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## Psychometric Utility of the Childhood Trauma Questionnaire with Female Street-Based Sex Workers

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### Abstract

The present study examines the psychometric properties of a verbal, face-to-face administration of the Childhood Trauma Questionnaire (CTQ) with female street-based sex workers ( $N = 171$ ). Confirmatory Factor Analysis (CFA) indicated a poor fit between our data and the instrument's established 5-factor structure. Exploratory Factor Analysis (EFA) yielded four stable and usable factors corresponding to the Emotional Abuse, Emotional Neglect, Physical Abuse, and Sexual Abuse subscales of the CTQ; the Physical Neglect subscale did not emerge as a stable factor. Cross loading of many CTQ items onto more than one factor most likely produced the poor CFA fit, and indicated that abuse/neglect constructs were not conceptually distinct for our sample. Mean trauma scores did not differ significantly from published scores for female substance abusers. According to the CTQ Minimization/Denial scale, 42% of participants minimized their childhood maltreatment experiences. A combination of qualitative and quantitative methods may be optimal for the acquisition of sensitive trauma information with wary and vulnerable street populations.

### Keywords

Trauma assessment; childhood trauma; child abuse; female sex workers; prostitution

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Previous research has reported a substantial history of early trauma among female street-based sex workers, in particular childhood sexual abuse (CSA; Arnold, Stewart, & McNeece, 2000; Dalla, 2000, 2001; Farley & Barkan, 1998; James & Meyerding, 1977; Miller & Paone, 1998; Silbert & Pines, 1983; Simons & Whitbeck, 1991). Prior studies have employed simple quantitative methods to establish rates of CSA among large numbers of sex workers (e.g., Yes/No questions; El-Bassel, Witte, Wada, Gilbert, & Wallace, 2001; Potterat, Rothenberg, Muth, Darrow, & Phillips-Plummer, 1998; Young, Boyd, & Hubbell, 2000), or have utilized in-depth qualitative inquiry to explore abuse issues within smaller samples of women (Maher, 1997; Miller, 1986; Romero-Daza, Weeks, & Singer, 1998). To our knowledge, no large-scale quantitative study of female street-based sex workers has utilized a standardized measure to assess the severity of CSA and other forms of childhood abuse. The advantages of using such an instrument with said population would include descriptive information on trauma severity, data reliability/validity, and application to advanced statistical procedures (e.g., multivariate analyses).

The Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998) is a standardized self-report inventory that measures the severity of five different types of childhood trauma and participants' tendency to underreport maltreatment. While previous research on the CTQ has demonstrated its validity and reliability among clinical and non-clinical populations (Bernstein, Ahluvalia, Pogge, & Handelsman, 1997; Bernstein & Fink, 1998; Scher, Stein, Asmundson, McCreary, & Forde, 2001), two recent studies have found structural ambiguity in certain constructs. A factorial study of the CTQ with dually-diagnosed female addicts revealed a four-factor solution that combined Emotional and Physical Abuse as latent variables (Lundgren, Gerdner, & Lundqvist, 2002). Another study of the CTQ administered to college students indicated different factor structures for men and women and an unstable Physical Abuse factor for female respondents (Wright et al., 2001).

In the present study we sought to explore the psychometric properties of a verbal, face-to-face administration of the CTQ with a sample of female street-based sex workers. Of note, the verbal interview format was a change in protocol from the self-report format stipulated in the CTQ manual (Bernstein & Fink, 1998). Because of this population's high-risk status we hypothesized that mean scores on all five clinical scales would be comparable to (or higher than) the published scores for other female substance users (Bernstein & Fink, 1998).

## METHODS

### Participants

From December 2000 to April 2002, female street-based sex workers ( $N = 178$ ) were recruited to participate in a clinical trial of enhanced counseling and referral services. Baseline interviews were conducted immediately upon recruitment by experienced female interviewers on a mobile research recreational vehicle or occasionally in the street (e.g., park bench, stairs, sidewalk). Two interviews were frequently conducted simultaneously on the research vehicle with the outreach specialist and driver present, so complete privacy was not experienced (though confidentiality was assured). The CTQ was administered near the end of the interview and was typically read aloud to participants. The verbal administration of the CTQ was required for practical reasons: interviews were sometimes conducted in the street; participants refused to self-administer the instrument; participants' observed levels of cognitive disorganization and/or fatigue necessitated verbal administration of all measures. Participants were paid \$25 for completing the initial baseline interview, which lasted approximately one hour.

### Measure

The Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998) is a standardized, retrospective 28-item self-report inventory that measures the severity of different types of childhood trauma, producing five clinical subscales each comprised of five items: Emotional Abuse, Physical Abuse, Sexual Abuse, Emotional Neglect, Physical Neglect. The measure also includes a three-item Minimization/Denial scale indicating the potential underreporting of maltreatment. Participants respond to each item in the context of "when you were growing up" and answer according to a five-point Likert scale ranging from "never" = 1 to "very often" = 5, producing scores of 5 to 25 for each trauma subscale. The three items comprising the Minimization/Denial scale are dichotomized ("never" = 0, all other responses = 1) and summed; a total of one (1) or greater "suggests the possible underreporting of maltreatment (false negatives)" (Bernstein & Fink, 1998, p. 18).

## RESULTS

The average age of respondents was 37 ( $SD = 8.2$ ). Fifty-four percent (54%) of women self-identified as African American, 31% as Hispanic/Latina, 11% as Caucasian, and 4% as Other.

Internal reliability coefficients (Cronbach's alpha) for the five clinical scales and the Minimization/Denial scale varied from .58 to .93, indicating a range of satisfactory to excellent.

One hundred seventy-one ( $N = 171$ ) participants had complete CTQ data, which were used in the factor analyses. Confirmatory Factor Analysis using the Mplus structural equation-modeling program (Muthén & Muthén, 1998) tested Bernstein and Fink's (1998) five-factor model. The Chi-Square test and several fit indices together suggested an inadequate fit for the five-factor model ( $\chi^2(52) = 104.57, p < .001$ ; Comparative Fit Index (CFI) = .86; Root Mean Square Error of Approximation (RMSEA) = .07; Standardized Root Mean Square Residual (SRMR) = .07; Weighted Root Mean Square Residual (WRMR) = 1.19). Hu and Bentler (1999) suggest the following guidelines for diagnosing lack of fit: CFI < .95; RMSEA > .06; SRMR > .08. Yu and Muthén (2002) suggest inadequate fit is evidenced by WRMR > .90. Therefore, on balance, the five-factor model did not fit well since only one of the indices (SRMR) met the assumptions for adequate fit.

Because of the lack of adequate model fit in the CFA, we conducted an EFA with an oblique rotation (PROMAX) to determine how CTQ items were loading in our sample. Factor loadings and the corresponding CTQ items are presented Table 1. As noted by the bolded columns, four factors emerged representing Emotional Abuse, Emotional Neglect, Physical Abuse, and Sexual Abuse. A factor representing Physical Neglect did not emerge.

As defined in the CTQ manual (Bernstein & Fink, 1998), mean scores for the valid subscales (per EFA) were as follows; the mean score on the Sexual Abuse subscale ( $M = 9.33, SD = 6.17$ ) was in the "Moderate to Severe" range, and the Physical Abuse ( $M = 9.26, SD = 5.45$ ), Emotional Abuse ( $M = 10.35, SD = 5.33$ ), and Emotional Neglect ( $M = 11.40, SD = 5.37$ ) subscale mean scores were in the "Low to Moderate" range. These subscale scores were not significantly different from the published scores for adult female substance abusers (Bernstein & Fink, 1998). The Sexual Abuse and Physical Abuse subscales demonstrated bi-modal frequency distributions, with most individual subscale items scored as "None to Minimal" or "Severe to Extreme." More than two-fifths of respondents (42%) endorsed one or more of the Minimization/Denial Items; 58% of respondents received a score of 0 on this scale (indicating no minimization of maltreatment). Univariate analyses (t-tests) indicated that those participants who minimized trauma history had significantly ( $p < .05$ ) lower mean scores on all CTQ subscales than those who did not minimize.

## DISCUSSION

The purpose of the present study was to explore the psychometric properties of a verbal, face-to-face administration of the CTQ with a sample of female street-based sex workers. Adequate internal reliability was found for the five clinical scales and marginal internal reliability for the Minimization/Denial scale. Confirmatory factor analysis (CFA) concluded a poor fit between our data and the established five-factor model (Bernstein & Fink, 1998). Exploratory factor analysis (EFA) indicated a four-factor model including the Sexual Abuse, Physical Abuse, Emotional Abuse, and Emotional Neglect clinical subscales; a factor corresponding to the Physical Neglect subscale did not emerge.

A likely source of inadequate fit in the CFA is the complicated loading patterns (e.g., cross-loading of items on more than one factor) of twelve CTQ items indicated by the EFA, suggesting that most CTQ constructs were not conceptually distinct for our sample. Since various forms of abuse and neglect occur concurrently it may have been difficult for our participants to differentiate trauma subtypes represented by the various CTQ items and subscales. Considering other studies that have also demonstrated structural ambiguity within

CTQ constructs (Lundgren et al., 2002; Wright et al., 2001), creating survey items that distinguish trauma subtypes remains challenging.

Severity ratings of Sexual Abuse were “Moderate to Severe” and were comparable to published scores for female substance users (Bernstein & Fink, 1998). This finding is in accordance with prior research demonstrating that childhood sexual abuse among female sex workers may be the most problematic experience of early maltreatment. Severity ratings of Physical Abuse, Emotional Abuse, and Emotional Neglect did not differ significantly from the published scores for female substance users and were in the “Low to Moderate” range, which we anticipated to be higher. These ratings may be a reflection of the substantial minority of women (42%) who minimized their trauma histories, according to the Minimization/Denial scale. Of particular interest, interviewers observed that some participants either denied most CTQ items or became emotionally “flooded” or agitated by the questions. Thus, reactivation of an internal trauma dialectic (e.g., tension between numbing/avoidance and hyperarousal/intrusion; Herman, 1992) may have resulted in either the minimization or high endorsement of specific items on the CTQ. This tension between numbing and hyperarousal is consistent with the bimodal distribution of the Sexual and Physical Abuse item scores, wherein participants reported that such abuse either “never” or “very often” occurred.

The substantial minority of women (42%) who minimized childhood maltreatment is of interest. The verbal face-to-face administration of the CTQ may have been experienced as intrusive and discouraged open disclosure. Furthermore, the administration of the CTQ upon recruitment may not have allowed for adequate rapport and trust to be established among participants and the research team, also contributing to the denial of early trauma experiences. Because those individuals who live/work in the streets face multiple problems and deprivations on a daily basis and are clearly at increased vulnerability for mental illness, substance use, and continued victimization/violence (Davies-Netzley, Hurlburt, & Hough, 1996; El-Bassel et al., 2001; Farley & Barkan, 1998; Morrell-Bellai, Goering, & Boydell, 2000; Stein, Leslie, & Nyamathi, 2002), they are likely to be especially wary of researchers asking highly sensitive questions in a structured or routinized manner. Increased disclosure or less denial of CTQ items might have occurred if the measure had been self-administered or were verbally administered after several encounters with the participants (after greater trust/confidence had been developed) and at a location more removed from their drug-using and sex work environments.

Weaknesses of the present study include the relatively small sample size, which prohibited CTQ item manipulation and further data exploration. In addition, since administration of the CTQ was conducted on the mobile research unit, complete privacy could not be provided and this may have affected participants’ comfort levels and disclosure of information. In the absence of corroborating data regarding early childhood maltreatment, interpretation of all CTQ subscales including the Minimization/Denial scale should be made cautiously. Due to the specific nature of the study participants and the verbal CTQ administration, it is unlikely that these findings can be generalized to other populations. As history of childhood maltreatment and ongoing adult traumatic experiences vary widely across populations, so research methods to acquire such information may vary widely as well, and should be chosen accordingly.

Future research on the CTQ with street populations should explore administration method effects, and may consider altering or eliminating the items that comprise the Physical Neglect subscale since many street dwellers continue to experience this type of trauma. A combination of quantitative and qualitative methods may be optimal for the acquisition of sensitive childhood trauma information with wary and vulnerable street populations.

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**TABLE 1**  
Factor Loadings of CTQ Items from Exploratory Factor Analysis ( $N = 171$ )

CTQ Item	F1	F2	F3	F4	F5	Corresponding Subscale
<b>PA1</b> Got hit so hard that I had to see a doctor or go to the hospital.	<b>96</b>	01	-11	-05	06	<b>Physical Abuse</b>
<b>PA2</b> Family hit me so hard that it left me with bruises or marks.	<b>93</b>	-04	11	-02	-06	
<b>PA4</b> I was punished with a belt/board/cord/ other hard object.*	<b>34</b>	-08	47	-14	05	
<b>PA5</b> I believe that I was physically abused.*	<b>25</b>	-04	41	06	34	
<b>PA3</b> Beaten so badly it was noticed by a teacher/neighbor/doctor.*	<b>41</b>	07	38	07	-01	
<b>EN3</b> Someone in my family helped me feel important or special.	11	<b>67</b>	-07	13	-02	<b>Emotional Neglect</b>
<b>EN2</b> I felt loved.	-12	<b>79</b>	22	-11	-03	
<b>EN4</b> People in my family looked out for each other.	-11	<b>64</b>	09	04	04	
<b>EN1</b> People in my family felt close to each other.	-01	<b>74</b>	-02	03	12	
<b>EN5</b> My family was a source of strength and support.	-08	<b>59</b>	29	06	05	
<b>EA2</b> People in my family called me "stupid," "lazy," or "ugly."	-10	11	<b>72</b>	04	-12	<b>Emotional Abuse</b>
<b>EA4</b> I thought that my parents wished I had never been born.	03	30	<b>55</b>	-13	-05	
<b>EA1</b> People in my family said hurtful or insulting things to me.	-05	06	<b>80</b>	01	-03	
<b>EA3</b> I felt that someone in my family hated me.	-03	10	<b>68</b>	07	11	
<b>EA5</b> I believe that I was emotionally abused.*	06	15	<b>38</b>	00	46	
<b>PN3</b> I didn't have enough to eat.*	30	14	26	-05	-04	<b>Physical Neglect</b>
<b>PN1</b> I knew there was someone to take care of me and protect me.	18	56	-09	-02	02	
<b>PN4</b> My parents were too drunk or high to take care of the family.*	35	26	01	09	-08	
<b>PN5</b> I had to wear dirty clothes.*	26	-03	27	15	-09	
<b>PN2</b> There was someone to take me to the doctor if I needed it.*	04	53	-03	30	-10	
<b>SA3</b> Someone tried to touch me in a sexual way/made me touch them.	-04	-03	17	15	<b>81</b>	<b>Sexual Abuse</b>
<b>SA5</b> Someone threatened me unless I did something sexual*	-07	-06	05	75	<b>51</b>	
<b>SA4</b> Someone tried to make me do/watch sexual things.*	09	-03	-15	31	<b>67</b>	
<b>SA2</b> Someone molested me.	01	06	-02	-04	<b>95</b>	
<b>SA1</b> I believe that I was sexually abused.	-02	09	-02	-07	<b>97</b>	

Note: Factor loadings were rounded to 2 places and multiplied by 100 to facilitate visual decoding of the loading pattern.

\* Indicates cross-loading of item on more than one factor; criterion for complicated factor loadings set at .25.