bachelor's-level female research assistants. The interviewers conducted the telephone trauma screening interviews and the in-person interviews. Interviewers were trained to conduct the Structured Clinical Interview for the *Diagnostic and Statistical Manual for Mental Disorders, fourth edition* (*DSM-IV*; American Psychiatric Association, 1994) using training tapes, observation of skilled interviewers, and observed practice with feedback. A reliability study was conducted for those aspects of the interview that required ratings. Interviewers received ongoing supervision, and all interviews were reviewed.

Mail Screening Measures

Demographic Questionnaire

This instrument, created for the study, asks which college the student was attending, year in school, credit hours, number of hours per week working, ethnicity, current age, and marital status.

Stressful Life Events Screening Questionnaire (SLESQ; Corcoran, Green, Goodman, & Krinsley, 2000; Goodman, Corcoran, Turner, Yuan, & Green, 1998)

The SLESQ, developed for the current study, screens for a history of 13 Criterion A stressor events that would be expected to be associated with PTSD according to the *DSM-IV* (American Psychiatric Association, 1994). Test-retest reliability for the number of events reported was .89. Validity, established through an interview 2 weeks later, showed a correlation of .77, with a median kappa of .64. These reliability and validity estimates are comparable to those of the few other trauma-exposure instruments that have undergone similar psychometric examination (Corcoran et al., 2000).

Trauma Symptom Inventory (TSI; Briere, Elliott, Harris, & Cotman, 1995)

The TSI evaluates posttraumatic symptomatology, including symptoms typically associated with PTSD, acute stress disorder (ASD), and the intra- and interpersonal difficulties that are often associated with chronic traumatic exposure. The inventory consists of three validity scales and 10 clinical scales. The clinical scales of the TSI are internally consistent and exhibit reasonable convergent, predictive, and incremental validity (Briere,

1996). This study examined the Intrusion-Avoidance subscale.

Interview-Phase Measures

Telephone Interview

Participants were categorized into mutually exclusive trauma-history groups based on the telephone interview. The telephone interview adapted questions from four established interviews: Russell's (1986) semistructured sexual abuse interview, the Potential Stressful Events Interview (Resnick, Falsetti, Kilpatrick, & Freedy, 1996), the high-magnitude stressors portion of the trauma-history interview used in the *DSM-IV* field trials (Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993), and the Conflict Tactics Scale (Straus, 1989), a measure of physical assault experiences.

Structured Interview for Disorders of Extreme Stress (SIDES; Pelcovitz et al., 1997)

This interview assesses the presence of 48 symptoms characteristic of "Disorders of Extreme Stress Not Otherwise Specified" (DESNOS) and yields a total DESNOS score as well as seven subscale scores. The interview has good interrater reliability (κs = .88–1.00) and high internal consistency (α = .96) (Pelcovitz et al., 1997). This study examined the total symptom score.

Structured Clinical Interview for DSM-IV–Nonpatient version (SCID; First, Spitzer, Gibbon, & Williams, 1996)

The SCID, a structured interview that assesses both lifetime and current Axis I diagnoses, is based on the *DSM-IV*. Reliability for rating the diagnoses was conducted on a sample of 52 interviews from this study, of which one interviewer conducted the interview and a second person observed and rated. Kappas for the reliability of the ratings for lifetime disorders were .81 for ASD, 1.00 for PTSD, .92 for major depressive disorder (MDD), .78 for alcohol abuse, and .79 for alcohol dependence. Kappas for additional diagnoses ranged from .48 to 1.00, with likely attenuation due to the infrequency of some diagnoses. This study examined between-group differences in the number of lifetime disorders for all diagnoses assessed by the SCID as well as specific diagnoses that were relatively common (prevalence >10%) including ASD, PTSD, MDD, and alcohol abuse and dependence.

Borderline Personality Module, Structured Clinical Interview for DSM-IV Personality Disorders (SCID-II 2.0; First, Spitzer, Gibbon, & Williams, 1995)

The basic structure of SCID-II 2.0 is similar to the SCID for Axis I disorders. Interrater reliability for both categorical (κ = .91) and dimensional (intraclass coefficient = .95) evaluations was adequate for the borderline module (Maffie et al., 1997). The measure also was found to have satisfactory internal consistency.

Symptom Checklist-90R (SCL-90; Derogatis, 1983)

The SCL-90, a 90-item self-report symptom inventory designed to measure psychological distress, yields nine symptom dimensions as well as an overall Global Severity Index (GSI). It has been shown to have good reliability and validity and has been widely used in studies of traumatized individuals. This study examined the GSI.

Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986; Carlson & Putnam, 1993)

The DES, a 28-item questionnaire, assesses the frequency of dissociative experiences in participants' lives. Participants mark the percentage of time, in 10% increments, that they have experienced each symptom (Carlson & Putnam, 1993); the mean score is used as the summary.

Sexual Functioning Scale (SFS)

This 41-item self-report instrument was modified for the present study based on a questionnaire used in a study of breast cancer survivors conducted by some of the present authors. It assesses reproductive health as well as feelings and experiences regarding sex. Items regarding age at first intercourse, number of lifetime partners, recent intercourse, pregnancy, and sexually transmitted diseases (STDs) were utilized in the present study.

Social Adjustment Scale–Self Report (SAS; Weissman, Prusoff, Thompson, Harding, & Myers, 1978)

The SAS consists of 54 items, each with five response options, summarized to yield an overall functioning score and scores in specific areas. Higher scores indicate worse functioning. The SAS has high test-retest reliability over time (.80). This study examined overall social adjustment.

Results

The mutually exclusive sexual trauma groups did not significantly differ in age, ethnicity, father's education level, whether their parents were separated or divorced, or frequency of parental arguments or verbal abuse of the participant by parents. The omnibus test examining differences in parental physical violence was significant, $F(4, 121) = 3.01$, $p < .05$, although none of the pairwise comparisons were significant.

The groups were examined for differences in number of lifetime SCID diagnoses, specific SCID diagnoses, trauma-related and general symptoms, social adjustment, and sexual functioning. For continuous variables, analysis of variance was used to test for differences, with Tukey's Studentized Range (HSD) test for follow-up comparisons among specific means. For nonstatistically significant comparisons among specific means, effect sizes (Cohen's *d*) were calculated and evaluated based on Cohen's (1988) classifications of the magnitude of effect sizes (i.e., .20 small, .50 medium, .80 large). Analysis of covariance was used to adjust for demographic differences where these were significantly correlated with assessment measures. Differences in degrees of freedom are due to missing data. For categorical variables, chi-square tests were used to examine intergroup differences. In view of the multiple comparisons, Type I error was controlled through downward adjustment of alpha error level according to a modified Bonferroni procedure (Jaccard & Wan, 1996).

Axis I Diagnoses

Table 1 displays the mean number of total lifetime Axis I SCID disorders by sexual trauma group as well as the percentage of individuals in each group with at least one diagnosis and with two or more diagnoses. The highest number of diagnoses were found in the REVIC and ASAssault groups. The REVIC group had significantly more psychiatric diagnoses than the CSAbuse, CSAssault, and No Trauma groups. The ASAssault group had significantly more psychiatric diagnoses than the CSAssault and No Trauma group. The mean number of SCID diagnoses for the REVIC group was not significantly different from that of the ASAssault group ($d = .60$). The CSAbuse group was not significantly different from the ASAssault ($d = .23$), CSAssault ($d = .69$), and No Trauma ($d = .74$) groups. The CSAssault group was not significantly different from the No Trauma group ($d = .07$).

Table 1. Number of Total Lifetime Axis I SCID Disorders by Sexual Trauma Group

Trauma group (*n*)	$M(SD)$[a]	% of group with any diagnosis	% of group with two or more diagnosis
No Trauma (58)	0.4 (0.7)	32.8	05.2
CSAssault (15)	0.5 (0.7)	33.3	13.3
ASAssault (33)	1.3 (1.2)	75.8	36.4
CSAbuse (9)	1.1 (1.2)	55.6	44.4
REVIC (10)	1.9 (1.8)	80.0	50.0

Note. SCID = Structured Clinical Interview for *DSM-IV*; CSAssault = childhood sexual assault; ASAssault = adolescent sexual assault; CSAbuse = childhood sexual abuse; REVIC = revictimization.
[a]Omnibus test of differences, $F(4, 120) = 8.73$, $p < .0001$; REVIC, ASAssault > CSAssault, No Trauma; REVIC > CSAbuse.

Table 2. Prevalence (%) of Lifetime Axis I SCID Disorders by Sexual Trauma Group

Trauma group (*n*)	Acute stress disorder	Posttraumatic stress disorder[a]	Major depressive disorder[b]	Alcohol abuse or dependence
No Trauma (58)	0.0	0.0	15.5	6.9
CSAssault (15)	0.0	13.3	20.0	0.0
ASAssault (33)	12.1	21.2	33.3	18.2
CSAbuse (9)	11.1	0.0	11.1	22.2
REVIC (10)	10.0	30.0	70.0	10.0

Note. SCID = Structured Clinical Interview for *DSM-IV*.
[a]$\chi^2(4, N = 125) = 20.95$, $p < .01$. [b]$\chi^2(4, N = 125) = 14.45$, $p < .01$.

Table 2 displays the percentage of individuals within each sexual trauma group meeting criteria for specific Axis I SCID disorders including ASD, PTSD, MDD, and alcohol abuse or dependence. There was a significant group difference in lifetime PTSD with the ASAssault and REVIC groups at particular risk for PTSD. Of note, none of the participants in the CSAbuse group met criteria for lifetime PTSD. There also was a significant group difference in lifetime MDD. More than two thirds of the REVIC participants met criteria for lifetime MDD. After the REVIC group, there was a large drop-off in the proportion of participants meeting criteria for lifetime MDD. Differences for ASD and alcohol abuse and dependence were not significant.

Trauma-Related Distress and General Symptoms

Table 3 displays means for various measures of trauma-related and general distress. A significant group difference on the TSI Intrusion and Avoidance subscale was observed. The ASAssault group had significantly higher levels of intrusion and avoidance symptoms than the No Trauma group. The REVIC group had significantly higher levels of intrusion and avoidance than the CSAssault and No Trauma groups. The mean TSI score for the REVIC group was not significantly different from the CSAbuse ($d = .90$) or ASAssault ($d = .87$) groups.

Table 3. Trauma-Related Distress and General Symptoms by Sexual Trauma Group

Trauma group (n)	TSI Int/Av[a] M (SD)	DESNOS sxs[c,d] M (SD)	DES sxs M (SD)	BPD sxs[i] M (SD)	GSI[j] M (SD)
No Trauma (58)	19.2 (14.3)[b]	0.6 (0.9)	7.1 (5.3)[g]	0.2 (0.4)	0.4 (0.3)
CSAssault (15)	24.9 (17.0)	2.3 (3.1)[e]	9.7 (7.3)	0.2 (0.6)	0.7 (0.7)
ASAssault (33)	30.3 (15.0)	2.2 (2.4)[f]	7.6 (5.3)	0.6 (0.8)	0.8 (0.5)
CSAbuse (9)	30.2 (7.5)	1.4 (2.1)	11.7 (10.3)	0.4 (1.0)	0.8 (0.6)
REVIC (10)	42.7 (15.8)	3.3 (3.5)	13.9 (6.7)[h]	1.0 (1.3)	1.0 (0.6)

Note. TSI Int/Av = Trauma Symptom Inventory subscale of Intrusion and Avoidance; DESNOS sxs = symptoms of disorders of extreme stress not otherwise specified; DES sxs = dissociative symptoms; BPD sxs = symptoms of borderline personality disorder; GSI = global severity index.
[a] $F(4, 119) = 7.23$, $p < .001$; REVIC, ASAssault > No Trauma; REVIC > CSAssault. [b] $n = 57$. [c] Means adjusted for verbal abuse by parents. [d] $F(4, 114) = 6.14$, $p < .001$; REVIC, ASAssault > No Trauma. [e] $n = 13$. [f] $n = 29$. [g] $n = 56$. [h] $n = 9$. [i] $F(4, 120) = 4.54$, $p < .01$; REVIC, ASAssault > No Trauma; REVIC > CSAssault. [j] $F(4, 120) = 6.10$, $p < .001$; REVIC, ASAssault > No Trauma.

The CSAbuse group was not significantly different from the ASAssault ($d = .38$), CSAssault ($d = .38$), and No Trauma ($d = .76$) groups. The CSAssault group was not significantly different from the ASAssault ($d = .38$) and No Trauma ($d = .40$) groups.

Only 1 participant in the REVIC group met full DESNOS criteria; however, the number of DESNOS symptoms endorsed was related to sexual trauma group with both the REVIC and ASAssault groups having endorsed significantly more DESNOS symptoms than the No Trauma group. The mean number of DESNOS symptoms endorsed by the REVIC group was not significantly different from that of the CSAbuse ($d = .96$), ASAssault ($d = .53$), and CSAssault ($d = .51$) groups. The CSAbuse group was not significantly different from the ASAssault ($d = .40$), CSAssault ($d = .45$), and No Trauma ($d = .41$) groups. The CSAssault group was not significantly different from the ASAssault ($d = .03$) and No Trauma ($d = .84$) groups.

Table 3 also displays group means for dissociative and borderline personality disorder (BPD) symptoms and the GSI. Group differences for level of dissociative symptoms as measured by the DES were not significant. None of the participants met diagnostic criteria for BPD; however, a significant difference was observed in the level of BPD symptomatology. The ASAssault group evidenced significantly higher levels of BPD symptoms than the No Trauma group. The REVIC group had significantly higher levels of BPD symptoms than the CSAssault and the No Trauma groups. Although differences were significant, the means were very low. The mean number of BPD symptoms endorsed by the REVIC group was not significantly different from that of the CSAbuse ($d = .86$) or ASAssault ($d = .63$) groups. The CSAbuse group was not significantly different from the ASAssault ($d = .20$), CSAssault ($d = .37$), and No Trauma ($d = .43$) groups. The CSAssault group was not significantly different from the ASAssault ($d = .56$) and No Trauma ($d = .07$) groups. A significant difference also was observed on the GSI. Both the REVIC and the ASAssault groups reported significantly higher levels of distress than the No Trauma group. The mean GSI score for the REVIC group was not significantly different from that of the CSAbuse ($d = .53$), ASAssault ($d = .58$), and CSAssault ($d = .63$) groups. The CSAbuse group was not significantly different from the ASAssault ($d = .06$), CSAssault ($d = .10$), and No Trauma ($d = .82$) groups. The CSAssault group was not significantly different from the ASAssault ($d = .03$) or No Trauma ($d = .72$) groups.

Social Adjustment and Sexual Functioning

Table 4 presents findings related to social adjustment and sexual functioning. Group differences in overall social adjustment were not significant. With regard to sexual functioning, number of lifetime sexual partners was associated with group membership. The REVIC group reported significantly more lifetime partners than all other groups. The group with the next highest number of lifetime sexual partners was the ASAssault group. The mean number of lifetime partners reported by the CSAbuse group was not significantly different from that of the ASAssault ($d = .33$), CSAssault ($d = .05$), and No Trauma ($d = .14$) groups. The ASAssault group was not significantly different from the CSAssault ($d = .37$) and No Trauma ($d = .46$) groups. The CSAssault group was not significantly different from the No Trauma group ($d = .09$).

A significant between-group difference also was observed for the proportion of participants who reported ever

Table 4. Social Adjustment and Sexual Behavior by Sexual Trauma Group

	SAS overall	Age at first intercourse	No. of partners[a]	Sex within past 6 months	Ever pregnant[c]	Ever STD
Trauma group	*M* (*SD*)	*M* (*SD*)	%	*M* (*SD*)	%	%
No Trauma	1.5 (0.3)	16.81 (1.49)	2.56 (3.73)[b]	53.45	01.72	06.90
CSAssault	1.6 (0.4)	16.71 (1.60)	2.93 (4.06)	60.00	13.33	06.67
ASAssault	1.7 (0.4)	16.43 (1.43)	4.42 (4.02)	84.85	21.21	18.18
CSAbuse	1.6 (0.2)	17.60 (2.41)	3.11 (3.30)	77.78	11.11	00.00
REVIC	1.9 (0.5)	16.56 (1.67)	8.90 (6.72)	90.00	40.00	20.00

Note. SAS = Social Adjustment Scale; STD = sexually transmitted disease.
[a] $F(4, 119) = 5.50$, $p < .001$, REVIC > CSAbuse, ASAssault, CSAssault, No Trauma. [b] $n = 57$. [c] $\chi^2(4, N = 125) = 16.00$, $p < .01$.

having been pregnant. Forty percent of the REVIC group reported ever having been pregnant, a number that was nearly twice as high as the next group, ASAssault. Differences in age at first sexual intercourse, intercourse during the past 6 months, and ever having had a STD were not significant.

Discussion

This study used a convenience sample of female college sophomores to examine the impact of various types of sexual trauma on mental health, social adjustment, and sexual functioning. The study compared the impact of sexual trauma during different developmental time periods (i.e., childhood, adolescence, both) and among victims of childhood exposure, single episode versus ongoing abuse. Participants were selected from a larger sample based on having experienced sexual trauma in the absence of other types of trauma, which afforded an exclusive focus on the impact of sexual trauma history.

As expected, participants in the REVIC group, the multiple-victimization category, showed the strongest impact across domains. Participants in the REVIC group were more likely to have Axis I diagnoses, comorbid diagnoses, high prevalences of PTSD and depression, and significantly more trauma-related and general distress symptomatology than participants in other groups. Further, the REVIC group displayed significantly more lifetime sexual partners than all other groups as well as a 40% lifetime pregnancy prevalence. These findings are consistent with other studies of revictimization that found more psychological and physical symptoms among revictimized women than women who reported either childhood or adult physical or sexual abuse (Follette et al., 1996; Krupnick et al., 2004; McCauley et al., 1997). These results also extend the literature by demonstrating a similar relationship between revictimization and its impact when the individuals' trauma exposure is limited to sexual trauma.

An unexpected finding was the severity of the outcomes associated with adolescent sexual assault. The mean number of Axis I diagnoses for the ASAssault group was significantly higher than that for the CSAssault and No Trauma groups. In particular, the ASAssault group had relatively high levels of PTSD and MDD. The ASAssault group also had significantly higher levels of intrusion and avoidance, borderline symptoms, and general distress than the No Trauma group, and one fifth reported a prior pregnancy. One explanation is the severity of their sexual trauma exposure. Sixty-six percent of the ASAssault group reported completed rape, 24% reported attempted rape, and 10% reported other sexual assault. By comparison, 20% of the CSAssault group experienced completed rape. These results are consistent with epidemiological studies which link rape with high rates of PTSD (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Norris, 1992) and other negative sequelae. Since CSA is a risk factor for later sexual assault, and this was rarely controlled for in previous studies, it has been unclear to what degree the poor outcomes in other studies were related to the rape itself or the rape compounded by a prior history of CSA (Krupnick et al., 2004). The current study allows for a more direct examination of the impact of a single event of adolescent sexual assault; and it does indeed identify a significant negative impact despite the absence of any prior trauma history. This finding underscores the importance of considering adolescence as a vulnerable time period for a young woman to experience sexual trauma. This period is characterized by important developmental tasks including separation from parents, identity consolidation, and sexual and cognitive development (e.g., Shrier, Hsu, & Yang, 1996). It therefore makes sense that a disruptive traumatic experience such as a sexual assault, which has the potential to impact the adolescent's understanding of sexuality, love, and relationships, could have a profound

and deleterious impact on their "adult" behaviors in these areas.

An additional factor likely playing a role in the ASAssault group findings relates to the recency of their traumatic experience. The mean age at the time of their trauma was 17 years ($SD = 1.82$), 2 years, on average, prior to the study. Although these experiences are clearly more recent than childhood-victimization experiences, sufficient time has lapsed for the abatement of more transitory responses.

While there was a lack of differentiation among the CSAssault, CSAbuse, and No Trauma groups across outcomes, negative findings with regard to the CSAbuse and CSAssault groups should be treated with caution. Their relatively small numbers may have reduced the power to detect differences. In fact, effect sizes support the expected differentiation in impact, suggesting examination in larger studies. Our tentative findings suggest that child sexual trauma exposure alone was not as toxic as might be expected from other studies. Our findings may be due to the fact that childhood abuse survivors in this study had not been revictimized, making them qualitatively different from the large number of survivors who have experienced further victimization.

This study has a number of limitations. The sample is not representative of college-sophomore women since participants for the larger study were selected based on their trauma histories. In addition, it is common for trauma-exposed individuals to have multiple episodes of exposure and exposure across trauma types (Green et al., 2000). Because of the research question we were asking, most women with this profile were excluded from the study. For example, given the strong association in other studies of childhood abuse and further victimization in adulthood, it is likely that the CSA survivors in this study are not truly representative of CSA survivors more generally. Study findings may not generalize to women with the full range of trauma experiences and life difficulties that would hinder entering or remaining in college and those of lower income and education levels; however, given that we studied a sample that was relatively homogeneous in terms of being low risk and high resource, it is especially noteworthy that significant psychopathology and differentiation among groups was observed. Clearly, a subset of college women is at very high risk based on their sexual trauma exposure, highlighting the importance of incorporating screening for trauma and related mental health problems and offering trauma-focused interventions on college campuses. Further, self-identification of trauma history by the participant was the sole basis for inclusion in the sexual trauma categories. Without independent confirmation of trauma exposure, this identification strategy is limited by memory biases and nonreporting; however, the multistaged screening process served to minimize this impact. Women also may have been reluctant to disclose their trauma histories on the telephone. Finally, although the interviewers experienced participants responding to the measure of sexual functioning with regard only to their voluntary sexual experiences, we cannot be absolutely sure that the participants did not also include sexual-victimization experiences.

In conclusion, the results of this study suggest that multiple episodes of sexual victimization (e.g., revictimization) are associated with the greatest risk for negative mental health outcomes and increased risk behavior. The current study extends the literature on revictimization by examining the impact of sexual trauma in the absence of a history of other types of trauma. Women with a single sexual assault in adolescence also were at great risk for negative outcomes, suggesting that adolescence is an important time period for targeting trauma-related interventions and prevention. It is important for researchers to be more precise in linking trauma exposure to outcomes either by examining mutually exclusive trauma groups or carefully considering research participants' full trauma histories.

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