# Incidence of Male Childhood Sexual Abuse and Psychological Sequelae in Disaster Workers Exposed to a Terrorist Attack

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Abstract: This study documents the prevalence of male childhood sexual abuse (CSA) and psychological sequelae in a sample of disaster workers deployed to the World Trade Center (WTC) site following the September 11, 2001 terrorist attack. There are limited data on male CSA and its psychological impact, especially on a large non-treatment seeking sample. As part of a mandatory medical screening program, workers were assessed with well-validated and widely used clinician interview and self-report measures following their involvement in the restoration of services to Ground Zero and surrounding areas of lower Manhattan. Frequency of CSA measured by the Traumatic Events Interview (TEI) was 4.3% (n = 92). Clinician interview and self-report data were analyzed using t-tests, revealing statistically significant relationships (but not clinically meaningful scores) between CSA and scores on the CAPS, PCL, BDI, STAXI, and SDS. Further analyses revealed that individuals endorsing CSA were three-times more likely to score high (vs. low) on the BDI and CAPS. Since disaster workers traditionally summon images of strength and mastery, professionals may overlook CSA and symptoms of depression and PTSD in this population. [International Journal of Emergency Mental Health, 2006, 8(4), pp. 267-274].

Key words: male child sexual abuse, disaster workers, terrorist attack, PTSD, emergency mental health

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Childhood sexual abuse (CSA) can result in both shortand long-term psychological consequences. People who endorse histories of CSA may be more vulnerable to developing psychiatric disturbances in their teenage and adult years following exposure to trauma. While there is an extensive body of research on CSA in females, fewer studies have investigated the psychological sequelae of CSA in male populations. A study by Briere, Evans, Runtz, and Wall (1988) revealed that males endured less severe and less chronic sexual abuse than females. Nevertheless, no gender differences were found in the extent of psychological symptoms experienced or suicide attempts made, suggesting that males are just as susceptible in the face of CSA.

Analysis of data collected from a national telephone survey of adult males revealed that 16% reported a history of childhood sexual abuse (Finkelhor, Hotaling, Lewis, & Smith, 1990). In a more recent survey of adults in the general population, Briere and Elliott (2003) found that 14.2% of men reported CSA. According to the National Comorbidity Survey, 2.5% of male respondents were sexually abused as children (Molnar, Berkman, & Buka, 2001; Molnar, Buka, & Kessler, 2001), one of the lowest prevalence rates reported in the literature. In a study involving college-aged males, 9% experienced unwanted sexual contact (Collings, 1995). In a national sample of American youth aged 10-16, Boney-McCoy and Finkelhor (1995) reported a 3.6% rate of CSA within one year of the survey among boys. Swett, Surrey, and Cohen (1990) found that 13% of a sample of male adult psychiatric outpatients endorsed histories of CSA. Finally, Fondacaro and colleagues (1999) assessed CSA prevalence in jail and prison inmates, and reported a rate of 40.4%. Compared to other studies on male CSA involving community samples, this rate is exceptionally high given that an inmate population may consist of confounds such as the presence of psychiatric and substance use disorders and other childhood adversities, signifying that the composition of the sample can affect reported rates of childhood sexual abuse (Holmes & Slap, 1998).

Nevertheless, the prevalence rates of CSA in community populations are assumed to underestimate its incidence due to multiple factors. Besides the nature of the sample, design and methodological complications, such as how sexual abuse is defined and mode of data collection, how survivors perceive their abuse (Holmes & Slap, 1998) and repression of memories can influence reported rates. To illustrate, in Collings' (1995) study of male college students, he distinguished between contact and noncontact sexual abuse. As noted, 9% of study participants reported contact sexual abuse (e.g., genital contact), whereas 20% reported noncontact sexual abuse (e.g., exhibitionism). Therefore, if researchers define sexual abuse in terms of contact only, frequency of CSA may appear to be lower than in actuality.

Another important factor interfering with accurate reporting is a survivor's appraisal of his abuse. A perceived stigma envelops childhood sexual abuse (Coffey, Leitenberg, Henning, Turner, & Bennett, 1996). Often, a child assimilates negative connotations, such as shame and guilt, surround-

ing his early abuse experiences into his self-image (Finkelhor & Browne, 1985; Lisak, 1994). Accordingly, he may view himself as either tainted or naughty, as if the abuse were his fault, thereby preventing him from disclosing the abuse. Male survivors may also be disinclined to endorse histories of CSA because feelings of fear, helplessness, and humiliation evoked by sexual abuse breach male gender norms (Lisak, 1994). For instance, it is not particularly masculine for men to express their emotions (Lisak, 1994); therefore, in order to adhere to social norms, they may refrain from reporting their abuse.

Regardless of how the abuse is perceived by the survivor, CSA is a predictor for the development of psychiatric symptoms and other disturbances in psychological well being. Multiple studies demonstrate significant correlations between male CSA and symptoms of depression (Briere et al., 1988; Briere & Elliot, 2003; Collings, 1995; Fondacaro et al., 1999; Molnar, Buka, & Kessler, 2001; Roesler & McKenzie, 1994; Styron & Janoff-Bulman, 1997; Swett et al., 1990), anxiety (Briere et al., 1988; Briere & Elliot, 2003; Collings, 1995; Fondacaro et al., 1999; Molnar, Buka, & Kessler, 2001; Swett et al., 1990), dissociation (Briere et al., 1988; Briere & Elliot, 2003; Roesler & McKenzie, 1994), substance abuse (Fondacaro et al., 1999; Molnar, Buka, & Kessler, 2001; Simpson & Miller, 2002), low self-esteem (Briere & Elliot, 2003; Roesler & McKenzie, 1994), and sexual dysfunction (Briere & Elliot, 2003; Roesler & McKenzie, 1994). Anger is also a common short- and long-term effect of CSA (Briere et al., 1988; Dhaliwal, Gauzas, Antonowicz, & Ross, 1996; Romano & DeLuca, 2001). Furthermore, men who were sexually abused as children tend to have less secure interpersonal relationships, and to engage in more destructive behaviors during conflict situations than nonabused males (Styron & Janoff-Bulman, 1997). Men endorsing histories of CSA are also more likely to attempt suicide than those not abused (Dhaliwal et al., 1996; Molnar, Berkman, & Buka, 2001).

Moreover, symptoms of Posttraumatic Stress Disorder (PTSD) are prevalent in males who have been sexually abused as children (Boney-McCoy & Finkelhor, 1995; Briere & Elliot, 2003; Fondacaro et al., 1999; Roesler & McKenzie, 1994; Rodriguez, Ryan, Rowan, & Foy, 1996; Rowan, Foy, Rodriguez, & Ryan, 1993). Characterized by symptoms of arousal, avoidance, and intrusion (DSM-IV T-R, 2000), Rowan, Foy, Rodriguez, and Ryan (1993) found that 69% of help-seeking, adult survivors of CSA met full DSM-III-R diagnostic criteria for PTSD, while 19% met partial criteria for partial

PTSD. These investigators (Rodriguez et al., 1996) later reported that 72% of a similar sample met diagnostic criteria for current PTSD, with another 14% meeting criteria for partial PTSD. Although these data cannot be generalized to a nonclinical sample, given that symptoms may be more debilitating in those seeking help for their condition, PTSD may be considered a pervasive problem in survivors of CSA.

Since a history of childhood sexual abuse in males is a predictor of psychological symptoms later in life, survivors' risk of developing a psychiatric disorder may be enhanced when experiencing additional trauma. When sexually abused males encounter future stressors, they may be more prone to psychological distress than their nonabused counterparts in the same stressful situation. As exemplified in the research conducted in military populations, servicemen with combatrelated PTSD have greater rates of CSA than those without PTSD (Bremner, Southwick, Johnson, Yehuda, & Charney, 1993). Consequently, trauma exposure can increase PTSD vulnerability in men with histories of CSA (Lapp et al., 2005).

Disaster work embodies stress. Thus, when workers are faced with natural and man-made disasters, including acts of terrorism, those with histories of CSA may be at high risk for developing PTSD. However, to date, there is no mention of CSA in the literature on disaster workers. Therefore, we found ourselves in a unique position to report on rates of CSA in a large non-treatment-seeking sample after screening disaster workers for psychological sequelae related to the September 11,2001 WTC terrorist attack. We also assessed the relationship between a history of CSA in this population and increased vulnerability to WTC-related PTSD, self-reported depressive symptoms, anger, and functional disability. This led to further analysis of participants who endorsed CSA comparing low and high scorers on measures of PTSD and depression.

#### **METHOD**

#### **Participants**

Participants were 2,122 male utility workers deployed to the World Trade Center site in the aftermath of the September 11, 2001 terrorist attack. The mean age of the participants was 45 years; 66.8% were Caucasian, 17.3% were Black, 12.6% were Hispanic, 1.2% were Asian, and 2.2% were of other ethnicities; 48.6% were high school graduates, 35.9% reported some college, and 10.7% were college graduates; 73.9% were

married or cohabitating, 16.5% were single, and 8.8% were separated or divorced.

#### **Measures**

Clinician-Administered PTSD Scale

The Clinician-Administered PTSD Scale (CAPS-Blake et al., 1990, 1995) is a structured interview that assesses the frequency and intensity of each PTSD symptom. For the purposes of this study the CAPS, used as a current measure of PTSD, was keyed to "your experience at the WTC." The psychometric properties of the CAPS are established, and it is a widely accepted criterion measure of PTSD (Weathers, Keane, & Davidson, 2001).

# PTSD Checklist

The PTSD Checklist (PCL; Weathers, Litz, Herman, Huska, & Keane, 1993), keyed to "your experience at the WTC," is a Diagnostic and Statistical Manual of Mental Disorders (DSM)- correspondent, 17-item self-report measure of PTSD that provides a continuous measure of PTSD symptom severity. The PCL is psychometrically sound (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996) and has been used in nearly 200 studies across a variety of trauma populations.

#### Beck Depression Inventory-II

The Beck Depression Inventory – Second Edition (BDI-II; Beck, Steer, & Brown, 1996) is a 21-item version of the original BDI (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), one of the most widely used self-report measures of depression. The psychometric properties of the original BDI are well established, and the BDI-II also appears to be psychometrically strong (Beck, Steer, Ball, & Ranieri, 1996).

# State-Trait Anger Expression Inventory

The State-Trait Anger Expression Inventory-2 (STAXI-2, a revised 57-item version of the STAXI; Spielberger, 1988), provides concise measures of the experience, expression, and control of anger. The Psychometric properties of the STAXI-2 are well established (Speilberger, 1999).

#### Sheehan Disability Scale

The Sheehan Disability Scale (SDS; Sheehan, 1983) is a

10-point visual analogue scale that assesses disability across three domains: work, social life, and family life. The three items may be summed into a single dimensional measure of global functional impairment that ranges from 0 (unimpaired) to 30 (highly impaired). This scale has been widely used in psychopharmacology randomized controlled trials and has been demonstrated to show adequate levels of reliability and validity in a psychiatric population (Leon, Shear, Portera, & Klerman, 1992).

### Traumatic Events Interview

The prevalence rate of childhood sexual abuse in disaster workers reported in this study was based on participants' responses on the Traumatic Events Interview (TEI), a 13-item measure developed by Foa and Rothbaum (1985) to document trauma history, which is used in Dr. Foa's treatment outcome studies. During the mental health screenings, this measure was utilized to assess prior trauma as a risk factor for current psychiatric symptoms. The interview inquires whether or not the participant has ever witnessed or experienced any of thirteen traumatic events, including natural disaster; serious accident or injury; sudden, life-threatening illness; assault with a weapon; childhood physical abuse; childhood sexual abuse; and unwanted sexual contact. For each event endorsed, the participant is asked to report the following: 1) frequency, 2) age at the time of the worst incident, and 3) feelings of terror, horror, or helplessness during the worst incident. Interrater reliability is acceptable (kappa = .83).

## Procedure

As part of a mandatory medical screening program, disaster workers were assessed with clinician interview and self-report measures following their involvement in the restoration of services to Ground Zero and surrounding areas of lower Manhattan. Interviews were conducted by post-doctoral candidates and licensed psychologists in conjunction with the employer's occupational health department. The primary purpose of the screenings was to identify employees in need of psychological treatment. Employees were informed that the interviews were confidential, and that recorded material would not be shared with their employer. Prior to conducting the screenings, we took special care to establish a strict policy of confidentiality with the employer, working from the assumption that these employees would not be able to be honest with us about their symptoms if they believed their jobs were at stake. If psychological symptoms were identified, it was our responsibility to refer the employees for appropriate treatment. Furthermore, if they experienced distress as a result of the interview, the interviewer would follow-up with the employee either in person or by telephone. Our Institutional Review Board approved use of the screening records for research purposes.

It is significant for this study to note that the purpose of the screenings was not to collect data on CSA. Instead, our primary goal was to identify people who might be in need of treatment for psychological sequelae related to their work at Ground Zero. However, while conducting these screenings the clinicians began noticing that during the TEI some men were spontaneously reporting CSA, due to unbidden memories that were haunting them since 9/11. Consequently, we began asking them about unwanted sexual contact as a child. Initially, we did not inquire about CSA because we did not want to jeopardize our relationship and budding reputation with these workers. We had already encountered the obstacles created by the stigma against mental health issues in this population, and were proceeding with caution. It was only after we had gathered this data that we realized the importance of formalizing it.

#### RESULTS

# **Data Analysis**

We initially obtained frequency data for CSA in the sample. We then used t-tests to examine if there were significant differences between disaster workers +/-CSA on the CAPS, PCL, BDI, STAXI and SDS. We more specifically examined the contribution of CSA to clinically significant symptoms of depression and posttraumatic stress disorder. We classified participants according to cut-off scores for caseness on the BDI, PCL, and CAPS as follows: BDI < 28, BDI ≥ 28, PCL < 45, PCL ≥ 45, CAPS < 40, and CAPS ≥ 40. We used cut-of scores for severe depression as suggested in the BDI-II manual. For the PCL and CAPS we used cut-off scores statistically derived specifically for this population of utility workers. We then compared the prevalence of CSA in the high and low scoring groups.

The prevalence of childhood sexual abuse within this disaster worker sample was 4.3% (n = 92). Chi-square analysis between demographics and sexual abuse showed no significant results. There were no significant differences in demographics (gender, race, education, and marital status) and +/-CSA (all p's > 0.05).

Mean scores on clinical instruments for participants who endorsed histories of CSA and those who did not are indicted in Table 1. Since the Levene's tests were significant for each measure, tests for unequal variance are reported. Participants with CSA showed significantly higher scores on the CAPS t(92.643) = -3.007, p < .003, PCL t(97.584 = 3.047, p < .003, BDI t(95.807) = -3.108, p < .002, STAXI t(97.043) = 1.844, p < .068, and SDS t(95.053) = 3.419, p < .001. Neither group (+/- CSA) had scores that were clinically meaningful. Therefore, we examined the prevalence of CSA in groups classified according to clinically significant scores on the BDI, PCL, and CAPS. These numbers are reported in Table 2.

Chi-square analysis comparing the prevalence of CSA in groups classified according to BDI-II < 28 and BDI-II > 28 showed a significantly greater prevalence of CSA in the higher scoring group:  $\chi 2 = 4.251$ , p < .05. Chi-square analysis comparing the prevalence of CSA in groups classified according to PCL < 45 and PCL > 45 was not significant. Chi-square analysis comparing the prevalence of CSA in groups classified according to CAPS < 40 and CAPS > 40 showed a significantly greater prevalence of CSA in the higher scoring group:  $\chi 2 = 12.065$ , p < .05. These results indicate that individuals with histories of CSA are more likely to endorse higher, rather than lower scores on the BDI and CAPS.

Table 1.

Means and standard deviations for scores on CAPS, PCL, BDI, STAXI, and SDS

Measure	Endorsed History of CSA N=92	
	NO M (SD)	YES M (SD)
CAPS ***	9.78 (14.63)	15.49 (17.53)
PCL ***	24.07 ( 9.98)	27.74 (11.34)
BDI **	3.68 ( 6.05)	6.29 ( 7.97)
STAXI ****	16.20 ( 4.17)	17.17 ( 4.96)
SDS *	2.40 ( 4.96)	4.72 ( 6.40)

<sup>\*</sup>p < .001, \*\*p < .002, \*\*\*p < .003, \*\*\*\*p < .068

Table 2.

Prevalence of CSA in High/ Low Scoring Groups for BDI, PCL and CAPS

GROUPS	CSA "Yes" N (%)
<b>BDI</b> < 28	89 ( 4.2)
≥ 28	3 (13.0)
<b>PCL</b> < 45	84 ( 4.3)
≥ 45	8 ( 6.3)
<b>CAPS</b> < 40	*76 ( 4.0)
≥ 40	*12 (11.0)

<sup>\*</sup> Discrepancy in total number of respondents due to missing data.

#### DISCUSSION

We did not intend to study the incidence of CSA in disaster workers. Rather, this paper is based on analysis of data gathered primarily for other purposes. It is in no way meant to recommend a way to collect data on CSA. Simply, we are obliged to report data that we believe is a meaningful contribution to the literature on both disaster workers and male CSA in general.

When establishing the screening program, we did not initially inquire about CSA out of concern of being too intrusive in the context of an occupational health-screening program. Since disaster workers traditionally summon images of strength and mastery, a stigma against mental health issues is often encountered in this population. In order to foster a relationship between clinician and disaster worker, we refrained from jeopardizing the primary goal of the program, to identify those in need of treatment for WTC-related psychological symptoms, by alienating workers through inquiry into sexual abuse history. However, during the screenings these men cautiously broached their concerns surrounding intrusive memories of early abuse experiences. It was then evident that CSA posed a risk factor for psychopathology following adult-onset trauma, such as working at the WTC site.

The reported incidence of childhood sexual abuse among the disaster worker participants is on the lower end of previously reported prevalence rates in general, psychiatric, and incarcerated samples, suggesting that CSA is not common in disaster worker populations. Nevertheless, it is possible that the CSA prevalence rate of 4.3% presented in this study is an underestimate. Disaster workers are deployed to some of the most horrific scenes, and are generally perceived as strong, heroic, and steadfast. As a primarily masculine culture, there is a sense of brotherhood and camaraderie amongst peers. Disaster workers have an unwavering reputation to live up to; thus signs of weakness are not tolerated. Consequently, it is not uncommon for disaster workers to resist disclosing emotionally charged information in a mental health setting, such as reporting histories of childhood sexual abuse. As per Lisak's (1994) findings, disaster workers who endorse experiences of CSA concede vulnerability, which is likely to raise issues concerning their masculinity. Hence, they are less inclined to volunteer information on their sexual trauma histories, accounting for the low prevalence rate in this population.

In accordance with general and university student population studies, childhood sexual abuse may increase vulnerability for developing psychopathology in disaster workers. Our results demonstrate that reported histories of CSA were associated with higher scores on the CAPS, PCL, BDI, STAXI, and SDS.

Although the mean scores on our initial analysis remained below clinically meaningful levels, further analysis indicates that a history of CSA is associated with more severe symptoms of depression and PTSD. In fact, nearly three times as many of participants endorsing a history of CSA scored above 28 on the BDI-II as compared to those who scored below. Likewise, nearly three times as many participants endorsing histories of CSA scored above 40 on the CAPS as compared to those who scored below. This indicates that disaster workers with a history of CSA are significantly more likely to endorse more severe versus less severe symptoms of depression and PTSD. It is unclear why these same differences did not show on the PCL. This may be because the CAPS is known to be more sensitive to diagnostic status (Forbes, Creamer & Biddle, 2000).

Further implications of our findings are a complicated issue. Most important, is for clinicians and employers to be aware that CSA does exist in this population and that these men may be at risk for psychological sequelae following further exposure to traumatic events. Due to the stigma of CSA, it is essential that any concern of being banned from disaster work solely on the basis of such a history does not further victimize these men. At this point in time, when the identification and treatment of the long-term effects of male childhood sexual abuse is a relatively new field, the most relevant intervention would be to provide routine psychoeducation to both disaster workers and those clinicians who come in contact with them, including information regarding the potential psychological sequelae of CSA and how these symptoms can be exacerbated by adult-onset trauma, a likelihood in the work lives of this population. As follows, workers could be more easily identified, both by themselves and clinicians, should they begin to experience symptoms following subsequent adult traumas.

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