Published in final edited form as:

Addict Behav. 2005 May ; 30(4): 847–852.

A gender specific psychometric analysis of the early trauma inventory short form in cocaine dependent adults

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Abstract

This study evaluated the gender specific psychometric properties of the Early Trauma Inventory-Short Form (ETI-SF) in a clinical sample of cocaine dependent men ($N=58$) and women ($N=34$). Participants were administered the ETI-SF, the Childhood Trauma Questionnaire Short Form (CTQ-SF), and the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I). Tests of internal consistency, convergent validity, and predictive validity were conducted separately by gender. Findings indicated that the ETI-SF demonstrated good internal consistency; Cronbach's alpha ranged from 0.73 to 0.80 for men and from 0.70 to 0.77 for women. The measure also demonstrated good convergence with the CTQ-SF in both sexes, indicating that reports of child maltreatment are consistent across interview and self-report measures. Further, predictive validity was demonstrated by the ability of various ETI-SF scales to predict the co-occurrence of psychiatric disorders commonly associated with early trauma. These included lifetime diagnosis of PTSD in men and women, the lifetime diagnosis of major depressive disorder in men, and the lifetime diagnoses of alcohol use disorders in women. The findings support the utility of the ETI-SF as a clinical research tool to obtain data on specific types of early trauma in drug abusing samples.

Keywords

Psychometrics; Childhood trauma; Gender; Cocaine dependence

Over the years, the literature has seen the accumulation of an impressive body of knowledge suggesting an association between the experience of childhood abuse and the development of substance use problems (for a review, see Simpson & Miller, 2002). However, most investigations of the long-term effects of childhood trauma have limited their analyses to the effects of sexual abuse, and to a lesser extent physical abuse, while excluding investigation of the effects of other forms of maltreatment such as emotional abuse and neglect (Briere, 1992; Briere & Runtz, 1990; Gold, 2000). It has been suggested that a more valid approach would be to assess the extent of all forms of maltreatment experienced by individuals and examine their unique and overlapping associations with various psychological symptoms (Briere & Runtz, 1990).

In response to the need for a structured comprehensive interview of early trauma, Bremner, Vermetten, and Mazure (2000) developed the 56-item Early Trauma Inventory (ETI) and found it to be psychometrically sound in a sample of 137 men and women with and without psychiatric diagnoses. The Early Trauma Inventory Short Form (ETI-SF) is adapted from the ETI, and was developed for use in settings where completion of a lengthy battery of assessments would be difficult. The ETI-SF is a 19-item clinician-administered structured interview that assesses

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reports of childhood physical abuse, sexual abuse, emotional abuse, and early major adverse life events such as parental loss or serious illness. The ETI, in each of its forms, provides a structure to systematically assess reports of specific forms of maltreatment in childhood. Other advantages of these interviews include the capacity to assess the age of onset, duration, and severity of each trauma, as well as the relationship of the perpetrator to the victim, which are abuse characteristics that have been associated with psychopathology in sexual abuse survivors (see Johnson, Pike, & Chard, 2001; Ruggiero, McLeer, & Dixon, 2000). Further, the ETI and ETI-SF interview format allows clinicians to establish rapport with interviewees and obtain direct information that allows for a more objective assessment of trauma on daily functioning.

Our study examined the psychometric properties of the ETI-SF in a clinical sample of cocaine dependent adults. The interview was validated against the short form of the Childhood Trauma Questionnaire (CTQ-SF), a self-report early trauma screening measure that has been validated in a large cohort of substance abusing individuals (Bernstein et al., 2003). The psychometrics of the instrument was also analyzed separately by gender. Motivation for stratification by gender follows from literature which suggests a stronger relationship between childhood abuse and substance use problems in women as compared to men (Simpson & Miller, 2002), a finding which may be associated with sex differences in the retrospective reporting of childhood trauma.

1. Participants and method

Participants were treatment seeking men ($N=58$) and women ($N=34$) who met current DSM-IV criteria for cocaine dependence. Demographics and sample characteristics are displayed in Table 1. All participants were admitted to an inpatient treatment research facility where the SCID-I (First, Spitzer, Gibbon, & Williams, 1995), the CTQ-SF (Bernstein et al., 2003), and the ETI-SF were administered as part of a large assessment battery.

2. Results

2.1. Reliability

Internal consistency of the ETI-SF was determined by calculating Cronbach's coefficient alpha (Cronbach, 1951) separately for men and women. For men, Cronbach's alpha for the ETI-SF was 0.80, with subscale reliability estimates at 0.77, 0.73, 0.77, and 0.76 for the physical abuse, emotional abuse, sexual abuse, and major adverse life events scales, respectively. For women, Cronbach's alpha for the ETI-SF was 0.77, with subscale reliability estimates at 0.70, 0.73, 0.75, and 0.76 for the physical abuse, emotional abuse, sexual abuse, and major adverse life events scales, respectively.

2.2. Convergent validity

Evidence for convergent validity was assessed by examining the association between the corresponding ETI-SF and CTQ-SF severity scales. Physical abuse (men: $r=0.56$, $p<0.0001$; women: $r=0.82$, $p<0.0001$), sexual abuse (men: $r=0.66$, $p<0.0001$; women: $r=0.75$, $p<0.0001$), emotional abuse (men: $r=0.56$, $p<0.0001$; women: $r=0.61$, $p=0.0001$) and summary scores (men: $r=0.57$, $p<0.0001$; women: $r=0.69$, $p<0.0001$) of the two measures were significantly correlated. Further evidence for convergent validity was found by correlating the age of onset and duration of each trauma as assessed by the ETI-SF with their corresponding CTQ-SF severity scale scores. In men, the ETI-SF onset and duration of physical abuse were significantly correlated with the CTQ-SF physical abuse severity subscale ($r=0.40$, $p=0.003$ and $r=0.31$, $p=0.025$, respectively). The ETI-SF duration of sexual abuse correlated with the CTQ-SF sexual abuse severity subscale ($r=0.53$, $p=0.049$). Further, the ETI-SF duration of emotional abuse correlated with the CTQ-SF emotional abuse severity scale ($r=0.41$, $p=0.003$).

In women, the ETI-SF duration of physical abuse correlated with the CTQ-SF physical abuse severity scale ($r=0.58$, $p=0.0007$). The ETI-SF onset of sexual abuse was correlated with the CTQ-SF sexual abuse severity scale ($r=0.60$, $p=0.0063$). However, the ETI-SF onset and duration of emotional abuse did not correlate with the CTQ-SF emotional abuse severity scale ($r=0.02$, $p=0.92$ and $r=0.28$, $p=0.15$, respectively).

2.3. Predictive validity

To assess the predictive validity of the measure, the ETI-SF summary scale score and subscale scores were each separately regressed upon the prevalence of lifetime diagnoses of PTSD, MDD, and alcohol use disorders for men and women. The ETI-SF summary scale score significantly predicted the diagnosis of lifetime PTSD in men (Chi-squared=5.35, $p=0.02$; odds ratio=1.087) and in women (Chi-squared=4.53, $p=0.033$; odds ratio=1.11). Moreover, when examining individual ETI-SF subscales separately, sexual abuse was the only significant predictor of the lifetime diagnosis of PTSD in men (Chi-squared=6.39, $p=0.01$; odds ratio=1.38), and physical abuse was the only significant predictor of PTSD in women (Chi-squared=4.35, $p=0.037$; odds ratio=1.38). The ETI-SF summary scale score significantly predicted the diagnosis of MDD, but only in men (Chi-squared=7.59, $p=0.006$; odds ratio=1.14). When examining individual ETI-SF subscales separately, major adverse life events (Chi-squared=5.93, $p=0.014$; odds ratio=1.24), physical abuse (Chi-squared=5.62, $p=0.018$; odds ratio=1.35), and emotional abuse (Chi-squared=6.62, $p=0.01$; odds ratio=1.30) were all significant predictors of MDD, but again only in men. On the other hand, the ETI-SF summary scale score predicted lifetime diagnosis of alcohol use disorders only in women (Chi-squared=4.25, $p=0.039$; odds ratio=1.13), with no one subscale showing a significant association.

3. Discussion

The findings indicate that the ETI-SF is a reliable and valid instrument that can provide a comprehensive assessment of childhood trauma when used with cocaine dependent men and women. The ETI-SF was found to have good internal consistency and good convergent validity in this sample. Interviewer ratings of trauma severity using the ETI-SF converged well with self reports of trauma severity on the CTQ-SF, indicating that clinician ratings of childhood trauma are consistent with cocaine addicts' self-reports of childhood trauma. Additional evidence of convergent validity was found in the significant correlations between the age of onset and duration of abuse as measured by the ETI-SF and CTQ-SF severity scores.

The ETI-SF also significantly predicted the co-occurrence of psychiatric disorders often associated with childhood maltreatment. The finding that severity of early trauma predicted PTSD in both sexes is consistent with previous research demonstrating an association between child abuse and PTSD (e.g., Rodriguez, Ryan, Rowan, & Foy, 1996; Widom, 1999). Interestingly, cocaine dependent men and women differed in the forms of child abuse that predict PTSD. Sexual abuse was the only form of maltreatment associated with PTSD in men, while in women, physical abuse predicted PTSD. Nevertheless, the ETI-SF proved to have predictive validity when examining PTSD as an outcome in both sexes. The finding that early major adverse life events, physical abuse, and emotional abuse were all predictive of MDD in men but not in women suggests that cocaine dependent men and women differ in the mechanisms by which they develop MDD. It appears that the development of MDD may be more closely linked to childhood trauma in cocaine dependent men, and that some other pathway, possibly in combination with childhood trauma, may be important for the disorder's development in women. The finding that the ETI-SF summary score predicted the lifetime diagnosis of alcohol use disorders in women but not in men is consistent with previous findings indicating a stronger association between childhood trauma and substance use problems in

women (Simpson & Miller, 2002). Women, more so than men, may find alcohol consumption and later cocaine use to be a useful tool for managing distress and coping with the aftereffects of abuse (Sinha & Rounsaville, 2002). Men, on the other hand, may have other factors (e.g., social pressure) which are more closely associated with the development of alcohol use disorders.

In summary, the findings indicate that the ETI-SF is a reliable and valid instrument for the measurement of various forms of child maltreatment in cocaine dependent men and women. The need for an assessment of childhood trauma specifically validated for this population is highlighted by research indicating that, in this population, early trauma is associated with more drug and alcohol related consequences (Liebschutz et al., 2002). The ETI-SF fills this need as a practical, reliable, valid, and comprehensive measure of specific types of childhood trauma that can be used with drug abusing samples.

Acknowledgements

This study was funded by the National Institutes of Health and its Office of Research on Women's Health (ORWH). The following specific research grants supported this work: R01-DA11077 (RS), P50-DA16556 (RS), K02-DA017232 (RS), and 5T32-DA07238 (SH).

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Table 1
Demographics and sample characteristics by gender ($N=92$)

	Men ($N=58$)	Women ($N=34$)
Age (M, SD)	36.38 (6.54)	37.18 (6.38)
Years of education (M, SD)	12.38 (1.67)	12.20 (1.49)
Ethnicity		
Caucasian	19 (32.76%)	9 (26.46%)
African American	33 (56.90%)	21 (61.76%)
Hispanic	1 (1.72%)	1 (2.94%)
Other	5 (8.62%)	3 (8.82%)
Employment status		
Full Time	13 (22.41%)	0
Part Time	10 (17.24%)	6 (17.65%)
Unemployed	35 (60.34%)	28 (82.36%)
Cocaine years of regular use (M, SD)	8.53 (6.39)	9.18 (5.85)
Days of crack/cocaine use in past 30 days	16.41 (8.62)	15.94 (9.56)
Reporting disruptive child sexual abuse ^a	13 (22.41%)	19 (55.88%)
Reporting disruptive child physical abuse	49 (84.48%)	26 (76.47%)
Reporting disruptive child emotional abuse	47 (81.03%)	29 (85.29%)
Reporting disruptive major adverse life events	53 (91.38%)	29 (85.29%)
Diagnosed with lifetime PTSD	16 (27.58%)	14 (41.18%)
Diagnosed with lifetime MDD ^a	29 (50.00%)	10 (29.41%)
Diagnosed with lifetime Alcohol Use Disorder ^a	51 (87.93%)	23 (67.25%)

^aChi-squared is significant at $p<0.05$.