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Prevalence of Childhood Physical and Sexual Abuse in Veterans With Psychiatric Diagnoses

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Abstract

We examined the prevalence of childhood (18 years) physical and sexual abuse reported among patients admitted to the psychiatric inpatient service and the differential rates of this abuse associated with psychiatric diagnoses. This study consisted of a retrospective chart review of 603 patients admitted to a psychiatric ward during a period of 1 year at Atlanta Veterans Affairs Medical Center who had data on childhood physical and sexual abuse. The prevalence of reported childhood physical or sexual abuse in this inpatient clinical population was 19.4% (117/603). The prevalence of reported physical abuse was 22.6% (19/84) in the women and 12.0% (62/519) in the men ($p = 0.008$); the prevalence of sexual abuse was 33.3% (28/84) in the women and 7.7% (40/519) in the men ($p < 0.0001$). More patients with depressive disorders reported sexual abuse than did those without these disorders. More patients with posttraumatic stress disorder (PTSD) reported physical and sexual abuse than did those without these disorders. Stratifying by race, sex, and diagnoses, multivariate analyses showed that the women with PTSD had a greater likelihood to report physical abuse ($p = 0.03$) and sexual abuse histories ($p = 0.008$) than did the women without PTSD. The men with substance-induced mood disorder ($p = 0.01$) were more likely to report physical abuse compared with the men without substance-induced mood disorder. Screening for abuse in patients with depressive disorders and PTSD is warranted to tailor

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Send reprint requests to Maju Mathew Koola, MD, DPM, 6501 N Charles St, Baltimore, MD 21204. majujuju@yahoo.com. Erica Duncan designed the study in consultation with Kelly Skelton, Bekh Bradley, and Richard Amar. Erica Duncan, Maju Mathew Koola, Kelly Skelton, Bekh Bradley, and Richard Amar collected the data. Clifford Qualls performed the statistical analysis. Maju Mathew Koola, Erica Duncan, Deanna L. Kelly, and Clifford Qualls analyzed and interpreted the results. Maju Mathew Koola wrote the first draft of the manuscript. All authors reviewed, edited, contributed to, and approved the final manuscript.

DISCLOSURES

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individualized treatments for these patients. More research is needed to better understand the potential implications of childhood abuse on psychiatric diagnoses.

Keywords

Childhood physical and sexual abuse; veterans; adult psychiatric diagnoses; psychiatric inpatients

Early life stress (ELS) includes a broad spectrum of adverse experiences: physical, sexual, and emotional abuse; family instability (marital discord); parental loss; parental rejection (neglect); witnessing domestic violence; parental alcoholism; or living with those who have substance use disorders (SUDs), mental illness, or criminality (Dong et al., 2004; Leitenberg et al., 2004). Increasing evidence supports the hypothesis that different types of ELS may be associated with adult psychopathological consequences (Heim et al., 2000; Pani et al., 2000; Zlotnick et al., 2004).

ELS has been reported in 26% to 32% of individuals diagnosed with mental disorders in a nationally representative sample of 9282 adults (Green et al., 2010). Other retrospective research indicates that ELS is often followed in adulthood by a wide variety of psychopathologies and psychiatric diagnoses that include a range of depressive disorders (Maercker et al., 2004; O'Sullivan, 2004), acute or chronic stress (Heim et al., 2000; Pani et al., 2000), SUDs (Dong et al., 2004; Pani et al., 2000; Zlotnick et al., 2004), posttraumatic stress disorder (PTSD; Maercker et al., 2004), schizophrenia and psychotic disorders (Cutajar et al., 2010; Fisher et al., 2011; Galletly et al., 2011; Read et al., 2005), obesity (Heidbreder et al., 2000), attention deficit hyperactivity disorder (Heidbreder et al., 2000; Heim et al., 2000), fibromyalgia (Bell et al., 1998), somatoform disorders, dissociation disorders (Bell et al., 1998; Maaranen et al., 2004), conversion disorder (Maaranen et al., 2004), and suicide attempts (Dong et al., 2004).

Childhood physical and sexual abuse is prevalent, and the potential psychological and physical harm is great. Psychopathologies, such as the ones listed above, impact the individuals' physical and emotional health, general functioning, and health care service use (Druss et al., 2000; Greenberg et al., 1999; Wu et al., 2005). PTSD and other anxiety disorders are associated with loss of productivity and absenteeism at work (Greenberg et al., 1999). Depression was associated with a mean of 10 annual sick days, significantly more than many medical conditions (Druss et al., 2000).

The pathophysiological link between ELS and adverse adult sequelae is the subject of a growing body of recent research. There is increasing appreciation in the literature that early adverse experiences can leave a lasting signature on the genetic predispositions that affect emerging brain architecture and long-term health (Shonkoff and Garner, 2012). These authors argue that many of the adult diseases are developmental disorders that begin early in life and that disruptive impacts of toxic stress link early adversity to later impairments in learning, behavior, and both physical and mental well-being. Ongoing areas of research link early stress specifically to perturbations in function of the hypothalamic-adrenocorticoid-pituitary axis (Heidbreder et al., 2000; Heim et al., 2000), other neuroendocrine measures (Heidbreder et al., 2000; Heim et al., 2000, 1997; Macri and Laviola, 2004), alterations in

the immune cytokine interleukin 6 (Carpenter et al., 2010), and dopaminergic changes (Pani et al., 2000).

Little is known about the extent of childhood physical and sexual abuse in the clinical population in the Veterans Affairs (VA) system. This is an important clinical question because concomitant childhood physical and sexual abuse in veteran populations may contribute to poorer outcomes, treatment resistance, and greater severity of mental illness, which, in turn, may increase the need for VA health care services by these patients (Kendall-Tackett and Becker-Blease, 2004). Childhood physical and sexual abuse in this population may be associated with considerable economic burden not only for the patients affected but also for the VA health care system and other mental health care systems.

Because of the aforementioned link between ELS and adult sequelae and the potential impact an ELS history may be exerting on health care needs of adult psychiatric patients, this study was undertaken to ascertain the prevalence of reported childhood (< 18 years) physical and sexual abuse among psychiatric inpatients with a wide range of diagnoses in a VA Medical Center (VAMC). The working hypotheses were that the prevalence would be substantial in the patients as a whole but highest in inpatients with mood, anxiety, and SUDs.

METHODS

Participants and Study Design

The patients were all psychiatric inpatients at Atlanta VAMC during the period of August 1, 2004, to July 31, 2005. The study consisted of a retrospective chart review to ascertain the prevalence of childhood physical and sexual abuse among psychiatric inpatients and to compare the prevalence among psychiatric diagnoses.

Data Sets

The admission history and physical (H&P) note contains information about childhood (<18 years) physical and sexual abuse that was completed by the admitting psychiatry attending or resident. These data were read directly from the patients' charts using the electronic clinician interface and the information entered into investigator-created databases. When present, a note documenting the Addiction Severity Index (ASI) also contains information on childhood physical and sexual abuse that was included in the study databases.

Admissions data were extracted from the Veterans Integrated Service Network (VISN7) Corporate Database. Dates of admission and discharge, treating specialty for the admission, and discharge diagnoses were included, along with identifying information, to permit linkage to other tables of data. These data were extracted and imported into customized databases in FilemakerPro for Macintosh (version 8.0; Filemaker, Inc, Santa Clara, CA), in which the length of each admission was computed and readmissions for individual patients were compiled. Demographic information included race, sex, age, era of service (period in which the veteran served in the military), VA service-connected status (whether the patient receives disability payment from the VA), and other economic variables that categorize the patients' financial and employment status and marital status.

The Emory University Institutional Review Board approved this study and granted it exempt from obtaining informed consent documents from the patients. The Atlanta VA Research and Development Committee and the VISN7 Corporate Database Committee also approved this study.

Statistical Analysis

The demographic and admission data were computed as mean $\pm$ standard deviation for continuous variables or as number (percentage) of binary for categorical variables. Comparisons of the prevalence (percentage) of childhood physical and sexual abuse between those patients with a given diagnosis and those without that diagnosis (the complement) were done using chi-square tests. The patients with missing data on physical or sexual abuse ($n = 52$) were not included in the analyses. Univariate analyses of all demographic and diagnostic variables were performed. Next, multivariate analyses were performed that incorporated all univariate models with a p -value of 0.05 or less. The “best” multivariate models were determined by stepwise (variable selection) logistic regression and verified by backward selection logistic regression; here, the odds ratios (ORs) with their 95% confidence intervals (CIs) reported for each variable were adjusted for the other variables in the model (if any). The candidate variables considered and listed for the multivariate analyses were those that had a p -value of less than 0.05 in the univariate models. The statistical package used was SAS 9.2 (SAS Institute Inc, Cary, NC). A p -value of 0.05 or less was considered statistically significant.

RESULTS

During the period of study, there were a total of 857 inpatient psychiatric admissions of 655 unique patients and a final sample of 603 patients with abuse history data available. Overall, the population was typical of VA patients at Atlanta VAMC. The mean age was about 50 years, 56% were African-American, and 86% were men. The mean $\pm$ SD length of hospital stay for this population was 11.7 ± 11.77 days. In this VA-based study, there were 69 individuals (13%) with combat experience. The demographic variables for the sample of 603 individual patients are summarized in Table 1.

The prevalence of childhood physical or sexual abuse reported in this clinic population was 19.4% (117/603). There were 81 patients (13.4%) reporting childhood physical abuse and 68 patients (11.3%) reporting childhood sexual abuse. Thirty-two patients (5.3%) reported both childhood physical and sexual abuse.

A total of 22.6% of the women (19 of 84) reported physical abuse as opposed to 12.0% of the men (62 of 519; $\chi^2_1 = 7.1$; $p = 0.008$). Similarly, 33.3% of the women as opposed to 7.7% of the men reported sexual abuse ($\chi^2_1 = 47.5$; $p < 0.0001$). Among 243 patients with depressive disorders, 14.4% reported sexual abuse in contrast to 9.2% of 360 patients without depressive disorders ($\chi^2_1 = 4.0$; $p = 0.05$). Among 176 patients with PTSD, 17.6% reported physical abuse in contrast to 11.7% of 427 patients without PTSD ($\chi^2_1 = 3.7$, $p = 0.05$). Similarly, in 176 patients with PTSD, 15.9% reported sexual abuse in contrast to 9.4% of 427 patients without PTSD ($\chi^2_1 = 5.3$; $p = 0.02$). The prevalence of reported

physical and sexual abuse for the patients with each major diagnostic group is summarized in Table 2.

The results of the multivariate analyses using significant demographic (race) and diagnosis candidate variables stratified by sex are listed in Table 3. The prevalence of reported physical abuse was greater in the women with PTSD than in the women without PTSD (OR, 3.3; 95% CI, 1.2–9.7; $p = 0.03$). Similarly, the prevalence of reported sexual abuse was greater in the women with PTSD compared with the women without PTSD (OR, 3.8; CI, 1.4–10.3; $p = 0.008$). In the men, the pattern was different. The prevalence of reported physical abuse was greater in the men with substance-induced mood disorder compared with the men without substance-induced mood disorder (OR, 2.3; CI, 1.2–4.3; $p = 0.01$). In addition, in the men, African-American race was a predictor of lower rates of reported physical abuse than in those who were not African-American (OR, 0.4; CI, 0.2–0.7; $p = 0.002$). The prevalence of reported physical abuse in the men with or without opiate use disorder failed to reach significance in the multivariate model although it was significant in the univariate model.

DISCUSSION

In this retrospective study of the prevalence of reported childhood abuse in adult psychiatric inpatients, there were several predictors of reported abuse. The women were more likely to report abuse than were the men. African-American race was a predictor of lesser rates of reported physical and sexual abuse than in those not of this race. The patients with PTSD were more likely to report childhood physical and sexual abuse than were the patients without PTSD. The patients with depressive disorders were more likely to report sexual abuse than were the patients without depressive disorders. This latter finding in the sample as a whole may be partially driven by sex-specific findings, in that reported sexual abuse was higher at a trend level in the men with depression than without depression, whereas this pattern was not seen in the women. Although 64% of the entire sample used illicit drugs or alcohol, those with SUDs did not have significantly higher reported physical or sexual abuse than those without SUDs. Surprisingly, the patients with cocaine use disorder were less likely to report physical abuse than were the patients without cocaine use disorder. Sex-specific effects may have driven some findings in the group as a whole. Stratifying by race, sex, and diagnostic candidate variables, the multivariate analyses showed that the women with PTSD were more likely to report physical and sexual abuse compared with the women without PTSD. In the men, reported physical abuse was less likely in African-Americans than in those of other races. In those with substance-induced mood disorder, physical abuse in men was more likely to be seen. A greater percentage of the inpatients reporting a childhood physical or sexual abuse history had three or more admissions during the index year of the study than did those without a reported abuse history.

Two negative findings carry special significance for the VA health care system. The patients who served in the Vietnam era and those with direct combat experience did not have significantly increased rates of reported childhood abuse than those patients not in those categories. The Vietnam cohort is the largest group of VA patients, and patients with combat exposure comprise a large and important portion of the VA clinical population.

The results of the current study regarding the association of reported childhood abuse and diagnosis of mood and anxiety disorders are in accord with several previous studies. The National Comorbidity Survey was a nationally representative survey of the US population ($N = 5877$), in which data on childhood abuse histories and lifetime diagnoses were gathered (Molnar et al., 2001). In that study, the overall rate of reported childhood sexual abuse was 13.5% in women and 2.5% in men. These rates are considerably lower than our observed rates of 33.3% for women and 7.7% for men. In that study, the diagnoses associated with reported childhood sexual abuse were clustered in the anxiety and mood disorder spectrum, in accord with our findings, but also included several substance disorders. In the current study, in the multivariate model, substance-induced mood disorder was significantly associated with reported physical abuse in men.

Other studies have seen similar associations between reported childhood abuse and mood and anxiety disorders. Stein et al. (1996) found higher rates of childhood physical and sexual abuse histories in patients with anxiety disorders than in those without these diagnoses. However, in this study, the patients were limited to those with anxiety spectrum disorders, so data were not analyzed on other diagnoses. A large study of 1931 subjects (Hovens et al., 2010) found that reported childhood trauma was associated with diagnoses of anxiety and depression, but this study also restricted the diagnoses in their patient sample to anxiety and depression. In the current study, although there was a high prevalence of reported childhood sexual abuse in patients with depressive disorders and PTSD, there was not a significantly elevated prevalence in other anxiety disorders. This could be explained by the small sample size ($n = 45$) of anxiety disorders other than PTSD in the current sample.

Our finding of lower rates of physical abuse in African-American men is not consistent with higher rates of child maltreatment in African-American families reported in another study (Sedlak et al., 2012). However, the extant data on this issue is inconsistent, with much research suggesting that low income rather than race is associated with increased risk for child maltreatment (Drake et al., 2011).

Strengths and Limitations

The major strength of this study is the large sample size ($N = 603$). There are many published studies on the association of abuse with psychiatric diagnoses (Coverdale and Turbott, 2000; Mueser et al., 1998). However, there is little literature documenting the prevalence of childhood physical and sexual abuse compared across psychiatric diagnoses. To our knowledge, this is the first study to report the prevalence of reported childhood physical and sexual abuse in patients with psychiatric diagnoses in an inpatient VA health care setting.

This study has several limitations. First, this was a retrospective chart review study. The subjects may have underreported their abuse experiences (Williams, 1994). Because this was a retrospective study, we cannot be sure exactly how the admitting clinician asked the questions to gather information for the prompt in the template for the admission write-up. Hence, the possibility of reporting bias with clinicians asking these questions cannot be ruled out. Approximately 8% of 655 subjects were missing abuse information from the H&P notes in up to seven admissions and in the ASI notes. In the large epidemiological Adverse

Childhood Experiences study ($N = 658$), retrospective findings were found to be trustworthy and stable over time (Dube et al., 2004). Furthermore, prospective studies are also not ideal because a substantial number of cases may be missed and unreported abuse may be more severe. In a prospective study, 82% of 365 survivors of sexual abuse had never reported their abuse to law enforcement or state agencies. For all these reasons, prospective findings cannot be solely relied upon (Kendall-Tackett, 1991).

A second limitation is that childhood physical and sexual abuse history was gathered from the psychiatric history provided at admission and from the ASI. Abuse history was not documented using a validated research rating scale. However, there was convergent validity for childhood abuse documented in clinical case notes versus self-report on a questionnaire (Fisher et al., 2011). Another limitation is that specific information about the perpetrator of the abuse was not available, nor was there information on the severity and the frequency of the traumas. For this reason, the effects of cumulative trauma could not be evaluated. ELS is a broad term that comprises of physical, sexual, and emotional abuse; witnessing domestic violence; having an alcoholic parent; parental rejection, and others. In this study, we focused only on childhood physical and sexual abuse because data on emotional abuse were not available. In addition, we did not consider the effect of multiple diagnoses in our analyses. A final limitation is that we did not look at adult physical and sexual abuse because it would be difficult to separate its effects from the veterans' combat experience.

CONCLUSIONS AND FUTURE DIRECTIONS

In summary, there was an overall prevalence of reported childhood physical or sexual abuse of 18% among veterans admitted to a VA psychiatric ward. This is a clinically relevant finding from a relapse prevention and health care cost perspective. Psychiatric inpatients with depressive disorders and PTSD may be particularly likely to have histories of childhood physical and sexual abuse, and a special screening for abuse is warranted in patients with these diagnoses for personalized management, which is a National Institute of Mental Health mission. More research is needed on how to best treat psychiatric patients with histories of abuse to prevent symptom relapse and to further our understanding of the potential effects of childhood abuse on the clinical course of psychiatric illnesses.

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TABLE 1

Demographic and Clinical Data on 603 Subjects

Variables	Mean $\pm$ SD or <i>n</i> (%)
Age at admission, ^a yrs	49.2 $\pm$ 9.7
Race	
African-American	337 (55.9)
White	168 (27.9)
Other	98 (16.3)
Sex	
Male	519 (86.1)
Female	84 (13.9)
Marital status	
Divorced	214 (35.5)
Married	160 (26.5)
Never married	147 (24.4)
Separated	59 (9.8)
Widow/widower	22 (3.7)
Combat experience	69 (13.0)
VA service-connected disability ^b	318 (52.7)
VA service-connected percentage of disability ^c	59.5 $\pm$ 35.8
No. hospital admissions during the study period	1.3 $\pm$ 0.7
Days in hospital during the study period	11.7 $\pm$ 11.7

^a Age range: 22 to 86 years.

^b Percentage of subjects with a medical or psychiatric condition ruled by the VA to be connected with military service.

^c VA-designated percentage of disability of the subject.

TABLE 2

Prevalence of Childhood Physical and Sexual Abuse by Demographic and Diagnostic Categories (*N* = 603)

Demographic and Diagnostic Categories	Percentage by Category ^d	Physical Abuse in Category	Physical Abuse in Complement	<i>p</i>	Sexual Abuse in Category	Sexual Abuse in Complement	<i>p</i>
	<i>n</i> (%)				<i>n</i> (%)		
Demographic ^a							
Sex (female)	84 (13.9)	19 (22.6)	62 (12.0)	0.008	28 (33.3)	40 (7.7)	<0.0001
Age >50 yrs	264 (43.8)	35 (13.3)	46 (13.6)	0.91	29 (11.0)	39 (11.5)	0.84
Race (African-American)	337 (55.9)	33 (9.8)	48 (18.1)	0.003	30 (8.9)	38 (14.3)	0.04
Combat experience	69 (11.4)	11 (15.9)	70 (13.1)	0.51	6 (8.7)	62 (11.6)	0.47
Vietnam veteran	72 (11.9)	11 (15.3)	70 (13.2)	0.62	5 (6.9)	63 (11.9)	0.22
Diagnoses ^{b,c}							
Bipolar disorder	87 (14.4)	12 (13.8)	69 (13.4)	0.92	10 (11.5)	58 (11.2)	0.94
Depressive disorders	243 (40.3)	37 (15.2)	44 (12.2)	0.29	35 (14.4)	33 (9.2)	0.05
Psychosis NOS	19 (3.2)	4 (21.1)	77 (13.2)	0.32	2 (10.5)	66 (11.3)	0.92
PTSD	176 (29.2)	31 (17.6)	50 (11.7)	0.05	28 (15.9)	40 (9.4)	0.02
Other anxiety disorders	45 (7.5)	9 (20.0)	72 (12.9)	0.18	8 (17.8)	60 (10.8)	0.15
Schizophrenia	128 (21.2)	12 (9.4)	69 (14.5)	0.13	9 (7.0)	59 (12.4)	0.09
Substance use disorders	382 (63.4)	50 (13.1)	31 (14.0)	0.74	43 (11.3)	25 (11.3)	0.98
Alcohol	288 (47.8)	39 (13.5)	42 (13.3)	0.94	33 (11.5)	35 (11.1)	0.89
Cocaine	222 (36.8)	22 (9.9)	59 (15.5)	0.05	18 (8.1)	50 (13.1)	0.06
Cannabis	90 (14.9)	11 (12.2)	70 (13.7)	0.72	7 (7.8)	61 (11.9)	0.26
Opiates	25 (4.2)	6 (24.0)	75 (13.0)	0.11	1 (4.0)	67 (11.6)	0.24
Substance-induced mood disorder	110 (18.2)	20 (18.2)	61 (12.4)	0.11	12 (10.9)	56 (11.4)	0.89
Substance-induced psychotic disorder	29 (4.8)	6 (20.7)	75 (13.1)	0.24	3 (10.3)	65 (11.3)	0.87
All patients	603 (100)	81 (13.4)	NA ^e		68 (11.3)	NA	

NA indicates not applicable; NOS, not otherwise specified.

^aThe prevalences (percentage) of abuse in a clinic setting are compared between those patients in the named category and those not in that category (the complement).^bThe prevalences (percentage) of abuse in a clinic setting are compared between those patients having the named diagnosis and those not having that diagnosis (the complement).^cCategories with frequencies 15 or lower (2.5% of the total 603) were excluded from the analyses: adjustment disorder (*n* = 14), amphetamine (*n* = 14), and benzodiazepine (*n* = 10).^dPercentages do not sum to 100% because the patients had more than one diagnosis.^eNot applicable because there is no complement to all patients.

TABLE 3

Multivariate Analysis of the Prevalence of Childhood Physical and Sexual Abuse by Sex

Abuse and Diagnoses	Best Multivariate Model	
	OR (95% CI)	<i>p</i>
Physical abuse in women		
PTSD	3.3 (1.2–9.7)	0.03
Sexual abuse in women		
PTSD	3.8 (1.4–10.3)	0.008
Physical abuse in men		
Race (black)	0.4 (0.2–0.7)	0.002
Substance-induced mood disorder	2.3 (1.2–4.3)	0.01
Sexual abuse in men		
Depressive disorders	1.8 (0.9–3.4)	0.07

Best multivariate model was determined by variable selection logistic regression. The *p*-values test whether the ORs are different than 1.0; ORs higher than 1 indicate that the prevalence of abuse is higher in the patients with the given diagnosis.