2014

Non-fatal Suicide Behavior Among Women Prisoners: The Predictive Roles of Childhood Victimization, Childhood Neglect, and Childhood Positive Support

Stephen Tripodi, Eyitayo Onifade, and Carrie Pettus-Davis
Abstract

Many women entering prison report high rates of childhood victimization. Women in prison also report higher rates of non-fatal suicidal behavior than women in the general population and similar rates to their male counterparts despite have significantly lower suicide rates than males in the general population. Yet, there is a dearth of research that addresses the relationship between childhood victimization and suicidality for women prisoners in the United States. The purpose of this study is to assess the relationship between childhood victimization and suicidality for a random sample of women prisoners, determine the influential role of frequency of victimization, and investigate predictive differences between childhood physical victimization, childhood sexual victimization, childhood neglect, and childhood support. Results indicate that childhood victimization, neglect, and lack of support are all related to suicidality. Also, women who reported higher frequencies of these childhood experiences were more likely to have experienced suicidality than women with lower frequencies.

Keywords: Women Prisoners, Childhood Victimization, Neglect, Support, Suicidality
Women are currently the fastest growing population in American prisons. There were 112,797 women incarcerated in State or Federal prison in 2008 compared to just 12,300 women incarcerated in US prisons in 1980 (Guerino et al., 2011; Pew Center on the States, 2008; West & Sabol, 2009). While the US population has increased during the same period, explaining part of the incarceration growth, the increase in women inmates far exceeds the overall population growth (Petersilia, 2005). The number of women in prison has increased dramatically since the “War on Drugs” was enacted. The enormous growth in imprisonment among women is particularly alarming because many of these women are the custodial parent of their children (Frye & Dawe, 2008). Also concerning is that women who end up in prison report high rates of lifetime victimization, particularly in childhood. Up to 78% of incarcerated women report having histories of physical and/or sexual victimization (McDaniels-Wilson & Belknap, 2008; Tripodi & Pettus-Davis, in press). Given the high prevalence of victimization among these women, it is not surprising that disproportionately high rates of mental health and substance abuse problems are found amongst women in prison when compared to the general population (Hick, Vaidyanathan, & Patrick, 2010; Houser, Balenko, & Brennan, 2011). Many women enter prison with significant untreated mental and physical health impairments but receive few treatment options during or after incarceration. Particularly concerning, women in prison have higher rates of non-fatal suicidal behavior than women in the general population (Fazel & Danesh, 2002).

In multiple countries, including the United States, prison suicide rates are disproportionate compared to the general population for all prisoners in general and women prisoners in particular. In a recent study of 12 countries, suicide rates in prison
were above 100 per 100,000 inmates compared to 21 suicides per 100,000 people in the
general population (Fazel, Grann, Kling, & Hawton, 2010). Approximately 95% of the
inmates in this study were males; however, important information was discovered with
the women in their sample. In the United States, although women in the general
population are at a lower risk to commit suicide than men, women inmates are just as
likely to commit suicide as their male counterparts (Fazel et al., 2010).

Lifetime suicide attempts for women prisoners ranges from 28% to 42%
compared to approximately 9% in the general population (Chapman, Spects, & Cellucci,
2005; De Ravello, Abeita, & Brown, 2008). Despite high rates of suicidality among
women prisoners, little is known about the predictors of suicidality for these women.
Gaining a better understanding of predictors will allow for the development of targeted
suicide prevention interventions in prison settings. This knowledge could also inform
transitional reentry programming for women prisoners reentering communities – recently
released women prisoners are also at higher risk for suicidality (Pratt, Appleby, Piper,
Webb, & Shaw, 2010).

Although some suicide prevention interventions exist for prisoners, these
interventions are often based on the experiences of male prisoners (Dye, 2011; Hayward,
Kravitz, Goldman, & Freeman, 2000) and do not take into account the unique needs of
women prisoners. One particularly pertinent relationship for women prisoners is the
association between childhood victimization and risk for suicidality in the general
population. Women prisoners report high rates of childhood victimization – much higher
than their male counterparts. Yet, there is only one published study that addresses the

Clearly, additional studies are needed to develop a more thorough understanding of this relationship for women prisoners, and to gain deeper insight into how specific types of childhood victimization may partially engender suicidality. Thus, the purpose of this study is tri-fold: a) to assess the relationship between childhood victimization and suicide attempts for a random sample of women prisoners, b) to investigate predictive differences between childhood physical victimization, childhood sexual victimization, childhood neglect, and childhood support, and c) to determine whether women prisoners with higher frequencies of childhood victimization and neglect are more likely to have experienced suicidality than women prisoners without with lower frequencies.

**Background**

*Predictors of Suicidal Thoughts, Suicidal Attempts, and Successful Suicide.*

Research with samples from the general population indicates that experiencing childhood victimization is associated with suicidal thoughts, suicide attempts, and successful suicide (Joiner, Sachs-Ericsson, Wingate, Brown, Anestis, & Selby, 2007; Roy, 2003). Glowinski et al. (2001) interviewed approximately 3,000 female adolescent twins and found that childhood physical abuse was associated with attempting suicide. Ullman’s (2004) systematic review of suicidality among women in the general population similarly found previous victimization is associated with suicidality. Joiner et al. (2007) found that childhood victimization was related to the lifetime number of suicide attempts for a sample drawn from the National Comorbidity Study, which is a probability sample of approximately 10,000 participants representing the population of the United States.
Specifically, the effects on suicidality of childhood physical abuse ($t = 5.98; p < .05$) and sexual abuse ($t = 5.40; p < .05$) were similar to one another, and both were more strongly associated with lifetime suicide attempts than sexual molestation ($t = 2.88; p < .05$) and verbal abuse ($t = 1.68; p = \text{not significant}$). For their study, Joiner et al. (2007) measured sexual molestation as somebody touching the participants’ genitals when the participant did not want them to be touched and measured sexual abuse as being raped.

Furthermore, Afifi et al. (2008) found that childhood victimization accounts for 16% of the variance for suicidal thoughts and 50% of the variance for suicide attempts among women in the general population.

Although there is a dearth of research assessing the relationship between childhood victimization and suicidality among both men and women prisoner populations, the existing studies have similar results as for the general population.

Mandelli, Carli, Roy, Serretti, & Sarchiapone (2011), for example, assessed the influence of childhood trauma on the onset and repetition of non-fatal suicidal behavior with a sample of male prisoners in Italy. Using cluster analyses to cluster the men prisoners into two homogenous groups for exposure to each type of early trauma measured (physical abuse, sexual abuse, and neglect), they found that inmates placed in the cluster with higher frequencies of childhood victimization and neglect were more likely to have exhibited behaviors considered suicidal.

There are also few empirical explanations for why women prisoners report higher rates of attempted suicide than women in the general population. Some researchers posit that the disproportionately high rates of childhood trauma may contribute to the greater prevalence of suicidality among criminal justice-involved adults (Harlow, 1999; Messina
The only published study of victimization and suicidality among women prisoners in the United States assessed the relationship between childhood trauma and suicide attempts. Clements-Nolle et al. (2009) found women prisoners who had attempted suicide in the past and women prisoners who reported they may commit suicide in the future were more likely to have experienced physical abuse, sexual abuse, physical neglect, and emotional neglect in childhood.

Overall, while research indicates significant relationships between childhood victimization and suicidality, the literature is inconsistent regarding the relationships between different types of childhood victimization and suicidality for samples from both the general population and from prisons. For women in the general population, Glowinski et al. (2001) and Brent et al. (1994) found that childhood physical victimization was associated with suicidality but childhood sexual victimization was not. In later studies Joiner et al. (2007) and Affifi et al. (2008) found that physical victimization and sexual victimization were associated with suicidality in the general population. The disparate findings regarding the different types of victimization and their relationships with suicidality are likely due to the researchers studying samples that differ from each other and measuring victimization differently.

The associations of both childhood neglect and childhood support with suicidality are understudied compared to the effects of childhood physical victimization and sexual victimization. In 2000, Tomey, Kaslow, and Croft stated there were no known empirical studies that assess the relationship between neglect and suicidality. Since 2000, Arata, Langhinrichsen-Rohling, Bowers, and O’Farrill-Swails (2005) studied over 300 college
students and found childhood neglect to be associated with suicidality. Brodsky and Stanley (2008) came to the same conclusion when studying the relationships between type of childhood victimization and suicidality for the general population. In a study with African American women, Meadows and Kaslow (2002) found that women who were neglected in childhood become more hopeless, and in turn are more likely to experience suicidality as adults.

The perceived support experienced in childhood may help to explain differences in suicidality; however, there is limited extant research on the relationship between childhood support and suicidality. Kerr, Preuss, and King (2006) found that low support received in childhood is associated with increased adolescent mental health problems, including suicidality. Recent research with prisoners indicates a relationship between lack of support in childhood and suicidality as an adult. Marzano, Hawton, Rivlin, and Faze (2011) conducted a study with women prisoners in England and found that women who attempted suicide were more likely to feel they were not supported in childhood by their family than women prisoners who did not harm themselves. Other recent studies indicate that all categories of childhood victimization as categorized in previous studies were associated with suicidality (c.f., Mandelli et al. 2011(male prisoners); Clements-Nolle et al. 2009 (women prisoners).

This study represents the second (published) investigation of victimization and suicidality with women prisoners in the United States. We build on the important preliminary research of Clements-Nolle and colleagues by assessing the relationship between specific types of childhood victimization and suicidality by using type of victimization as a predictor variable in regression models. We also assess the predictive
role of childhood neglect and childhood support on suicidality. We used a random sample of incarcerated women in North Carolina to answer the following questions:

1. Are histories of childhood physical victimization, childhood sexual victimization, childhood neglect, and childhood support associated with non-fatal suicidal behavior for this sample of incarcerated women?

2. Are women prisoners who report higher frequencies of childhood victimization (physical victimization and sexual victimization) more likely to experience non-fatal suicidal behavior than women prisoners with lower frequencies of childhood victimization?

3. Are women prisoners who report higher frequencies of childhood neglect more likely to experience non-fatal suicidal behavior than women prisoners with lower frequencies of childhood neglect?

4. Are women prisoners who report lower frequencies of support in childhood more likely to experience non-fatal suicidal behavior than women prisoners with higher frequencies of support in childhood?

**Methods**

*Participants*

A random sample of 125 women from two prisons in North Carolina voluntarily participated in the study. One of the prisons is a maximum, medium, and minimum level facility that holds approximately 1,300 prisoners and the other prison is a minimum security prison that holds approximately 200 prisoners. There were 630 potential participants (women scheduled to be released from prison 30 – 120 days after the data collection period) of which 229 were randomly sampled. The purpose of this random
sampling was simply to shorten the list of eligible participants to then randomly select women from at the prisons. Of those 229 potential participants, 150 women were randomly selected and asked to participate, and 125 women agreed to do so yielding an 83% response rate. To be eligible, the prisoner had to be between 30 and 120 days from release, at least 18 years old, and cognitively functioning to the extent that they were able to indicate they understood the nature of the study and what being a study participant entailed. All procedures were approved by the Florida State University and North Carolina Department of Correction Human Subject Review Boards.

Five members of the research team conducted the interviews by reading out loud the measurements and writing down the participants’ responses. Two of the interviewers have a Ph.D. in Social Work, one has a Ph.D. in Community Psychology, and two have a Masters of Social Work degree.

The demographics and mean victimization scores for the sample are included in Table 1. The average age for the sample was 34 (SD = 9.94) with a range of 19-62. Sixty-six participants were Caucasian (52.8%), 54 participants were African American (43.2%), and five participants were Hispanic (4%).

Measures

Predictor Variables:

Self-Reported Frequency of Childhood Trauma. The researchers used a 20-item version of the Childhood Trauma Questionnaire (CTQ) to measure childhood victimization (Bernstein, Fink, Handelsman, & Foote, 1994). When completing the CTQ, the participant was asked how frequently certain events happened to them as a child on a five point Likert scale, ranging from ‘Never’ to ‘Very Frequently’. For example, one item on
the CTQ states, “When I was growing up, people in my family hit me so hard that it left me with bruises or marks” and another item states, “When I was growing up, someone threatened to hurt me or tell lies about me unless I did something sexual to them.” The total CTQ score is based on the cumulative frequency of childhood victimization. Additionally, self-reported frequency of childhood physical victimization, childhood sexual victimization, childhood neglect, and childhood support are four of the subscales within the CTQ.

The reliability and validity of the CTQ – including criterion validity, convergent validity, and discriminant validity – has been consistently evaluated with research on groups such as psychiatric patients and college students (Bernstein et al., 2003; Bernstein & Fink, 1998). The CTQ has high internal consistency for this study ($\alpha = .943$). The internal consistency for the four subscales of interest for this study are: sexual abuse subscale is $\alpha = .977$, support is $\alpha = .937$, physical abuse subscale is $\alpha = .920$, and neglect is $\alpha = .686$.

The CTQ subscales measure the frequency of each construct – 0 represents no presence of the construct and the upper bound represents high frequency of the construct. The sample’s Mean score for the physical abuse subscale was 7.54 (Range = 0-20; SD = 7.54), the Mean score for the sexual abuse subscale was 6.26 (Range = 0-20; SD = 6.26), the Mean score for the neglect subscale was 1.82 (Range = 0-15, SD = 3.11), and the Mean score for the Support subscale was 16.28 (Range 0-20, SD = 5.47).

**Demographics.** Age is a continuous variable based on the participants’ age at the time of data collection. Race is a dichotomous variable portraying whether the participant is a minority (coded as 1) or otherwise (0). Race and age were considered important to
include in the models because prior researchers have found an association between these variables and non-fatal suicidal behavior (Clements-Nolle et al., 2009; Moscicki, 1995). 

**Substance Use Problems.** Substance use problems have also been associated with suicidality in prison and nonprison populations (Clements-Nolle et al. 2009; Spokas, Wenzel, Brown, & Beck, 2012; Spokas, Wenzel, Stirman, Brown, & Beck, 2009).

Whether the participant has a substance use problem is defined as whether or not they meet the criteria for a substance abuse disorder as assessed by the Substance Abuse Module (SAM) (Cottler, Robin, & Helzer, 1989). The SAM is a 38-item measure that assesses DSM-IV diagnostic criteria for current and lifetime substance use disorders. The reported reliability kappa values range from .82-.84. For this study, whether or not the participant met the criteria for a substance abuse disorder is a dichotomous variable based on responses to the SAM.

**Outcome Variable**

**Non-Fatal Suicidal Behavior.** Non-Fatal Suicidal Behavior was measured using the psychiatric information section of the Addiction Severity Index (ASI) (McLellan, 1992). The ASI is designed to address many potential problem areas that may co-occur with substance use disorders, including psychiatric problems. Although the primary purpose of the ASI is to assess substance use, the psychiatric subscale provided applicable suicidality data. When completing this scale, the researchers asked participants whether they have attempted suicide in the past 30 days and in their lifetime. No participants reported they attempted suicide in the past 30 days; thus, the outcome variable for this study is whether the participant has ever attempted suicide, which is our definition of non-fatal suicidal behavior.
Analyses

Binary logistic regression allows for the assessment of the relationship between multiple predictor variables (age, race, substance abuse disorder, childhood victimization, childhood neglect, and childhood support) and a dichotomous outcome variable (whether the participant has attempted suicide) (Hosmer & Lemeshow, 2000; Kutner, Nachtsheim, Neter, & Li, 2005). The logistic regression produces an odds ratio. Odds ratios are interpretable in terms of the probabilities of the dependent variable (whether the participant had attempted suicide) being equal to 1 when all other variables in the model are held equal. The data in this study fit the assumptions of the logistic regression that the outcome variables were binary and the sample was independently and randomly selected.

We used logistic regression analyses to assess the influence of physical victimization, sexual victimization, neglect, and childhood support on whether the participants have ever attempted suicide. Prior to analyzing the logistic regression analyses, we calculated the Hosmer and Lameshow statistic (Hosmer & Lameshow, 1989) to determine the models’ goodness of fit. All Hosmer and Lameshow statistics were not significant, indicating goodness of fit for all of the regression models.

Whether or not the participant ever attempted suicide is the dependent variable in all of the Logistic Regression models. The predictor variables for Model 1 are age, race, substance abuse disorder, and self-reported frequency of childhood physical victimization. The predictor variables for Model 2 are age, race, substance abuse disorder, and self-reported frequency of childhood sexual victimization. The predictor variables for Model 3 are age, race, substance abuse disorder, and self-reported frequency
of childhood neglect. The predictor variables for Model 4 are age, race, substance abuse disorder, and self-reported frequency of positive support received in childhood.

Predictor variables were entered using a forced entry approach. For each model we examined the following: case to predictor variable ratio, multicollinearity by examining the Variance Inflation Factors, model fit, and relationships between predictor variables and the dependent variable.

Results

Four binary regression models were conducted to answer the following four research questions: 1) Are histories of childhood physical victimization, childhood sexual victimization, childhood neglect, and childhood support associated with non-fatal suicidal behavior for this sample of incarcerated women? 2) Are women prisoners who report higher frequencies of childhood victimization (physical victimization and sexual victimization) more likely to experience non-fatal suicidal behavior than women with lower frequencies of childhood victimization? 3) Are women prisoners who report higher frequencies of childhood neglect more likely to experience non-fatal suicidal behavior than women with lower frequencies of childhood neglect? 4) Are women prisoners who report lower frequencies of support in childhood more likely to experience non-fatal suicidal behavior than women with higher frequencies of support in childhood?

The first regression model had four predictor variables: age, race, substance abuse disorder, and self-reported history of childhood physical victimization. The 122 cases for the analysis – three cases had missing data and were excluded from the analysis – satisfied the minimum case to predictor variable ratio for logistic regression (Hosmer & Lemeshow, 2000). There are 122 cases and 4 predictor variables, for a ratio of 30.5:1.
Multicollinearity was assessed by examining the Variance Inflation Factors (VIF; Hosmer & Lemeshow, 2000). A VIF around 10.0 indicates problems of multicollinearity. The VIFs for the variables in this analysis ranged from 1.034 – 1.119; multicollinearity is not a problem.

The presence of a relationship between the dependent variable and the combination of predictor variables is based on the statistical significance of the model chi-square for the -2 log likelihood differences between the model with the predictor variables and the model without the predictor variables (Hosmer & Lemeshow, 2000). The probability of the model chi-square (20.594) was $p < .001$. The null hypothesis that there is no difference between the model with only a constant and the model with the predictor variables is rejected, supporting the existence of a relationship between the predictor variables and the dependent variable.

We examined the relationships between the predictor variables and the dependent variable by analyzing the significance of the Wald test of the beta coefficient and the interpretations of the odds ratios for significant relationships. In model 1, as indicated in Table 2, having a substance abuse disorder (OR = 3.018, $p = .046$) and history of physical victimization (OR = 1.123, $p = .001$) were both significant predictors of suicide attempts. This indicates that women with substance use disorders were approximately three times more likely to have attempted suicide. A one-unit increase in frequency of self-reported childhood physical victimization was associated with a 12.3% increased likelihood of having attempted suicide, all else being equal.

The second regression model assessed age, race, substance abuse disorder, and frequency of childhood sexual victimization as the predictor variables. The 122 cases for
the analysis satisfied the minimum case to predictor variable ratio for logistic regression.
Three cases were missing data and excluded from the analysis. There are 122 cases and 4
predictor variables, for a ratio of 30.5:1. There were no problems of multicollinearity.
The VIFs for the predictor variables ranged from 1.025-1.084.

The logistic regression model indicated a relationship between the dependent
variable and the combination of predictor variables. The probability of the model chi-
square (26.526) was $p < .001$. The null hypothesis that there is no difference between the
model with only a constant and the model with the predictor variables is rejected.
Women with substance use disorders were approximately 4.8 times more likely to have
attempted suicide (OR = 4.9, $p = .007$). A one-unit increase in frequency of childhood
sexual victimization was associated with being 12.2% more likely to have attempted
suicide (OR = 1.122, $p < .001$), all else being equal.

The third regression model assessed age, race, substance abuse disorder, and
childhood neglect as the predictor variables. The 123 cases for the analysis satisfied the
minimum case to predictor ratio for logistic regression. There were 123 cases and 4
predictor variables, for a ratio of 30.75:1. There were no problems of multicollinearity.
The VIFs for the predictor variables ranged from 1.063-1.096.

The logistic regression model indicated a relationship between the dependent
variable and the combination of predictor variables. The probability of the model chi-
square (24.525) was $p < .001$. The null hypothesis that there is no difference between the
model with only a constant and the model with the predictor variables is rejected.
Women with a substance abuse disorder in this model were approximately 3.7 times more
likely to have attempted suicide (OR = 3.655; $p = .022$). A one-unit increase in
frequency of childhood neglect was associated with being 32.1% more likely to have attempted suicide (OR = 1.321, p < .001), all else being equal.

The fourth regression model assessed age, race, substance abuse disorder, and support in childhood as the predictor variables. The 123 cases satisfied the minimum case to predictor variable ratio, which is 30.75:1. There were no problems of multicollinearity. The VIFs for the predictor variables ranged from 1.097 – 1.125.

The logistic regression model indicated a relationship between the dependent variable and the combination of predictor variables. The probability of the model chi-square (23.217) was p < .001. The null hypothesis that there is no difference between the model with only a constant and the model with the predictor variables is rejected. Women with a substance abuse disorder in this model were approximately 3.7 times more likely to have attempted suicide (OR = 3.743, p = .019). A one-unit increase in frequency of support in childhood was associated with being 14.4% less likely to have ever attempted suicide (OR = .856, p < .001), all else being equal.

Overall, the binary logistic regression models indicated that substance abuse, childhood victimization, childhood neglect, and childhood support are all associated with non-fatal suicidal behavior. Women in the sample who met the criteria for a substance abuse disorder were more likely to have attempted suicide at least once in their lives than women who did not. Women in the sample who experienced childhood physical victimization or childhood sexual victimization were more likely to have attempted suicide than women who had not experienced childhood victimization. Additionally, frequency was an important factor when assessing this relationship between childhood victimization and non-fatal suicidal behavior – women who reported more frequent
childhood victimization were more likely to have attempted suicide than women who reported less frequent childhood victimization. Finally, both childhood support and childhood neglect were significantly associated with non-fatal suicidal behavior. Women in the sample who reported more frequent childhood support were less likely to have attempted suicide, and women in the sample who reported more frequent childhood neglect were more likely to have attempted suicide. Frequency of childhood neglect had the largest effect size of all the predictor variables.

**Discussion**

The primary purposes of this study were to add to the knowledge base on the influence of childhood victimization, childhood neglect, and childhood support on suicidality for women prisoners by: 1) assessing the associations between different types of childhood experiences and suicidality, 2) evaluating whether childhood neglect and childhood support are associated with suicidality, 3) determining whether women prisoners with higher frequencies of childhood victimization are more likely to have experienced suicidality than women with lower frequencies, and 4) determining whether women prisoners with higher frequencies of childhood neglect, and lower frequencies of support, are more likely to have experienced suicidality. Consistent with other research on suicidality (Clements-Nolle et al., 2009), we found women who experienced childhood physical victimization, childhood sexual victimization, or childhood neglect were more likely to have attempted suicide at least once in their lives. We also found that women who perceived themselves as being supported in childhood were significantly less likely to have experienced suicidality.
We found that higher frequencies of both childhood physical victimization and childhood sexual victimization were associated with a higher likelihood of suicidality. Frequency was also important when assessing the influence of neglect and support on suicidality. Women prisoners in this sample who reported higher frequencies of neglect were more likely to experience suicidality, and higher frequencies of childhood support were associated with a reduced chance of having experienced suicidality.

The results of this study add to the growing body of literature on childhood victimization and suicidality in general (Dube, Anda, Felitti, Chapman, Williamson, & Giles, 2001; Enns, Cox, Afifi, De Graaf, Have, & Sareen, 2006) and suicidality for prisoner populations in particular (Clements-Nolle et al., 2009; Mandelli et al., 2011). Clements-Nolle et al. conducted an important study in 2009 that assessed the relationship between childhood victimization and past suicide attempts and found a significant relationship between the two constructs. This particular study builds on their work by including four different regression models with the two different types of childhood victimization, childhood neglect, and childhood support as the predictor variables. Thus, we were able to look at the influence of the two primary types of childhood victimization (physical victimization and sexual victimization), along with neglect and support, on suicidality in a systematic and robust manner. We were also able to build on previous work assessing predictors of suicidality for women prisoners by analyzing the influence of frequencies of childhood victimization, neglect, and childhood support. This allows a more nuanced evaluation of the relationship between childhood experiences and suicidality and potentially a more targeted and specific approach when developing
Non-Fatal Suicidal Behavior among Women Prisoners

programs to clinically work with women prisoners who have suffered childhood victimization and neglect.

Other important clinical considerations arose from the results of this study involving the finding that frequency of childhood victimization and frequency of childhood neglect is associated with a higher likelihood of suicidality for this particular sample of incarcerated women. Trauma researchers have long recognized that many factors contribute to the pervasive and lasting negative consequences of childhood victimization and neglect – and frequency does not necessarily predict pervasive and intrusive consequences. However, our data suggests frequency may be clinically relevant for women prisoners and thus intervention development should occur with this awareness in mind. For example, as suicide prevention interventions are developed and refined for women prisoners, interventions should be tested that consider different levels of treatment or different dosage of treatment. The study results suggest that treatment planning should include assessment of not only a history of childhood victimization and neglect, but the frequency of these experiences and the extent to which the related trauma is still intrusive to the women’s functioning.

Study results also suggest that perceived childhood support from childhood caregivers may perform a protective function against suicidality for these women. There are two potential clinical implications that arise from this result. First, if positive support in childhood is in fact protective, positive support in adulthood may also be protective. This suggests that intervention development and testing should incorporate social support as a possible mechanism in preventing suicidality. Naturally occurring support has been found to be effective in terms of reducing recidivism and improving postrelease outcomes.
for male prisoners (c.f., for a review Pettus-Davis, Howard, Roberts-Lewis, & Scheyett, 2011). Although these study results do not speak to the potential for preventive interventions for children of women prisoners, the results suggest further research into how women prisoners with children may provide positive support to their children as a targeted suicidality prevention effort. There are existing parenting programs in prisons throughout the United States, many of which are effective in teaching women prisoners the skills and thoughts necessary to be successful and positive parents upon release (Tripodi, Bledsoe, Kim, & Bender, 2011). Suicidality programs during incarceration has the potential to offer women prisoners an opportunity not only to recover from their own emotional problems but to learn and use positive parenting practices that can support positive future outcomes of their children.

Also of importance in this study, although not one of our primary research questions, is the relationship between substance abuse and suicidality. Women prisoners in this sample meeting the criteria for a substance use disorder were significantly more likely to report suicidality. Although we are not able to establish temporal order between substance abuse and suicidality, the two are highly correlated, so we recommend future researchers conduct a study determining whether the onset of substance abuse predicts suicidality for women prisoners.

The strengths and limitations of this study should be considered when interpreting the findings. The primary strength of this study is that the sample was randomly selected from a list of all women eligible to participate. This allows generalization from our sample to the population of women close to release from the two prisons in North Carolina where the sample was drawn. Additionally, those with severe mental illness
were not excluded from our sample like many studies with prisoners, again, allowing our sample to adequately represent the population. A third strength is that the CTQ allowed us to look at the frequency of childhood victimization as a continuous variable, rather than simply asking the participants if they were victimized as children.

The primary limitation to this study is that we were not able to assure temporal order between childhood victimization and suicide attempts. It is possible that the suicide attempt preceded the childhood victimization for some of the participants. We also suspect that mental health problems act as a mediating variable and helps explain the relationships between childhood victimization, neglect, and support on suicidality. However, we were not able to assess psychiatric diagnoses as a mediating variable because of temporal issues – we had no way of knowing whether the participant was diagnosed before or after their suicide attempt. Additionally, while the 83% response rate can be considered a strength to the study, we do not have information on the 17% who declined to participate. It is unknown how this affects our sample. The third limitation is that the information comes from self-reports. As Mandelli et al. (2011) point out, though the CTQ has been shown to be reliable and valid, it does contain the following limitations: 1) it does not provide a reliable estimate of the presence of victimization and 2) it does not provide information on the severity and duration of each type of victimization.

Future researchers should take careful steps to assure temporal order between childhood victimization and suicide attempts, perhaps by asking the participants if they have attempted suicide since the age of 18 and using a childhood victimization measure for victimization such as the CTQ. Additionally, obtaining information from women in
prison from different states in different geographic areas of the United States would make the sample more generalizable to all women in U.S. prisons. This study looked at two prisons in one state, so generalization to all women prisoners in the US cannot be confirmed. Finally, although substance use disorders are included in these regression models as predictor variables, future researchers should look at both substance use problems and psychiatric diagnoses as mediating variables, to assess whether substance use and mental health problems is a link between childhood victimization and suicidality for women prisoners.

This study was supported by a grant from the National Institute of Mental Health (Grant #P30 MH079920). Special thanks to David Edwards of the North Carolina Department of Correction and both the administration and staff at the two prisons where data collection took place.
References


Non-Fatal Suicidal Behavior among Women Prisoners


Table 1: Characteristics of the Sample

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at incarceration (N=125)</td>
<td>34.3</td>
<td>9.94</td>
</tr>
<tr>
<td>CTQ Total Score (N=121)</td>
<td>19.21</td>
<td>19.03</td>
</tr>
<tr>
<td>CTQ Physical Abuse Subscale (N=122)</td>
<td>7.54</td>
<td>6.53</td>
</tr>
<tr>
<td>CTQ Sexual Abuse Subscale (N=122)</td>
<td>6.26</td>
<td>8.22</td>
</tr>
<tr>
<td>CTQ Neglect Subscale (N=123)</td>
<td>1.82</td>
<td>3.11</td>
</tr>
<tr>
<td>CTQ Support Subscale (N=123)</td>
<td>16.28</td>
<td>5.47</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Race (N=125)</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>54</td>
<td>43.2</td>
</tr>
<tr>
<td>Caucasian</td>
<td>66</td>
<td>52.8</td>
</tr>
<tr>
<td>Hispanic</td>
<td>5</td>
<td>4.0</td>
</tr>
</tbody>
</table>

| Substance use disorder (N=124)          | 77        | 62.1    |
| Attempted suicide (N=124)               | 32        | 25.8    |
## Table 2: Childhood Victimization (CTQ Physical Abuse Subscale and Sexual Abuse Subscale) and Suicide Attempts

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Model 1</th>
<th></th>
<th></th>
<th>Model 2</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B (SE)</td>
<td>OR (95%CI)</td>
<td>P</td>
<td>Wald</td>
<td>B (SE)</td>
<td>OR (95%CI)</td>
</tr>
<tr>
<td>Age</td>
<td>.026(.02)</td>
<td>1.027 (.979-1.076)</td>
<td>.272</td>
<td>1.207</td>
<td>.016(.03)</td>
<td>1.016 (.968-1.067)</td>
</tr>
<tr>
<td>Race</td>
<td>.002(.47)</td>
<td>1.002 (.396-2.535)</td>
<td>.996</td>
<td>.000</td>
<td>-.205(.49)</td>
<td>.815 (.314-2.116)</td>
</tr>
<tr>
<td>Substance Abuse Disorder</td>
<td>1.104(.55)</td>
<td>3.018 (1.019-8.937)</td>
<td>.046</td>
<td>3.875</td>
<td>1.581(.58)</td>
<td>4.861 (1.554-15.201)</td>
</tr>
<tr>
<td>CTQ-Physical Abuse Subscale</td>
<td>.116(1.13)</td>
<td>1.123 (1.050-1.202)</td>
<td>.001</td>
<td>11.324</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>CTQ-Sexual Abuse Subscale</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>.015(.03)</td>
<td>1.122 (1.060-1.188)</td>
</tr>
</tbody>
</table>
### Table 3: Childhood Neglect and Support (CTQ Neglect Subscale and Support Subscale) and Suicide Attempts

#### Models 3 and 4

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B (SE)</td>
<td>OR (95%CI)</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>.015 (.03)</td>
<td>1.015 (0.967-1.065)</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td>.153 (.48)</td>
<td>1.166 (0.454-2.993)</td>
</tr>
<tr>
<td><strong>Substance Abuse Disorder</strong></td>
<td>1.296 (.57)</td>
<td>3.655 (1.208-11.059)</td>
</tr>
<tr>
<td><strong>CTQ-Neglect Subscale</strong></td>
<td>.278 (.077)</td>
<td>1.321 (1.136-1.536)</td>
</tr>
<tr>
<td><strong>CTQ-Support Subscale</strong></td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Stephen J. Tripodi, PhD
Assistant Professor
Florida State University
College of Social Work
296 Champions Way
University Center C
Tallahassee, Florida 32306
stripodi@fsu.edu

Eyitayo Onifade, PhD
Assistant Professor
Florida State University
College of Social Work
296 Champions Way
University Center C
Tallahassee, Florida 32306
eonifade@fsu.edu

Carrie Pettus-Davis, PhD
Assistant Professor
Washington University in St. Louis
Brown School
Campus Box 1196
One Brookings Drive
St. Louis, Missouri 63130
cpettusdavis@brownschool.wustl.edu