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Adult Sexual Assault: Prevalence, Symptomatology, and Sex Differences in the General Population

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The prevalence and impact of adult sexual assault (ASA) were examined in a stratified random sample of the general population. Among 941 participants, ASA was reported by 22% of women and 3.8% of men. Multivariate risk factors for ASA included a younger age, being female, having been divorced, sexual abuse in childhood, and physical assault in adulthood. Childhood sexual abuse was especially common among sexually assaulted men and women (61 and 59%, respectively). ASA victims were more symptomatic than their nonassaulted cohorts on all scales of the Trauma Symptom Inventory (TSI; J. Briere, 1995), despite an average of 14 years having passed since the assault. Assaulted men reported greater symptomatology than assaulted women, whereas nonassaulted men reported less symptomatology than nonassaulted women.

KEY WORDS: male sexual assault; rape; Trauma Symptom Inventory.

A number of studies suggest that between 13% and 25% of women experience sexual assault at some time in their lives (Kilpatrick, Saunders, Veronen, Best, & Von, 1987; Kilpatrick & Seymour, 1992; Koss & Dinero, 1989; Sorenson, Stein, Siegel, Golding, & Burnam, 1987; Tjaden & Thoennes, 1998). Considerably fewer data are available on men. Those studies available suggest, however, that rates of adult sexual assault (ASA) for men are much lower than for women—between 0.6% and 7.2% (George & Winfield-Laird, 1986; Martin, Rosen, Durand, Stretch, & Knudson, 1998; Sorenson et al., 1987; Tjaden & Thoennes, 1998). One study indicates a slightly higher rate (8.3%) for college men (Tewsbury & Mustaine, 2001). Differences in research methodology, such as the definition of ASA, the approach to screening for ASA, and the method of data collection, are likely to affect the reported prevalence rates (e.g., Koss, 1993).

In general, women are more likely to experience most types of interpersonal violence than men, including child sexual abuse (CSA), partner violence, and stalking (Tjaden & Thoennes, 1998). However, men are more likely to be victims of physical assault (Norris, 1992; Tjaden & Thoennes, 1998) and just as likely to be victims of child physical abuse (CPA; Briere & Elliott, 2003; U.S. Department of Human Services, 2001).

Preliminary data suggest that there may be sex differences with respect to the characteristics of ASA and the events surrounding it. When victimized, women are more likely than men to be injured, to use medical services, and to report the violence to the police (Johnson & Bunge, 2001; Kimerling, Rellini, Kelly, Judson, & Learman, 2002; Tjaden & Thoennes, 1998). However, two studies conducted at rape crisis centers found that men were more likely than women to have had multiple assailants during their attack (Frazier, 1993; Kaufman, Divasto, Jackson, Voorhees, & Christy, 1980).

Several studies have documented the short- and long-term impacts of ASA in women (for reviews, see Koss, 1993; Resick, 1993). Although most victims experience

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some symptom reduction by 3 months postassault, many effects, including fear, anxiety, depression, posttraumatic stress, decreased self-esteem, social difficulties, and sexual dysfunction may continue at significant levels for a number of years thereafter (e.g., Briere, Woo, McRae, & Sitzman, 1997; Burnam et al., 1988; Hanson, Kilpatrick, Falsetti, & Resnick, 1995; Kilpatrick et al., 1987; Resick, 1988).

Clinical studies that include both men and women suggest that immediately following the sexual assault, men present with more denial and emotional control (Kaufman et al., 1980) and higher levels of depression and hostility (Frazier, 1993). Further, sexually assaulted men may be more likely to have a history of at least one psychiatric diagnosis and a prior psychiatric hospitalization than women (Kimerling et al., 2002). One study on adolescent sexual assault found that male victims were more likely to report subsequent behavioral problems, suicidality, violence, and substance abuse than were female victims (Darves-Bornez, Choquet, Ledoux, Gasquet, & Manfredi, 1998). However, clinical samples are generally small and most male victims do not present to clinics unless there has been considerable physical trauma (Tomlinson & Harrison, 1998).

Given the paucity of studies evaluating sexual assault in men, questions remain regarding the prevalence, characteristics, and impacts of ASA among this demographic group in the general population. Additionally, no study has examined the differential effects of ASA on men versus women using a standardized, trauma-specific measure. To further investigate the differential effects of ASA in men and women, this paper reports on results from a relatively large study of trauma symptoms in the general population, using a standardized measure of trauma impacts.

Method

Participants

Among the 941 participants in this sample, 50.2% ($n = 472$) were women. The mean age was 46 years ($SD = 16.5$; range = 18–90 years). Most participants were Caucasian (74.4%, $n = 700$), followed by African American/Black (11.4%, $n = 107$). The modal relationship status was married/cohabitating (55.5%, $n = 521$). The modal family income was under $20,000 (29.4%; $n = 277$), followed by $20,000–29,999 (18.6%; $n = 174$). The modal level of education was trade school/associates degree (32.6%, $n = 306$), followed by a high school education (23.7%, $n = 223$). Most participants were employed (61.7%, $n = 579$) at the time of data collection. This sample is generally comparable to the 1990 U.S. census data on most variables, although participants were somewhat more educated than those in the general population (see Table 1). The sample selection procedure is described below.

Measures

Traumatic Events Survey

The Traumatic Events Survey (TES; Elliott, 1992) evaluates a wide range of childhood and adult traumas. This instrument appears to be a valid measure of exposure to potentially traumatic events, and has been used in several published studies of trauma impacts (see Briere, in press, for a more detailed review of this measure).

Participants were classified as being a victim of ASA if they responded positively to the question, "Since age 18, did you ever have sexual contact with someone (e.g., touching genitals, buttocks, breasts, or having intercourse) because you were threatened or physically forced?"[4] For those who reported a history of ASA, follow-up questions were asked regarding their assault history (i.e., age at first and last assault, number of incidents, whether oral, anal, or vaginal penetration occurred, level of distress at the time of the assault, and current level of distress at the memory of the assault).

Participants were also categorized according to their reported history of other forms of interpersonal violence. They were classified as being the victim of adult physical assault (APA) if they responded positively to the following question on the TES: "As an adult (since age 18) did anyone ever intentionally hit you with a hand, fist, or object causing marks, bruising, bleeding, burns, or broken bones, or otherwise cause you serious injury?" They were classified as having experienced childhood physical abuse (CPA) if they responded positively to the following question: "As a child (before age 18) did anyone ever intentionally hit you with a hand, fist, or object causing marks, bruising, bleeding, burns, or broken bones, or otherwise cause you serious injury?" and indicated that the perpetrator of the violence was a primary adult caretaker (e.g., parent, stepparent, guardian). A history of childhood sexual abuse (CSA) was indexed by a positive response to either of two two question: (1) "As a child (before age 18)

[4]Unfortunately, the TES definition of sexual assault does not include sexual acts committed when the victim is intoxicated, unconscious, or otherwise unable to consent to sex.

Table 1. U.S. Census and Sample Demographics With Adult Sexual Assault Versus Nonassault Differences

Variable	Percent in 1990 U.S. census	Percent in sample	Percent sexually assaulted in sample
Sex			
Women	52.1	50.2	22.0
Men	47.9	49.8	3.8
Age			
18–34	37.7	31.2	15.6
35–54	33.9	38.0	14.0
55–74	20.2	25.1	9.7
75+	7.1	5.6	5.7
Marital status			
Never married	26.9	18.2	15.8
Married/cohabiting	54.8	55.5	7.9
Separated/divorced	10.9	16.8	27.2
Widowed	7.4	9.4	12.5
Education			
Less than high school	24.8	14.6	12.4
High school	30.0	23.7	11.2
Associates/trade school	24.9	32.6	15.7
Bachelor's degree	13.1	18.9	11.2
Graduate degree	7.2	10.2	12.5
Employment status			
Employed	61.2	61.7	12.8
Unemployed	4.1	4.8	13.7
Not in work force	34.7	33.5	11.1
Income			
Less than $20,000	—[a]	29.4	16.0
$20,000–$29,999	—	18.6	17.8
$30,000–$39,999	—	14.0	12.2
$40,000–$54,999	—	15.0	8.6
$55,000–$69,999	—	10.2	6.3
$70,000–$99,999	—	8.6	12.5
More than $100,000	—	4.3	7.5
Race			
Asian	2.9	3.1	10.3
African American/Black	12.1	11.4	12.1
Caucasian	70.3	74.4	13.1
Hispanic	9.0	7.4	15.7
Native American	0.8	2.0	5.3
Other	3.9	1.7	12.5

[a]The age categories used in this study did not match those of the U.S. Census Bureau. Therefore, direct comparison data cannot be presented.

did you have sexual contact with someone (e.g., touching genitals, buttocks, or breasts, or having intercourse) because you were threatened or physically forced?" or (2) "As a child (before age 18), did anyone 5 or more years older than you ever touch your genitals, breasts, buttocks in a sexual way or have you touch them in a sexual way?" Participants were coded as having witnessed domestic violence as a child (WDV) if they responded positively to the question "Have you ever witnessed someone being seriously injured (e.g., bruising, bleeding, burning, broken bones)?" and indicated that the person injured and the person inflicting the injury were parent or parent-figures, and that the assault(s) occurred prior to age 18.

Trauma Symptom Inventory

The Trauma Symptom Inventory (TSI; Briere, 1995) is a 100-item standardized clinical measure of trauma-related symptoms, intended for use in the evaluation of acute and chronic psychological trauma in adults. Each item asks about the frequency with which a given symptom has occurred in the last 6 months, rated on a 0 = *never* to 3 = *often* Likert-like scale. The TSI has 10 clinical scales: *Anxious Arousal, Depression, Anger/Irritability, Intrusive Experiences, Defensive Avoidance, Dissociation, Sexual Concerns, Dysfunctional Sexual Behavior, Impaired Self Reference,* and *Tension Reduction Behavior.* In the normative study, confirmatory factor analysis yielded a three-factor model of symptom outcome: Trauma, Self Difficulties, and Dysphoria. Scores for each of these factors can be calculated, based on the TSI manual (Briere, 1995). The scales of the TSI have high internal consistency (mean clinical scale αs of .86, .84, .87, and .84 in, respectively, general population, university, clinical, and military samples), and exhibit convergent, predictive, and incremental validity in a variety of studies assessing interpersonal violence (e.g., Briere, 1995; Feerick & Haugaard, 1999; Runtz & Roche, 1999; Sanders & Moore, 1999, Shapiro & Schwartz, 1997).

Procedure

This study was part of a larger study on the prevalence and impact of various traumas in the general population (e.g., Briere & Elliott, 2000; Elliott, 1997). A national sampling service generated a stratified random sample based on geographical location of registered owners of automobiles and/or individuals with a listed telephone. According to the U.S. Census, over 95% of all households have telephones (U.S. Census Bureau, n.d.). However, approximately 25% of all individuals with telephones maintain unlisted phone numbers, and thus the sample may potentially underrepresent certain individuals—the more affluent, the financially impoverished, or those whose addresses frequently change (Dillman, 1978).

Research approval for this study was obtained from Biola University when the first author was affiliated there. A questionnaire was mailed to a sample of 1,700 individuals with a cover letter requesting their involvement in a project on traumatic experiences and adult psychological adjustment. Four additional follow-up mailings were sent to nonresponders at approximately 3-week intervals (one of which was sent via special one-day U.S. Postal Service mail). Data were collected over a 2-year period in

two waves. After surveys inadvertently sent to deceased individuals and those undeliverable by the postal service were subtracted, the available participant pool consisted of 1,442 individuals. Of these, 941 participants (65.2%) chose to participate in the study.

Results

Tests Related to the Entire Sample

Univariate analyses revealed four demographic differences between those with a history of ASA and those with no such history. Victims of ASA were more likely to be women, $\chi^2(1, n = 941) = 67.42$, $p < .001$ (22.0% vs. 3.8%). At the time of data collection, ASA victims tended to be younger, $t(939) = 3.33$, $p < .01$, and were more likely to be divorced, $\chi^2(3, N = 938) = 41.50$, $p < .001$. ASA status varied as a function of household income $\chi^2(4, N = 935) = 10.73$, $p < .05$. Specifically, ASA was more frequent for those with less income ($r_s = -.10$, $p < .05$), although one higher income group (women with incomes between $70,000 and $99,999) also had relatively high ASA rates. No ASA status differences were found related to race $\chi^2(5, N = 941) = 1.73$, *ns*, educational level $\chi^2(4, N = 940) = 3.14$, *ns*, or employment status $\chi^2(2, N = 939) = 0.28$, *ns*. Table 1 provides detailed summary of the sample demographics along with the comparable 1990 U.S. census demographics data, with ASA versus nonASA group differences.

It was hypothesized that victims of ASA would differ from those without a sexual assault history on demographic variables and would be more likely to experience other forms of interpersonal violence than their nonassaulted peers. A logistic regression analysis was used to examine the unique relationship between ASA and demographic variables, childhood sexual abuse, childhood physical abuse, witnessing domestic violence as a child, and adult physical assault (see Table 2). At Step 1, age, sex, minority status, divorce status, and income were entered into the logistic equation. At Step 2, child sexual abuse, child physical abuse, and witnessing domestic violence as a child were entered. At Step 3, adult physical assault was entered. Finally, at Step 4, the set of all possible two-way interactions between sex and victimization not involving ASA were entered into the equation (e.g., sex by CSA, sex by CPA, etc). Per standard practice, the interactions were coded by multiplying the main effect variables in question.

Logistic regression analysis indicated that 7 of the 13 variables were uniquely predictive of ASA status while controlling for all other variables in the equation. These were age, sex, divorce status, CSA, CPA, APA, and the interaction between sex and CSA. The strongest risk factors for ASA were being female, having a history of CSA, and having a history of APA.

Table 2. Logistic Regression Results Based on Adult Sexual Assault Status

	Odds ratio	95% confidence interval
Step 1 $\chi^2(5, N = 932) = 101.16$, $p < .001$		
Age	0.98	0.97–0.99
Sex	41.58	3.36–9.68
Minority	1.54	0.46–1.19
Divorced	13.39	1.48–3.64
Income	3.06	0.83–1.01
Step 2 $\chi^2(3, N = 932) = 65.27$, $p < .001$		
Child sexual abuse	38.63	2.58–6.15
Child physical abuse	5.38	1.11–3.34
Witness domestic violence	3.09	0.95–2.73
Step 3 $\chi^2(1, N = 932) = 47.70$, $p < .001$		
Adult physical assault	46.02	3.20–2.73
Step 4 $\chi^2(4, N = 932) = 9.52$, $p < .05$		
Sex × child sexual abuse	4.47	0.09–0.91
Sex × child physical abuse	2.76	0.80–16.27
Sex × witnessed domestic violence	0.16	0.34–5.10
Sex × adult physical assault	0.96	0.57–5.57

Post hoc analyses were performed to clarify the Sex × CSA interaction as it predicted ASA. The results revealed that CSA was twice as common among women than men for those with no history of ASA, $\chi^2(1, N = 819) = 20.83$, $p < .001$ (25.0% vs. 12.4% respectively). However, among individuals with a positive history of ASA, the prevalence of CSA was equivalent for men and women, $\chi^2(1, N = 122) = .038$, *ns* (61.1% vs. 58.7% respectively).

To examine the potential effects of sexual assault, a 2 (Sex) × 2 (ASA status) multivariate analysis of covariance (MANCOVA) was performed, using the 10 scales of the TSI as dependent variables and age as a covariate. The results indicated that age was significantly related to symptomatology, $F(10, 913) = 9.59$, $p < .001$. Follow-up ANCOVAs revealed that younger participants reported greater symptomatology on all 10 TSI scales. A significant main effect was found for ASA, $F(10, 913) = 12.49$, $p < .001$, with post hoc univariate analyses of covariance (ANCOVAs) indicating that participants with a history of ASA were more symptomatic than their nonassaulted peers on all 10 TSI scales. A significant main effect was also found for sex, $F(10, 913) = 6.06$, $p < .001$. Post hoc ANCOVAs indicated that men were more symptomatic than women on Dysfunctional Sexual Behavior and Sexual Concerns, whereas women were more symptomatic than men on Tension Reduction Behavior. Finally, there was a significant two-way interaction between sex and ASA status on TSI scores, $F(10, 913) = 3.06$,

Table 3. Trauma Symptom Inventory Scale Statistics by Adult Sexual Assault Status and Sex

Scale	No ASA		ASA		ASA ANOVAs	Sex ANOVAs	ASA × Sex ANOVAs
	Women (n = 358) M (SD)	Men (n = 447) M (SD)	Women (n = 104) M (SD)	Men (n = 18) M (SD)	F(1,922)	F(1,922)	F(1,922)
Anxious arousal	6.4 (5.1)$_a$	5.4 (5.2)$_b$	9.5 (5.2)$_c$	12.1 (6.6)$_d$	46.16***	1.14	5.92*
Depression	5.9 (5.6)$_a$	4.1 (5.0)$_b$	9.1 (6.1)$_c$	11.6 (7.4)$_c$	50.39***	0.17	7.84**
Anger/irritability	6.6 (5.9)$_a$	6.4 (5.6)$_a$	9.8 (6.4)$_b$	12.9 (6.2)$_c$	31.34	3.34	2.97
Intrusive experiences	4.7 (5.1)$_a$	3.7 (4.7)$_b$	8.7 (5.8)$_c$	10.7 (6.0)$_c$	62.21***	0.39	3.83*
Defensive avoidance	5.6 (5.7)$_a$	4.8 (5.8)$_a$	10.4 (5.7)$_b$	14.2 (7.1)$_c$	77.68***	3.59	7.28**
Dissociation	4.4 (4.5)$_a$	3.7 (4.1)$_b$	7.7 (5.4)$_c$	10.3 (6.1)$_d$	62.77***	2.71	6.53**
Sexual concerns	2.6 (4.2)$_a$	3.4 (4.5)$_b$	5.7 (6.3)$_c$	12.3 (7.4)$_d$	85.91***	36.09***	19.63***
Dysfunctional sexual behavior	1.4 (2.9)$_a$	1.7 (3.3)$_a$	3.4 (5.0)$_b$	8.7 (8.3)$_c$	80.59***	35.37***	24.84***
Impaired self-reference	5.0 (5.4)$_a$	3.8 (4.7)$_b$	8.4 (6.0)$_c$	12.3 (8.0)$_d$	63.70***	3.30	10.13**
Tension reduction behavior	2.0 (2.8)$_a$	1.9 (2.8)$_a$	4.0 (3.9)$_b$	7.1 (5.1)$_c$	74.63***	15.12***	13.58***

Note. ASA = Adult sexual assault. Means not sharing a common subscript are significantly different at $p < .05$.
*$p < .05$. **$p < .01$. ***$p < .001$.

$p < .001$. Post hoc ANCOVAs revealed significant interactions on all TSI scales except Anger/Irritability. Although nonassaulted men reported less symptomatology than nonassaulted women, men with a history of ASA were more symptomatic on the TSI than women with a history of ASA. (See Table 3 for TSI statistics by sex and sexual assault status, and Fig. 1 for the TSI scale profiles by sex and ASA status)

Because the prevalence of CSA was considerably higher for those with an ASA history than those without (59% versus 18%), it was possible that the strength of the relationship between a history of ASA and current psychological distress was due primarily to its covariance with CSA, rather than ASA per se. Ideally, this relationship would be assessed by examining the interaction in a 2 (Sex) × 2 (CSA) × 2 (ASA) MANCOVA, covarying for

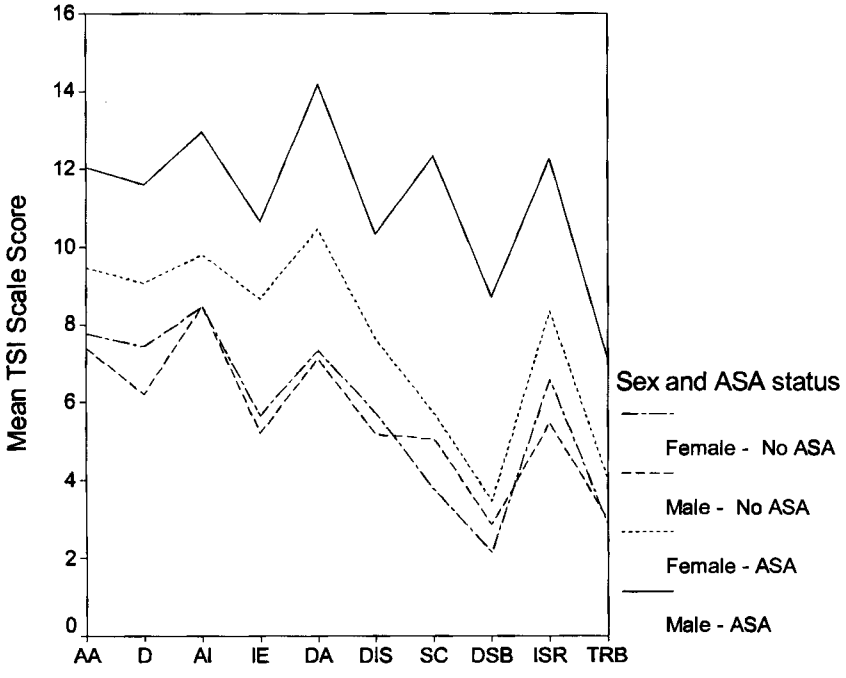

Fig. 1. Trauma Symptom Inventory (TSI) Scale scores as a function of sex and adult sexual assault (ASA) status. *Note.* AA = anxious arousal; D = depression; AI = anger/irritability; IE = intrusive experiences; DA = defensive avoidance; DIS = dissociation; SC = sexual concerns; DSB = dysfunctional sexual behavior; ISR = impaired self reference; TRB = tension reduction behavior.

age. However, this was not possible in this study, given the small number of male participants who had a history of ASA but not CSA ($n = 7$). Instead, two alternative statistical approaches were used to examine this issue.

First, a 2 (Sex) × 2 (ASA) MANCOVA was performed in a stratified subsample of 360 participants. In this subsample, participants were randomly chosen from the subgroups of participants with and without a history of CSA to achieve equal distribution of CSA within the ASA groups, while retaining all male ASA victims in the analysis. Thus, the rate of CSA was 61% in each of the four cells as follows: 92 men with no history of ASA, 18 men with a history of ASA, 151 women with no history of ASA, and 100 women with a history of ASA. The results continued to demonstrate a main effect of ASA on TSI scale scores $F(10, 346) = 4.25$, $p < .001$. Post hoc ANCOVAs indicated that those with a history of ASA had higher symptom levels on all 10 TSI scales.

Second, a 2 (Sex) × 2 (CSA) × 2 (ASA) unique sums-of-squares MANCOVA was calculated for the entire sample, evaluating only the three potential main effects. Thus, the unique effects of ASA were examined while controlling for the effects of CSA, sex, and age. In this analysis, any variance associated with the interaction of these variables was relegated to the error term, making this a conservative test of the ASA effects hypothesis. This analysis continued to demonstrate a main effect for ASA on TSI scores, $F(10, 913) = 6.65$, $p < .001$. There were significant post hoc univariate ANCOVAs for all 10 of the TSI scales, indicating that participants with a history of ASA were more symptomatic in all areas assessed by the TSI than their nonassaulted cohorts, controlling for CSA and demographics.

Tests Related to the Subsample of Assaulted Adults

Among the 122 participants who reported a history of ASA, the average age at first assault was 24.1 years (range = 18–45; $SD = 7.3$) and the average age at last assault was 27.0 (range = 18–55; $SD = 8.9$). Seventy-four percent of all victims experienced sexual penetration during the assault and 62.3% were assaulted by either a lover or spouse. The average length of time since the last sexual assault was 13.8 years, although 20 participants (16.4%) had been assaulted within the year of data collection (range = 0–61; $SD = 14.6$). The modal number of ASA incidents was one (43.4%) followed by 2–5 incidents (32.0%). On a scale of 0–3 (from *not at all* to *very upsetting*), most participants rated the assault as "very upsetting" (74%, $M = 2.7$) and no participant considered it as "not at all upsetting" at the time of its occurrence. Thirty-three percent continued to experience the assault as "very upsetting" at the time of data collection ($M = 1.9$).

Sex differences were found among the assault variables. Men tended to be younger than women at the time of their first assault (20.4 vs. 24.7), $t(104) = -2.11$, $p < .05$, whereas women tended to be older than men at their last assault (21.7 vs. 27.8), $t(104) = 2.51$, $p < .05$, and were more likely to have been assaulted by a lover/spouse (67.3% vs. 33.3%), $\chi^2(1, N = 122) = 6.16$, $p < .01$. There were no sex differences in the number of incidents of ASA, the length of time since last assault, whether the assault occurred in the year prior to data collection, or in the amount of upsetness experienced during the assault.

A step-wise multiple regression analysis was done to determine what variables were associated with increased symptomatology on the TSI among participants with a history of ASA (see Table 4 for summary statistics). To reduce the experiment-wise error-rate, the 3 factor scales of the TSI (rather than the 10 individual scales) were examined. At Step 1, five demographic variables were entered into the equation: age, sex, minority status, divorce status, and income. Three childhood traumas were entered at Step 2: child sexual abuse, child physical abuse, and witnessing domestic violence as a child. At Step 3, adult physical assault was entered. At Step 4, three characteristics of the ASA were entered: the number of incidents, penetration during an incident of ASA, and ASA that occurred during the year prior to data collection.

As shown in Table 4, the TSI trauma factor score was significantly predicted by four of the 12 variables in the regression equation ($R = .65$), $F(12, 105) = 6.69$, $p < .001$. At Step 1, a younger age and being male were

Table 4. Multiple Regression Results on Trauma Symptom Inventory Factor Scores for ASA Subsample

	Trauma factor β	Self factor β	Dysphoria factor β
Step 1			
Age	.20*	.10	.13
Male	.41***	.41***	.37***
Minority	−.03	−.07	−.12
Divorced	.13	.19*	.24**
Income	−.14*	−.12	−.11
Step 2			
Child sexual abuse	.31***	.34***	.30***
Child physical abuse	−.02	−.10	.07
Witness domestic violence	.18	.12	.10
Step 3			
Adult physical assault	.16	.15	.11
Step 4			
Frequency of ASA	.11	.02	.16
Penetration during ASA	.00	.01	.02
ASA this year	.30***	.34***	.17

Note. ASA = Adult sexual assault.
*$p < .05$. **$p < .01$. ***$p < .001$.

predictive of trauma symptoms ($R^2 = .20$), $F(5, 112) = 5.48$, $p < .001$. At Step 2, of the three types of maltreatment, CSA was associated with trauma factor scores (R^2 change = .12), $F(3, 109) = 5.20$, $p < .001$. At Step 3, adult physical assault was not found to be uniquely related to the trauma factor, (R^2 change = .02), $F(1, 108) = 3.48$, *ns*. At Step 4, more recent ASA (i.e., that occurred within a year of data collection) was uniquely related to symptoms on the trauma factor, (R^2 change = .10), $F(3, 105) = 6.12$, $p < .001$.

The TSI self difficulties factor score was associated with four of the 12 variables in the regression equation ($R = .66$), $F(12, 105) = 6.56$, $p < .001$. At Step 1, both being male and currently divorced were predictive of self difficulties ($R^2 = .18$), $F(5, 112) = 5.00$, $p < .001$. At Step 2, CSA was associated with this factor (R^2 change = .12), $F(3, 109) = 5.94$, $p < .001$. At Step 3, adult physical assault did not predict additional variance in self difficulties (R^2 change = .02), $F(1, 108) = 2.90$, *ns*. At Step 4, ASA that occurred within a year of data collection was associated with more self difficulties (R^2 change = .11, $F(3, 105) = 6.93$, $p < .001$).

The TSI dysphoria factor score was significantly predicted by three variables ($R = .60$), $F(12, 105) = 4.97$, $p < .001$. At Step 1, being male and divorced were associated with dysphoria symptoms ($R^2 = .18$), $F(5, 112) = 4.99$, $p < .001$. At Step 2, CSA was associated with dysphoria scores (R^2 change = .11), $F(3, 109) = 5.88$, $p < .001$. At Step 3, adult physical assault was unrelated to the dysphoria factor (R^2 change = .01), $F(1, 108) = 1.65$, *ns*. At Step 4, no assault variables were related to dysphoria symptoms (R^2 change = .06), $F(3, 105) = 3.03$, $p < .05$.

Discussion

This study examined the prevalence and potential impacts of ASA among men and women in the general population. Aspects of this study that discriminate it from most other studies in this area are use of a nationally representative sample, the inclusion of both men and women, and the use of a standardized, trauma-specific measure of psychological distress.

The results of this study are consistent with other research regarding the prevalence of sexual assault among women in the general population (Koss, 1993; Martin et al., 1998). The rate of sexual assault among men in this study (3.8%) is higher than the rate reported in the National Violence Against Women Survey (Tjaden & Thoennes, 1998; 0.8%), but lower than that reported by Sorenson et al. (1987; 7.2%) and Martin et al. (1998; 6.7%). The discrepancies between studies are most likely due to differences in the definitions used by the various researchers. The National Violence study asked only about rape or attempted rape, which would likely underestimate the rate of sexual assault. This study asked about rape and sexual assault and required the use of the threat or use of physical force. The presence of verbal pressure alone (defined as persuasion, bribe, or love withdrawal) was used to categorize 61.8% of the men in the ASA group in Sorensen et al.'s study. The ASA rate in Sorensen et al. would drop to 2.8% if the use of threats or physical force were required for classification of sexual assault.

Although an average of 14 years had passed since the last incident of ASA, sexually assaulted men and women reported significantly more distress on all 10 of the TSI scales than did their nonassaulted peers. The data are consistent with other research in this area and suggest that ASA is a trauma-inducing event for men and women, one that has long-term effects for many victims.

Most research on sex differences in symptom expression suggests that women are generally more willing to acknowledge psychological distress than men (e.g., Hoyenga & Hoyenga, 1979; Norris, 1992). Yet, in the present study, men with a history of ASA reported significantly higher levels of distress than female victims of ASA on eight of the 10 TSI scales and equivalent levels on the remaining two scales (Depression and Intrusive Experiences). This occurred despite general equivalence between the sexes regarding the characteristics of the ASA.

These data are consistent with previous data on men who present at a rape crisis center (Frazier, 1993) and medical center (Kimerling et al., 2002), as well as with a national survey of male adolescents in France (Darves-Boruoz et al., 1998). They suggest that sexual victimization may be especially trauma-producing for men. This may be because of the sex-role violation associated with sexual victimization in a society where men are expected to be strong, aggressive, and avoidant of any (even forced) sexual contact with other men (Briere, 1996). As a result, ASA may be particularly destabilizing to the man's sense of self and sexual identity (Meyers, 1989; Stukas-Davis, 1990). This hypothesis is supported by the pattern of findings on TSI scores: while assaulted men reported equivalent levels of depressed mood and posttraumatic intrusion as assaulted women, they reported greater difficulty in the self and sexual domains. Further, sexually victimized men appear to respond to assault-related distress by engaging in externalizing activities ("tension reduction behavior" in TSI terminology) and dysfunctional sexual behavior that direct attention away from painful internal states. Alternatively, however, it is possible that men who engage

in tension reduction activities and sexually dysfunctional behavior are especially likely to be sexually assaulted.

Studies of female rape victims suggest that childhood victimization, particularly sexual abuse, is a risk factor for adult sexual assault (e.g., Briere & Runtz, 1987; Koss & Dinero, 1989; Maker, Kemmelmeier, & Peterson, 2001; Tjaden & Thoennes, 1998). Consistent with these data, the current study found that women who had experienced ASA were over twice as likely to have a history of CSA as women with no exposure to ASA. This study extends these findings to men, where the phenomenon is even more dramatic: men who had experienced sexual assault were five times more likely to have a history of CSA than men with no ASA.

Multivariate analyses of APA and CSA on TSI scores, however, indicated that the higher rate of CSA among adult sexual assault victims did not explain the symptoms associated with ASA. Nevertheless, the multiple regression analysis conducted only on victims of ASA suggests that a history of CSA appears to add to the distress of victims of ASA. Other factors associated with increased distress in ASA victims were being male, being divorced, and experiencing ASA within a year of data collection.

Limitations of this study include the use of volunteer participants and the reliance on self-report retrospective data. Although the overall response rate was adequate for questionnaires completed by mail (65%), it is possible that those who volunteered for this study differed in significant ways from those who did not elect to return a questionnaire. And, as with all studies that rely on retrospective data, potential recall bias associated with the passage of time cannot be ruled out (Briere, 1992). Additionally, because the study of adult male sexual assault is a relatively new endeavor, and the base-rate for such assaults appears to be relatively low, the exact prevalence data for men reported here should be considered preliminary.

In summary, this research suggests that ASA produces significant psychological symptoms, even in nonclinically referred members of the general population. Further, on average, these effects appear to endure for years beyond the assault. Also identified in this study are the specific effects of sexual assault on men. Although ASA is less common in this group, when it occurs it appears to produce even higher levels of trauma-specific, self-related, and dysphoric symptoms than it does for women.

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