POST TRAUAMATIC STRESS DISORDER AND 1 YEAR OUTCOME IN METHADONE MAINTENANCE TREATMENT

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Abstract

The goal of this single site study is to evaluate among newly enrolled patients receiving methadone maintenance therapy at an urban methadone maintenance clinic the frequency of life-time stress experiences, the predictors and prevalence of current PTSD, and whether PTSD affects retention in methadone maintenance treatment at 1 year. Of the 115 eligible people, 89 (77%) participated in the study. The mean number of reported lifetime stressful events was 8.0 (SD=3.7). Twenty-seven percent were diagnosed with PTSD. Nearly 92% of those with PTSD had co-occurring depressive symptoms. Female gender (AOR [95% CI]; 3.89 [1.07-14.01]), number of traumatic events (AOR [95% CI];1.34 [1.13-1.61]) and less education (AOR [95% CI];4.13 [1.14-14.98]) were significantly associated with PTSD. PTSD diagnosis was not associated with treatment retention (OR [95%CI] 0.61 [0.23-1.64]). Future studies are needed to determine whether early psychiatric treatment of PTSD integrated into methadone maintenance programs may impact continued substance abuse use and improve retention in care.

Introduction

Estimates from samples of patients attending methadone maintenance clinics from the late 1990s and early 2000s suggest that the prevalence of a life-time history of a diagnosis of PTSD ranges from 14.9%-29%[1-4]. This is considerably higher than the lifetime prevalence of PTSD in the general population which is reported to be 6.8% [5]. The wide variance of these estimates may be attributed to the use of samples of convenience, differences in when the PTSD evaluations occurred (i.e. prior to or after starting on methadone) and differences in sampling frames. Of note, none of the studies systematically assessed predictors of PTSD or the types or frequency of incident traumas experienced by the samples studied and few evaluated co-occurring depressive disorders.

Although co-occurring PTSD among those with substance use disorders may be associated with physical and mental health disabilities and poorer treatment outcomes [6;7] only one *study[2]* has evaluated the association between PTSD and treatment retention in a sample of patients receiving methadone maintenance and detoxification treatment. This study found that 3 months after admission to methadone detoxification or maintenance program that a

baseline identification of PTSD was significantly associated with overall rates of multiple substance use but not associated with higher drop-out rates compared to those without PTSD. The short, 3 month time frame, may not have provided adequate length of time for follow-up. Furthermore, subjects selected for the study included those on methadone detoxification as well as those on methadone maintenance which may limit generalizability as well as the possibility of knowing whether PTSD affects long-term utilization among those on methadone maintenance.

The goal of this study is to evaluate among newly enrolled patients receiving methadone maintenance therapy at an urban methadone maintenance clinic the types and frequency of life-time traumatic experiences, the predictors and prevalence of current PTSD, and finally to assess whether PTSD affects retention in methadone maintenance treatment at 1 year.

Materials and Methods

Study Design and Sample

This single site study sought to assess the prevalence and predictors of PTSD among newly enrolled patients receiving methadone maintenance therapy at an urban methadone maintenance treatment center affiliated with a university hospital and subsequently determine if PTSD is associated with retention in the methadone clinic at one year. All patients who received methadone maintenance for at least 3 months, but not longer than approximately 12 months, were eligible to participate in the study. We chose the three month time frame as use of illicit substances prior to methadone stabilization may lead to transient symptoms that may mimic psychiatric syndromes. Using these criteria, 115 patients were eligible to participate in the study. Potential participants were recruited from February 2009 to November 2009. The study was approved by the University of Maryland Baltimore's Institutional Review Board and all participants provided informed consent. Participants were paid $20 for participating in the study. Patients who received a diagnosis of post traumatic stress disorder were sent a confidential letter with an explanation of the diagnosis and referral information. All eligible participants were given the opportunity to participate in the study. Of the 115 eligible participants, 77.3% (n=89) agreed to participate in the study. Reasons for lack of participation included being unable to give informed consent (n=1), declining to be interviewed (n=3), and scheduling conflicts (n=22). Participant demographic information was assessed by medical record review. Race and ethnicity were determined using separate categories.

Assessment Instruments

To determine the prevalence of PTSD, we used the Post Traumatic Diagnostic Scale (PDS)[8]. The PDS is a 49 item scale and can be used to diagnose PTSD as well as determine PTSD symptom severity. The PDS gathers ratings of the frequency of the 17 symptoms of PTSD on a 4-point scale; the sum of the ratings measures PTSD symptom severity (range 0 – 51). The PDS follows the structure of the DSM diagnosis of PTSD and can be scored based on fulfilling all the DSM criteria for PTSD. Results that describe the traumatic event or stressor that led to the symptoms of PTSD (i.e., criterion A) are based on data collected from the PDS. The PDS has a 82% diagnostic agreement with the Structured Clinical Interview for the DSM. The PDS was collected only once at the time of participant recruitment.

To assess lifetime stressors, we used the Life Stressor Checklist Revised (LSC-R).[9] The LSC-R is a 32 item questionnaire which addresses witnessed, threatened, and actual physical or sexual violence to assess revictimization. More specifically the LSC-R asks about the life time occurrence of these events and about the occurrence of traumatic events in the previous six-months. We used a modified version of the LSC-R that added questions relevant to a

substance abuse population. Additional questions assessed the approximate age of onset as well as the frequency of trauma. In addition mistreatment by substance abuse service providers was also assessed. The Life Stressor Checklist-Revised has two questions that pertain only to women (i.e., miscarriage and abortion). Because of this the total number of possible stressor will always be slightly higher for women for men. To account for this potential imbalance, all analyses that evaluated a gender effect were based on only the Life Stressor Checklist-Revised questions that could be answered by both genders. The LCS-R was collected only once at the time of participant recruitment.

The Quick Inventory of Depressive Symptomology[10] - Self Resport (QIDS-SR) is a brief, 16-item, self-report measure of depression severity. For each item, responders are asked to rate themselves in the past seven days on a scale of 0 to 3. Total scores range from 0 to 27 and reflect the nine DSM-IV diagnostic criteria for Major Depressive Disorder. The QIDS-SR has high internal consistency measured with a Cronbach's alpha of 0.86. Total scores are highly correlated (0.84) with total scores on the 17-item version of the Hamilton Rating Scale for Depression. A QIDS-SR score of 11 or greater is reported to be suggestive of major depression[10]. The QIDS-SR was collected only once at the time of participant recruitment.

Toxicology Screening

We used the results of observed urine toxicology screening performed as a part of routine treatment within the methadone clinic. Patients in the methadone program had urine toxicology screening at least on time per month. Enzyme multiplied immunoassay testing performed at a certified laboratory was used to evaluate the results of the urine toxicology screen. The results of the screen allowed determination of the following drugs of abuse: (1) cocaine, (2) opiates, (3) PCP, (3) amphetamines, (5) barbiturates, (6) marijuana and (7) propoxyphene. Results of toxicology screening was collected only once at approximately the time of participant recruitment.

Analysis

Univariate distributions included percentages for dichotomous and categorical variables and means for continuous variables. For the purposes of this analysis, PTSD is meant to reflect a diagnosis at the time of recruitment. Bivariate analysis evaluated associations between the outcome of interest--diagnosis of PTSD at the time of recruitment with the following variables: (1) demographic characteristics, (2) results of the toxicology screen; (3) trauma history and (4) depressive symptoms. Means were compared using t-tests or Wilcoxon rank-sum test. Comparisons of percentages were made with chi square tests or Fisher exact tests. Logistic regression analyses were used to examine associations between demographic and trauma related variables and the outcome of interest--diagnosis of PTSD. The model was used to estimate relative odds ratios and 95% confidence intervals and adjust for differences in demographic characteristics. As we were interested in understanding the association between PTSD diagnosis and demographic and stress related variables we a-priori selected variables that were previously found to be associated with PTSD diagnosis in the general population [11]. Because depression as measured by the QIDS was so highly correlated with the diagnoses of PTSD (92% (22/24)) of those with a diagnosis of PTSD also had symptoms suggestive of co-occurring major depression) we did not include it as a predicator variable in the final logistic regression analysis.

A similar analysis was conducted with the outcome being retention in methadone maintenance at one year. One year was defined as one year from the time they were interviewed for the study. We chose this in order to keep the time consistent for each participant in the study. Logistic regression analyses were used to examine associations

between demographic and trauma related variables and the outcome of interest—retention in methadone maintenance at one year. The model was used to estimate relative odds ratios and 95% confidence intervals and adjust for differences in demographic characteristics. The Analyses were conducted using SAS (version 9.2). All reported p-values are 2-tailed.

Results

Demographic Characteristics

The majority of participants were male (66.3%), members of an ethnic minority group (70.8%) and unmarried (81.2%) (Table 1). The average participant age was 43.6 (SD=8.4). Participants tended to be unemployed (77.6%) and earn less than $1,000 a month (60.0%). Most of the participants had at least a partial high school education (65.5%). Most participants either referred themselves to the methadone treatment program (45.7%), or they were referred by a probation or parole officer (24.7%) or a health care provider (22.2%). On average there were 9.5 days (SD=9.8) between the participant's assessment and the participant's closest toxicity screening. Toxicity screenings revealed that 51.1% of the participants screened positive for one or more illicit substances. Specifically, 27.3% of participants tested positive for cocaine, 19.1% tested positive for opiates, 18.2% tested positive for benzodiazapines and 10.2% tested positive for marijuana. Nearly 20% were positive for more than one illicit substance. The average methadone dose on the day of the assessment was 88.4 mg (SD=20.8). Nearly one in five (21.3%) (n=19) had a methadone dose greater than 100mg. Among participants that tested positive for opiates 31.5% (5/16) had a methadone dose greater than 100mg which was not statistically different from those who had a negative urine *toxicology screen (X^2=0.57, p=0.45).*

Lifetime Stressor History

The mean number of reported lifetime stressors was 8.0 (SD=3.7). Among all participants the most common stressor reported were the death of family member or friend (97.8%), witnessing (80.9%) or being the victim of a non-sexual assault (84.3%), serious money problems (85.4%), being jailed (84.3%) or having a family member jailed (75.3%) (Table 2). Approximately a third (34.8%) of the participants reported a lifetime history of being physically abused. The vast majority (80.6%) of the participants reported first being physically abused before the age of 18. About one in six (16.9%) of all the participants reported a lifetime history of rape. Women were significantly more likely to report ever being raped (women (n=12/30) 40% vs. men (n=3/59) 5.1%, Fisher Exact Test=17.3, p<0.001) compared to men. Most (60.0%) of the participants who reported ever being raped reported that the rape occurred before the age of 18.

Prevalence of PTSD

PTSD was diagnosed in 27% (n=24) of the participants. Criterion A traumatic events associated with PTSD included non-sexual assault (n=7, 29%), sexual assault (n=5, 21%), physical abuse by partner or parent (n=4, 17%), witnessed a death (n=4, 17%), notified about a death (n=2, 8%), general trauma (n=1, 4%) and being stalked (n=1, 4%). Among those with PTSD, women were found to be significantly more likely to report having been raped compared to men (women (n=9/14), 64.3% vs. men (n=1/10), 10.0%, Fisher exact=0.01, p=0.01).

Depressive Symptoms

For the entire sample the average total score on the QIDS was 10.3 (6.2). Those with a diagnosis of PTSD had an average total score on the QIDS of 15.9 (SD±4.6) which was significantly greater than the average total score on the QIDS of 8.3 (SD±5.5.) for those

without PTSD (t-test=-6.05, df-87, p<0.001). When using the cut-off of QIDS score greater than 11, nearly 44% (39/89) of the sample had symptoms suggestive of co-occurring major depression. Using this cut off, nearly all (92% (22/24)) those with a diagnosis of PTSD also had symptoms suggestive of co-occurring major depression compared to 26% (17/65) of those without PTSD (X^2=30.6, p<0.001).

Predictors of PTSD Diagnosis

In bivariate analysis variables associated with a PTSD diagnosis included female gender, having less than a high school education and number of reported *stressful life events* and QIDS score greater that 11. PTSD diagnosis was not statistically significantly associated with result of urine toxicology screen (Table 1). The final logistic regression model included the following variables—age, race, gender, education and number of lifetime traumatic events. (Table 3) Given that nearly all those with PTSD had co-occurring depressive symptoms we did not include this variable in the final logistic regression model. Based on the final model women had nearly four times the odds of being diagnosed with PTSD compared to men (AOR [95% CI]; 3.89 [1.07-14.01]); those with less than a high school education were found to have over 4 times the odds of having a diagnosis with PTSD compared to those with a high school degree or higher (AOR [95% CI]; 4.13 [1.14-14.98]); and every increase in the number of reported *stressful life* events was associated with a 34% increase in the odds of having a PTSD diagnosis (AOR [95% CI]; 1.34 [1.13-1.61]).

Retention in Methadone Maintenance at 1 Year

One year after admission to methadone maintenance treatment nearly two-thirds (55/87) of the patients remained in methadone maintenance. In bivariate analysis only one variable was negatively associated with retention in methadone maintenance treatment at one year that being positive toxicology screen at time of study entry. Compared to those without a toxicology positive screen at the time of study entry, those with a toxicology positive screen had 80% less the odds of remaining in methadone maintenance at 1 year ((OR [95%CI] 0.20 [0.07-0.52]). In particular, use of opiates (X^2=10.1, p=0.001) or use of benzodiazepines (X^2=12.0, p<0.001) were each significantly and strongly negatively linked to retention in methadone maintenance. Diagnosis of PTSD was not significantly associated with treatment retention ((OR [95%CI] 0.61 [0.23-1.64]). This remained the case even after adjusting for positive toxicology screen ((AOR [95%CI] 0.67 [0.22-2.07]). Methadone dose greater than 100mg at the time of recruitment was not significantly associated with treatment retention ((OR [95%CI] 0.50 [0.18-1.43]). There were no other variables that were significantly positively associated with retention in methadone maintenance treatment.

Discussion

Our study found the current prevalence of PTSD to be 27% among a sample newly enrolled patients receiving methadone maintenance therapy at an urban methadone maintenance treatment center. In other words, our study found that a little over 1 in 4 newly enrolled patients receiving methadone maintenance had a co-occurring diagnosis of PTSD. Our prevalence estimate is higher than the lifetime prevalence of PTSD of 14.2% reported by Villagomez et al. [4] and it is higher than the lifetime prevalence of PTSD of 19.8% reported by Hien et al. [2]. Our estimate of the prevalence of PTSD, though, is similar to the 12 month prevalence of PTSD of 27.8% reported by Rosen et al. [3] and the lifetime prevalence of 29% reported by Clark et al. [1]. Unlike the study by Rosen et al. [3] that focused on established older aged (i.e., greater than 50 years old) users of methadone and unlike the study by Clark et al. [1] that used baseline data from a randomized control trial prior to starting on methadone maintenance, our study evaluated early utilizers of methadone treatment and therefore may be more apt to generalize to those in early methadone maintenance therapy.

With respect to frequency of stressful life events, we found that on average people participating in our study reported 8 events over the course of their lifetime. This is higher than the mean number of life-time events of 4.8 that was reported among representative sample of people in the Detroit area [12] or of approximately 5 reported among women with substance use disorders [13]. Of note, in our sample, 8 out of 10 people reported witnessing or being a victim of a non-sexual assault. This finding speaks to the danger associated with using illicit substances while living in urban, poverty stricken environments[14;15;15;16]. With respect to reliability of reporting previous traumas at least one previous study found that self report of trauma among heroin users was as reliable as reports of trauma by non-substance using samples [17].

An important strength of our study is that we also evaluated predictors associated with PTSD diagnosis. As might be expected the number of stressful life events was strongly and significantly related to PTSD diagnosis. However, even after adjusting for number of stressful life events we found two important predictors of PTSD namely female gender and having less than a high school education. Similar to the bivariate association between gender and PTSD diagnosis reported by Villagomez et al. [4] and Clark et al [1] we found that female gender was significantly associated with a diagnosis of PTSD. After adjusting for age, race, education and number of stressful life events female gender continued to be significantly associated with a diagnosis of PTSD. This is consistent with what is known in the general population where female gender is considered a risk factor for PTSD [11]. Why women are at higher risk for developing PTSD is unclear. One possibility is that rape is known to be strongly related to developing PTSD[13;15] and women experience more sexual assaults compared to men thus potentially increasing their risk for PTSD. Among those with PTSD in our sample, women were significantly more likely to report a lifetime history of rape compared to men suggesting that sexual assault may in fact be a plausible mediator. However, given the small numbers of people reporting rape in our sample this hypothesis is best viewed as speculative.

We also found that having less than a high school education was strongly and significantly related to a PTSD diagnosis. After adjusting for age, race gender and number of stressful life events, those with less than a high school education had over 4 times the odds of being diagnosed with PTSD compared to those with a high school education or greater. Some[11] but not all[18] studies in the general population have found an association between low education status and PTSD. Some hypothesize that lower educational status may be a marker for greater cognitive impairment and those with cognitive impairments may be less able to cope with trauma exposure and therefore be more at increased risk of developing PTSD [19]. Although speculative, those with less than a high school education may also have decreased resilience to stress and may therefore be at higher risk for developing PTSD. Conversely, those with greater than a high school education may have improved coping skills that may mitigate the development of PTSD [20].

We also found that PTSD was not associated with retention in methadone maintenance at one year. This is similar to the finding of Hien et al. in a civilian sample and Trafton et al.[21] in a VA sample who also did not find a differential attrition between those with and without PTSD. Our study found that continued use of illicit substances, particularly opiates and benzodiazepines; appear to be the strongest predictors of lack of retention in methadone maintenance. This finding has considerable face validity and may suggest that continued substance abuse may be the single largest negative predictor of remaining in methadone maintenance. However, it does not negate the importance of identifying PTSD early in substance abuse treatment or the power of treating the symptoms of co-occurring psychiatric symptoms as previous studies suggest that treatment may in fact improve overall psychiatric and substance abuse treatment outcomes as well [22-24]. For example, specific forms of

trauma may predict poorer outcomes in methadone maintenance treatment. For example, Schiff et al. [25] reported that among women who reported childhood sexual abuse, those with a diagnosis of PTSD were significantly more likely to use heroin at 1-year follow-up compared to women without a PTSD.

Many studies suggest that methadone dose in the range of 60mg-100mg is associated with better treatment outcomes and reduction in opiates use[26-28]. The majority of participants in our study were receiving mean doses of methadone that was approaching 90mg. Yet, methadone doses greater than 100mg may provide additional benefit [29]. Approximately 1 in 5 participants in our study had doses of methadone greater than 100mg. Among participants that tested positive for opiates 31.5% (5/16) had a methadone dose greater than 100mg which was not statistically different from those who had a negative urine toxicology screen. However, the small sample size limits are ability to draw firm conclusions regarding the strength of the association between urine toxicology screening results and methadone doses greater than 100mg. Our study also did not find a significant association between methadone doses greater than 100mg and retention in the clinic (Crude Odds Ratio [95% Confidence Interval]: 0.50 [0.18-1.43]; p=0.19). We believe that this is likely due to insufficient power in our sample. Future sufficiently powered studies will be required to verify this.

This study has several limitations. First, the study occurred in a single, urban, methadone maintenance treatment facility affiliated with a university hospital and may not generalize to other methadone maintenance treatment facilities. Second, we were not able to evaluate approximately 20% of those eligible to participate in the study. The most common reason for not participating in the study was inconsistent attendance at the clinic. There are multiple reasons patients may inconsistently attend methadone treatment and therefore, we are unable to predict how this would bias our prevalence estimate. However, if we conservatively assume that all those who did not participate in the study also did not have a diagnosis of PTSD our estimate of PTSD would be reduced from 27% (n=24/89) to 21% (n=24/115). This result would still be nearly two and half times as high as found in the general population (8%) [30] and would still fall within the range of 14%-29% reported in previous studies. Third, due to lack of power we were unable to evaluate ethnicity separate from race in our adjusted analyses. Fourth we did not collect data on the urine toxicology screen results closest to the time that participants stopped receiving methadone maintenance at the clinic, so we are unable to know for sure whether participants in the study who had positive toxicology screening at the time of recruitment were still struggling with continued substance use at the time of discharge. Additionally we were not able to evaluate the interaction between a toxicology screen more proximal to discontinuation of methadone treatment and PTSD to determine if those with PTSD who were still using at the time of discontinuation may have had a different pattern of retention compared to those who were not using. Fifth, although post-traumatic stress disorder (PTSD) among those with opiate dependence is common, given the cross-sectional nature of part of this study we are unable to determine the direction of association between PTSD and drug use. Research indicates that drug abuse may lead to exposure to potentially traumatic events due to the acquisition of drugs and the associations with violent and criminal activity [7]. On the other hand, studies have also indicated that PTSD symptoms may contribute to or elicit substance abuse patterns [16]. Regardless of the direction of association, dual diagnosis of PTSD and substance use disorders may complicate recovery for those individuals who attempt to discontinue drug use. Sixth, the information on treatment episode being greater than 3 months but less than 12 months was evaluated for inclusion/exclusion purposes only and was not collected as a variable for analysis. Thus we do not have that information to calculate mean treatment length at the time of the study. Finally, research suggests that morphine used during the peritraumatic period may in fact reduce the likelihood of the development of PTSD[31]. Although this is an intriguing hypothesis we were not able to investigate this relationship

further in our study. Finally, the relationship between PTSD and substance use is clearly dynamic. We attempted to identify variables that were associated with retention in clinic and found that even after evaluating for a variety of variables, including the interaction between PTSD and positive toxicology screen PTSD was still not a strong predictor of retention. However, it will be important for future studies to be sufficiently powered to determine whether the non-significant small effect between PTSD and positive urine toxicology screens found in our study is in fact statistically significant in the population.

In conclusion, PTSD is highly prevalent among those enrolled in an urban methadone maintenance treatment. Number of stressful life events, gender and education appear to be the strongest predictors of PTSD diagnosis in our sample. Drug use at the time of recruitment in the study was not predictive of PTSD diagnosis in our sample however, drug use at the time of recruitment in the study was the only and strongest predictor of retention in methadone maintenance. Future efforts should be directed toward improving screening for people for traumatic events as well as PTSD upon entering methadone maintenance treatment. This may be particularly true for women and those with lower educational status who may be at a particularly high risk for developing PTSD. When considering the development or adaptation of potential treatment interventions for PTSD in the methadone environment, issues related to gender (i.e., need for gender specific groups) and education status (i.e., reading material geared toward those with low reading proficiency) may be extremely important and warranted. Future studies are needed to determine whether early treatment may impact not only psychiatric but substance abuse symptoms, including retention in care.

Acknowledgments

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Table 1

Characteristics of Participants Stratified by PTSD Diagnosis

	Sample (n=89)	PTSD (n=24)	Non PTSD (n=65)	P Value
Age, mean (SD)[c]	43.6 (8.4)	41.6 (7.3)	44.4 (8.7)	.17
Female[a]	33.7%	58.3%	24.6%	<.01
White[b]	29.2%	33.3%	26.6%	.60
Black	69.7	66.7%	72.3%	
Native American, Pacific Islander	1.1%	0%	1.1%	
Hispanic[b]	3.3%	4.3%	3.2%	1.00
Married[b]	18.8%	13.6%	20.6%	.55
High School & Above[a]	65.5%	45.5%	72.6%	.02
Employed[b]	22.3%	18.2%	23.8%	.77
Income Source[b]				.63
Self	27.4%	33.3%	25.0%	
Public Assistance	20.7%	23.8%	19.6%	
Other	51.9%	42.9%	55.4%	
Family Income[b]				.67
<1,000	60.0%	59.1%	60.3%	
1,000-4,999	18.5%	22.7%	17.2%	
>5,000	21.5%	18.2%	22.4%	
Methadone dose[c]	88.4(20.8)	89.0 (23.4)	88.1(19.9)	.87
Positive Toxicity screening[a]	50.6%	62.5%	46.5%	.19
Testing Positive for >1 substance[a]	19.3%	16.7%	20.3%	.75
QIDS	10.5±6.2	15.9 ± 4.6	8.3 ± 5.5	<.001
QIDS >11	43.8%	92%	26%	<.001

Tests comparing PTSD vs. Non PTSD:

[a] Chi squared test

[b] Fisher exact

[c] t Test

Table 2

Report of Lifetime *Stress Measured by the LSC-R*, Stratified by PTSD

Group	Total (n=89)	PTSD (n=24)	Non PTSD (n=65)
Personal Trauma			
Accident	58.4%	66.7%	55.4%
Disaster (serious)	19.1%	16.7%	20.0%
Serious Illness	49.4%	83.3%	36.3%
Jailed- Subject	84.3%	79.2%	86.2%
Strip Searched	7.9%	12.5%	6.2%
Discriminated Against	39.3%	45.8%	36.9%
Homelessness	65.2%	83.3%	58.5%
Financial Problems (Serious)	85.4%	95.8%	81.5%
Familial Trauma			
Foster or Adoption Care	4.5%	8.3%	3.1%
Separation/ Divorce- Parents	53.4%	50.0%	54.7%
Separation/ Divorced- Subject	29.2%	45.8%	23.1%
Separation from Children	38.2%	66.7%	27.7%
Child with a Severe Handicap	10.1%	12.5%	9.2%
Cared for Person with Severe Handicap	46.1%	58.3%	41.5%
Jailed -Family Member	75.3%	91.7%	69.2%
Death of a Loved One	97.8%	100.0%	96.9%
Women Only			
Abortion	43.3% (n=30)	42.9% (n=14)	43.8% (n=16)
Miscarriage	46.7% (n=30)	42.9% (n=14)	50.0% (n=16)
Non-Sexual Abuse			
Physical Neglect	11.2%	16.7%	9.2%
Emotional Abuse	42.7%	66.7%	33.8%
Family Violence	57.3%	79.2%	49.2%
Physical Abuse	34.8%	54.2%	27.7%
Stalked	43.8%	66.7%	35.4%
Hate Crime	19.1%	25.0%	16.9%
Witnessed an Assault	80.9%	87.5%	78.5%
Non-sexual Assault	84.3%	91.7%	81.5%
Sexual Abuse			
Sexually Harassed	15.7%	33.3%	9.2%
Molested	11.2%	29.2%	4.6%
Raped	16.9%	41.7%	7.7%
Prostitution	37.1%	54.2%	30.8%

Table 3

Adjusted Odds of PTSD Diagnosis

Characteristic	Adjusted Odds Ratio [95% Confidence Interval]
Age	1.01[0.93-1.10]
Gender	
Female	3.89[1.07-14.09]
Male	1.00[referent]
Race	
Non-Hispanic White	0.55[0.12-2.55]
Black & Native Hawaiin/Pacific Islander	1.00[referent]
Education	
Less than High School Education	4.13[1.14-14.98]
High School Education & Above	1.00[referent]
Number of Stressful Life Events	1.34[1.13-1.61]

The model adjusts for all the variables listed above