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Psychopathy and Suicidality in Female Offenders: Mediating Influences of Personality and Abuse

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Abstract

The influence of personality and childhood abuse on suicidal behaviors and psychopathy was examined among female prisoners. Scores on the affective/interpersonal component (Factor 1; F1) and the antisocial deviance (Factor 2; F2) component of psychopathy were obtained from the Psychopathy Checklist—Revised (R. D. Hare, 1991). Suicide attempt and childhood physical and sexual abuse history were coded from interviews and prison files, and personality was assessed using the Multidimensional Personality Questionnaire (A. Tellegen, in press). Suicide attempts were positively associated with F2 and negatively associated with F1, and each factor accounted for unique variance in suicidality. Path analyses demonstrated that personality mediated the effects of physical abuse on F2, but sexual abuse accounted for unique variance in both suicide attempts and F2. Abuse and personality accounted for minimal variance in F1. These results are discussed in relation to the identification of individuals at risk for both self- and other-harm behaviors.

Keywords

psychopathy; suicide; female prisoners; personality; abuse

Given the increasing rates of criminal conviction and incarceration among women (Jordan, Schlenger, Fairbank, & Caddell, 1996), researchers have focused greater attention on this group of offenders. Most studies have confirmed that women are at high risk for suicidal behaviors during incarceration, and researchers have reported prevalence rates of 25% to 50% for prior suicide attempts in female prison samples (Blaauw, Arensman, Kraaij, Winkel, & Bout, 2002). Thus, this population of inmates is particularly worthy of study because of high rates of both self-harm and other-harm behaviors. In addition, an extensive research literature within the past several years has confirmed a strong association between antisocial and suicidal behaviors, particularly among externalizing men (Ivanoff & Jang, 1991; Marcus & Alcabes, 1993); however, minimal research has been conducted specifically with female criminal samples (see Verona & Vitale, in press).

The current study is the first to explicitly examine relationships between suicidal behavior and antisocial–psychopathic tendencies in a female prison sample. The goal of this study was to

extend previous research on this connection by attempting to understand whether psychopathic personality traits, in contrast to antisocial deviance per se, would be related to suicidal behaviors in women. Specifically, we examined the differential relationships of the affective–interpersonal (primary psychopathy traits) and antisocial deviance (akin to antisocial personality) components of psychopathy with suicide attempts in this population. A second aim was to examine potential common risk factors for suicidal and antisocial behaviors. The research literature supports the putative influence of childhood history of abuse (Meadows & Kaslow, 2002) and of personality traits (see Verona & Patrick, 2000) on both suicidal and antisocial behaviors. We analyzed these risk factors together in a multivariate structural model in order to better assess the unique and combined contributions of abuse and personality to antisocial and suicidal behaviors and to their co-occurrence.

Antisociality, Psychopathy, and Suicide Risk

Most of the existing literature on the antisociality–suicide link has focused exclusively on suicide risk among persons with a diagnosis of antisocial personality disorder (APD; Black, 1998; Lester, 1998) or persons exhibiting general antisocial deviance (Robins, 1966; Woodruff, Clayton, & Guze, 1972). *Diagnostic and Statistical Manual of Mental Disorders (DSM)* criteria for APD relate substantially to ratings of psychopathy as indexed by Hare’s (1991) Psychopathy Checklist—Revised (PCL–R), which is currently the dominant method for assessing psychopathy in clinical samples. Traditionally, the PCL–R has been viewed as encompassing two correlated factors (Hare et al., 1990; see also Harpur, Hare, & Hakstian, 1989): Factor 1 (F1) is marked by items reflecting the emotional and interpersonal features of psychopathy; Factor 2 (F2) consists of items dealing with stimulation-seeking, impulsivity, aggressiveness, and other antisocial behavior tendencies.

The diagnosis of APD within the *DSM* is related asymmetrically to the two original factors of the PCL–R: APD is substantially related to the antisocial and aggressive features (F2) of psychopathy, but not to the affective–interpersonal characteristics (F1; Hare, 1991; Hare et al., 1990). Thus, the extant research on suicidal behaviors and antisociality is limited in that very little research has examined associations between suicidal behavior and primary traits of psychopathic personality (e.g., egocentric and manipulative interpersonal style, shallow affect, lack of remorse) that Cleckley (1976) emphasized in his seminal monograph, *The Mask of Sanity*. In fact, Cleckley maintained that individuals exhibiting such features are characteristically immune to committing suicide, and he included “suicide rarely carried out” (p. 359) as one of the key characteristics of primary psychopathy. Thus, it may be the case that suicidality relates to antisocial deviance but not to primary psychopathic traits. Only one prior study (Verona, Patrick, & Joiner, 2001) examined suicide risk in relation to these distinct facets of psychopathy, and this study was conducted with male offenders. As predicted, in this study it was found that PCL–R F2 was significantly related to history of suicide attempts among male prison inmates. PCL–R F1 was negatively related to suicidal behavior, although this association failed to reach statistical significance. The primary goal of the current study was to replicate and extend this research to women.

Female Psychopathy Correlates

Although men are more likely to show characteristics of psychopathy than women, Cleckley (1976) included female clientele among the prototype cases in *The Mask of Sanity*, suggesting that the full syndrome of psychopathy occurs in both genders. Recent work on psychopathy in women has shown adequate reliability and internal consistency for the PCL–R in women, and researchers have been able to broadly replicate the two-factor structure (Salekin, Rogers, & Sewell, 1997; see Verona & Vitale, in press), although other factor structures have been validated (Warren et al., 2003).¹ Other research findings also suggest that many of the

personality and behavioral features associated with psychopathy in males generalize to females. Specifically, higher scores on the PCL–R in women are associated with greater numbers of prior convictions for violent and nonviolent offenses (Vitale, Smith, Brinkley, & Newman, 2002), prior arrests (Rutherford, Cacciola, Alterman, & McKay, 1996; Weiler & Widom, 1996), and self-reported violence (Weiler & Widom, 1996).

However, preliminary research suggests some differences in the correlates of the PCL–R factors for women as compared with men (see Cale & Lilienfeld, 2002). For example, Salekin, Rogers, Ustad, and Sewell (1998) found that recidivism was related only to F1 scores in women, whereas it was related to both F1 and F2 in men. Zagon and Jackson (1994) reported that, among college students, empathy was negatively related to self-reported psychopathy among women but not men, although they did not test for differences between correlations. More relevant to the current study, no research to date has investigated the association between suicidal behavior and psychopathy facets in women. Given the high rates of prior suicidality in female versus male prisoners (Blaauw et al., 2002), this investigation seems warranted. Thus, although the psychometric validity of the PCL–R in women has been generally established, further research on its construct validity is necessary.

Suicide Risk, Psychopathy, and Abuse History

Descriptive reports of female prisoners suggest that more than one third of these women have been physically or sexually victimized (Snell & Morton, 1994; Warren et al., 2002). In addition, the relationship between history of abuse and criminality has been documented in a number of studies (Berliner & Elliott, 1996; Trickett & McBride-Chang, 1995). With regard to psychopathy, Weiler and Widom (1996) found that those with a history of childhood abuse and/or neglect had significantly higher PCL–R scores than nonabused controls, despite demographic characteristics and criminal history controlling for. These researchers did not examine the differential relationships between the two factors of the PCL–R and abuse. Preliminary research in men suggests that PCL–R F2, but not F1, is related generally to familial–environmental variables involving childhood adversity (Harpur et al., 1989).

Abuse history may also play a role in the development of suicidality and self-harm behaviors across different populations (Arboleda-Florez & Wade, 2001; Johnson et al., 2002), including jail detainees (Blaauw et al., 2002) and female prisoners (Snow, 1997). In the current study, we examined the contribution of childhood abuse history to accounting for criminal and suicidal behaviors, and their co-occurrence, within a female prison sample. We also wanted to extend prior work by analyzing the differential associations between childhood physical and sexual abuse and psychopathology. Although individuals often experience both, preliminary research suggests that physical abuse and sexual abuse have unique correlates (Talbot, Duberstein, King, Cox, & Giles, 2000; Techakasem & Kolkijkovin, 2001). For example, sexual abuse seems to be more associated with subsequent psychopathology and changes in affect (Talbot et al., 2000; Tong, Oates, & McDowell, 1987), whereas physical abuse is more specifically related to increases in conduct problems and aggressive behavior (Techachasen & Kolkijoven, 2001). Other work suggests that sexual abuse captures more variance in suicidal outcomes than does physical abuse (Bryant & Range, 1995; Nelson et al., 2002). On the basis

¹Other factor structures, including a three-factor (Cooke & Michie, 2001) and a four-factor (or revised two-factor) model (Hare, 2003) have been proposed in the literature. The first of these revised models is a hierarchical three-factor model that separates F1 into two distinct factors, arrogant and deceitful interpersonal style (e.g., “glib/superficial charm,” “grandiosity”) and affective features (e.g., “shallow affect,” “lacking in remorse or guilt”), and several of the items tapping specific deviant behaviors are deleted from the original F2. Hare (2003) proposed a revision of the two-factor model, wherein each factor encompasses two facets (thus, four total factors). Three of these facets are identical to the factors proposed by Cooke and Michie, and the fourth facet includes several of the items deleted by Cooke and Michie, labeled “antisocial.” Given the preliminary nature of the current study, our primary hypotheses focused on the two original PCL–R factors (F1 and F2) because of the substantial literature that exists on the correlates of these factors (e.g., Hare, 1991) and because we wished to make comparisons with our prior work (Verona et al., 2001).

of this research, we thought it important to examine these forms of abuse as separate risk factors in a structural modeling framework.

Combined Personality and Abuse Effects on Suicide Attempts and Psychopathy

The similarity between the personality correlates of suicidality and antisocial-aggressive behaviors in men (see Verona & Patrick, 2000, for a review) has led to the suggestion that personality dispositions underlie risk for both antisocial and suicidal behaviors. Consistent with this, Verona et al. (2001) found that male prisoners' scores on Negative Emotionality and low Behavioral Constraint, or impulsivity, as assessed by the Multidimensional Personality Questionnaire (MPQ; Tellegen, in press), were related to antisocial features (i.e., PCL-R F2) and prior suicide attempts. Moreover, these traits accounted for the relationship between antisocial and suicidal behaviors. On the other hand, MPQ scales that correlated with PCL-R F1 did not show strong relationships with suicide attempts in this male sample.

Only a few researchers have examined the combined contributions of both personality and history of abuse on psychopathology or have examined how they converge to increase risk. Recently, Egeland, Yates, Appleyard, and van Dulmen (2002) confirmed a conceptual model in which the development of emotional dysregulation and feelings of alienation mediated the effects of childhood maltreatment on antisocial behavior. These authors also made the point that different forms of maltreatment (physical abuse vs. psychological neglect in their study) make differential contributions to the prediction of psychopathological outcomes. In the personality disorder literature, Trull (2001) reported that physical and sexual abuse seemed to be associated with the personality traits of negative affectivity and behavioral disinhibition, but personality and abuse made independent contributions to borderline features. Morey and Zanmarini (2000) also reported that childhood abuse predicted residual variance in borderline personality traits not accounted for by normal personality. Unfortunately, the research by Trull and Morey and Zanmarini did not include examination of the differential contributions of sexual and physical abuse on psychopathology.

In effect, the evidence is somewhat mixed as to the combined roles of abuse and personality on psychopathology risk. Another goal of the current research was to estimate, in a path analytic model, the unique and combined contributions of abuse history and personality in accounting for suicidal and antisocial behaviors. Our interest was in examining the potential mediating role of personality in accounting for links between abuse and these two forms of destructive behaviors in female prisoners. In addition, we were interested in modeling the differential effects of physical and sexual abuse on self- and other-harm behaviors.

Current Study

Besides attempting to replicate the findings from Verona et al. (2001), we extended existing published work by examining the unique and combined associations between physical abuse, sexual abuse, and personality and suicide attempts and the two facets of psychopathic personality in female prisoners. This was accomplished through multivariate path analyses that predicted suicidal behaviors and psychopathy from the two types of childhood abuse and personality variables.² Our goals and predictions were as follows:

²We use the term *prediction* or *predictors* in this article to be consistent with our conceptual model and our analytical strategy, even though we acknowledge that "postdiction" may be the more appropriate term to use in our cross-sectional study.

1. Examine differential relationships between the two psychopathy factors and suicide attempts: PCL–R F2 would relate positively to suicide attempts, whereas PCL–R F1 would relate negatively to suicide attempts (Cleckley, 1976; Verona et al., 2001).
2. Analyze the nature of the combined impact of abuse and personality on antisocial behavior and suicide attempts: MPQ personality traits of high Negative Emotionality and low Behavioral Constraint would mediate the effects of physical and sexual abuse on suicide attempts and PCL–R F2 (antisocial deviance; Egeland et al., 2002).
3. Account for the co-occurrence of antisociality and suicide attempts: The relationship between suicide attempts and antisocial deviance would be accounted for by common risk deriving from abuse history and personality traits.

Method

Participants

Participants were 226 female inmate residents of the Federal Correctional Institution in Tallahassee, Florida. Volunteers were recruited randomly from the master prison roster, subject to no imminent release date. Participants were excluded if they had file evidence of a current cognitive disorder that might interfere with their participation, that is, mental retardation, cognitive disorder, schizophrenia or other psychosis, and bipolar disorder. Those demonstrating conversational competency in English and the ability to read aloud a text description of the study were scheduled for further participation and supplied informed written consent. The mean age of participants in the current study was 31.9 years ($SD = 6.8$). Racial composition of the sample was as follows: 29.6% ($n = 67$) Caucasian, 57.1% ($n = 129$) African American, 10.6% ($n = 24$) Hispanic, 0.4% ($n = 1$) Asian, and 2.2% ($n = 5$) other. The average inmate had obtained at least a high school diploma. These sample characteristics corresponded closely to census figures for the inmate population as a whole.

Measures and Procedures

PCL–R—Each inmate underwent a structured diagnostic interview designed to assess for features of psychopathy as defined by the PCL–R. This information, in conjunction with the inmates' file records, was used to assign ratings on the PCL–R and its two factors, the affective–interpersonal (F1) and antisocial–impulsive behavior (F2) factors. Two independent raters, the primary interviewer and a second assessor who viewed a videotape of the interview, completed diagnostic ratings. All raters were advanced undergraduate or graduate students in psychology who had undergone extensive training in the use of the PCL–R. Interrater reliability for the PCL–R was evaluated by intraclass correlation coefficients (Shrout & Fleiss, 1979). Single-rater coefficients for PCL–R F1, F2, and total scores were .85, .85, and .91, respectively; coefficients for the mean of two raters were .92, .92, and .94, respectively. The intraclass correlation coefficients were comparable for doctoral level and senior undergraduate students. For purposes of analysis, PCL–R scores were averaged across the two independent assessors. For the sample as a whole, PCL–R summary statistics were as follows: PCL–R total score, $M = 20.7$, $SD = 7.8$, range = 1.6–37.5; PCL–R F1, $M = 8.4$, $SD = 3.9$, range = 0–16; and PCL–R F2, $M = 9.8$, $SD = 3.9$, range = 0.5 – 17.5.³

Suicide attempt history—A history of suicide attempts among participants was determined on the basis of two independent sources of information. During interviews, participants were

³In our sample, 29 women (12.8%) had a total PCL–R score of 30 or above, and 36 (15.9%) had a total score of 29 or above. The mean total score on the PCL–R was 20.7. These base rates and mean scores are similar to those reported by Salekin et al. (1997; 16% of female inmates in this sample had total scores of 29 or above on the PCL–R) and by Salekin et al. (1998), who reported a mean total score of 17.9 on the PCL–R for incarcerated women in their sample.

asked directly if they had ever attempted suicide or been hospitalized for a suicide attempt. Inmates' prison files, which included presentence investigations, were also reviewed. Of the 226 women, 56 reported a history of suicide attempts (at least one past suicide attempt) during the interview, and most of these ($n = 34$) had collateral information in prison files that confirmed their report of past suicide attempts. Only one woman who did not report a history of suicidal behavior in the interview had evidence of prior suicide attempts in her prison file, and she was included in the suicide attempt history group (Verona et al., 2001). Women who reported a suicide attempt in the interview and also had collateral information in the prison file ($n = 34$) did not differ significantly from the women who reported a suicide attempt in the interview but had no collateral information in the prison file ($n = 22$) on the MPQ, specifically Negative Emotionality and Behavioral Constraint, or on the PCL-R total and factor scores. The remainder of the sample ($n = 169$) neither reported nor had file evidence of a history of suicidal behavior. The women with a suicide attempt history ($n = 57$, or 25.2% of the sample) did not differ in age, ethnicity, or education from those who did not.

Abuse history—Participants were questioned about a childhood history of physical or sexual abuse in the interview. Prison files were also examined for information regarding childhood abuse, which tends to be covered in presentence investigations. The criteria used to gauge physical abuse involved reports of physical punishment or hitting–hurting by a parent or other adult during childhood that caused injury or that required medical attention. The criteria used to gauge sexual abuse involved reports that, as a child, someone used “force, intimidation, or coercion” to get the inmate to engage in a sexual act (e.g., Nelson et al., 2002). Participants were coded as positive for physical or sexual abuse if they either self-reported or had file information indicating a history of physical ($n = 62$; 27.4%) or sexual ($n = 76$; 33.6%) abuse—of these, 35 reported a history of both. A second rater coded for physical and sexual abuse, using the criteria described previously, in a random subsample of cases ($n = 56$, or 24.8%) in which the base rates of physical and sexual abuse were comparable to those for the full sample: physical abuse rates = 27% and 28%, respectively; sexual abuse rates = 34% and 36%, respectively. The single and average intraclass correlation coefficients for physical and sexual abuse designations across the two raters for this subsample were .95 and .98 for physical abuse and .92 and .96 for sexual abuse.

Information regarding the perpetrators of the abuse was available for a majority of the women reporting physical ($n = 55$ of 62) or sexual abuse ($n = 66$ of 76). Most of the women with a history of physical abuse (67.3%) reported that a parent had been the perpetrator, whereas 9.1% and 23.6% reported, respectively, that another relative or step-parent/nonrelative was the perpetrator. For those with a reported history of sexual abuse, the parent was the perpetrator in 16.7% of the cases, whereas another relative or a step-parent/nonrelative was the perpetrator in 25.8% and 57.6% of the cases, respectively. Women with a history of physical or sexual abuse did not differ from women without any abuse history on demographic variables.⁴

Personality—During an individual session held separately from the diagnostic interview, participants completed the 155-item brief form of the MPQ (MPQ–bf; Patrick, Curtin, & Tellegen, 2002). As per previous work (Verona et al., 2001), the MPQ–bf factor scores of Behavioral Constraint and Negative Emotionality were used in study analyses. The Negative Emotionality factor of the MPQ is marked by trait scales of Stress Reaction, Alienation, and

⁴The abuse literature tends to emphasize the detrimental effects of both types of childhood abuse on psychological and functional outcomes (Anderson, Tiro, Price, Bender, & Kaslow, 2002). However, these effects appear to be additive rather than interactive (Thakkar, Gutierrez, Kuczen, & McCanne, 2000). This appeared to be true also in the current sample, as none of the interaction terms in our regression analyses evaluating sexual and physical abuse as predictors of suicide attempt history, F1, or F2 were significant. However, compared with participants who experienced only one type of abuse, persons who experienced both types were higher in mean levels of PCL–R F1, $t(101) = 2.79$, $p < .01$, and PCL–R F2, $t(101) = 2.58$, $p < .05$, but not in history of suicide attempts, $\chi^2(1) = 0.36$, $p = .55$.

Aggression, reflecting tendencies toward anxiousness, suspiciousness, resentfulness, and physical aggressiveness. Behavioral Constraint encompasses trait scales of Control, Harm Avoidance, and Traditionalism, with higher scores reflecting caution, restraint, and support of conventional morals and values. Factor scores from the MPQ–bf have been shown to correlate very highly ($r_s = .92$ to $.98$) with factor scores from Tellegen's (in press) full 276-item instrument (Patrick et al., 2002).

The MPQ–bf also includes two validity scales, the Variable Response Inconsistency (VRIN) and the True Response Inconsistency (TRIN) scales, to aid in the detection of inconsistent and/or random response profiles. Using distributional cutoffs prescribed by Patrick et al. (2002), we identified three cases as extreme on these scales in relation to the overall prisoner sample and thus excluded them from the analyses.

Data Analysis

First, correlational and regression analyses were conducted to examine the differential and combined relationships between PCL–R F1 and F2 and suicide attempt history. Next, we used path analysis to estimate the direct and indirect effects of the personality and childhood abuse variables on suicide and the two psychopathy factors. Our primary hypothesis was that the association between childhood abuse and psychopathy outcomes (e.g., antisocial deviance, suicidal behavior) would be mediated by the personality variables. This hypothesis was tested in two ways: (a) We compared the fit of a reduced model that posited no direct effects of childhood abuse on the psychopathy outcomes with that of a full model that included all structural paths, and (b) we partitioned the total effects of the childhood abuse variables on the psychopathy variables into direct and indirect effects. For the latter strategy, successful mediation would be established if the indirect path, but not the direct path, was significant. Finally, we examined whether abuse history and personality would account for the relationship between suicide attempts and antisociality (i.e., whether the relationship between these two psychopathological outcomes would drop to nonsignificance after controlling for abuse and personality).

The computer program PRELIS (Version 2.20; Jöreskog & Sörbom, 2001b) was used to calculate the Pearson product–moment, biserial, and tetrachoric correlations and asymptotic covariance matrices. Continuous variables were transformed to a z -score metric prior to estimation of the correlations. Biserial and tetrachoric correlations were used because of the dichotomous nature of the suicide and abuse variables; these correlations assume a liability threshold model to the distributions of the variables, that is, that a normally distributed continuum of risk factors underlies the observed dichotomy.

Models were fit to the resulting correlation matrix using the weighted least squares (WLS) estimation procedure as implemented in LISREL (Version 8.51; Jöreskog & Sörbom, 2001a). WLS is the preferred method when using dichotomous variables, because, unlike maximum-likelihood estimation, it does not assume that the variables follow a multivariate normal distribution in the population. However, WLS does require complete data for every case. Ten participants did not complete the MPQ–bf; thus, they were excluded from the analysis (i.e., the final sample size for analyses was 213). Participants without MPQ–bf data did not differ significantly from participants with complete data in terms of mean PCL–R factor scores or history of suicide attempts, sexual, or physical abuse—suggesting that any bias due to listwise deletion would be modest. Model fit was evaluated using the chi-square goodness-of-fit statistic, the comparative fit index (CFI), and the root-mean-square error of approximation (RMSEA). Chi-square values with a nonsignificant probability value indicate the model provides an adequate fit to the data, and CFI values greater than .95 and RMSEA values less than .05 indicate good model fit.

Results

Correlations

Table 1 presents the Pearson product–moment, biserial, and tetrachoric intercorrelations between the variables. Suicide attempt history and PCL–R F2 had a positive association ($r = .24, p < .01$), whereas suicide attempt history and PCL–R F1 showed a weaker but significant negative association ($r = -.12, p < .05$). As noted in Table 1, PCL–R total score was unrelated to suicide attempts. Suicide attempts were significantly correlated with MPQ–bf Negative Emotionality and Behavioral Constraint and with both forms of childhood abuse. PCL–R F2 was also significantly correlated with the personality factors and with both types of childhood abuse. PCL–R F1 was significantly correlated with high Negative Emotionality, low Behavioral Constraint, and history of physical abuse. However, these latter associations were entirely attributable to the common variance between F1 and F2 ($r = .50, p < .01$), that is, none of the partial correlations between F1 and the personality and abuse variables were significant after controlling for F2 (see Table 1).

This latter finding using partial correlations suggested a cooperative suppressor effect between the two psychopathy factors (Paulus, Robins, Trzesniewski, & Tracy, 2004). To investigate this further, we undertook a hierarchical regression analysis with history of suicide attempts as the criterion and the PCL–R factors as predictors. Entered singly, F1 and F2 yielded $R^2 = .01$ and $.06$, respectively. Including both factors in the same regression model, however, yielded a negative predictive contribution for F1 ($\beta = -.32, p < .01$) and a moderate positive contribution for F2 ($\beta = .40, p < .01$), with total $R^2 = .13$. That is, not only did including the other PCL–R factor result in a significant increase in variance accounted for ($\Delta R^2 = .12$ and $.07$, for F1 and F2, respectively) but the predictive power of each factor actually increased when the other factor was included. The interaction between F1 and F2 was not significant, indicating additive influences of the two factors.

In addition, we conducted a regression analysis to clarify the associations between suicide attempts and the different facets of psychopathy using Hare's (2003) four-factor structure, wherein each of the original factors encompasses two distinct subfacets (F1: interpersonal, affective facets; F2: impulsivity, antisocial facets; see Footnote 1). All four of Hare's (2003) PCL–R factors were included together as predictors of suicide attempts. Results suggest that the negative relationship between suicide attempt history and PCL–R F1 is accounted for mostly by the interpersonal features of psychopathy ($\beta = -.33, p < .05$) and not the affective features ($\beta = -.02, ns$). For PCL–R F2, the antisocial facet ($\beta = .31, p < .05$) shows a stronger association with suicide attempts than the impulsivity facet ($\beta = .13, p > .05$). Tests of the differences between betas were conducted using LISREL path analysis. The two F1 subfacets, interpersonal and affective, and the two F2 subfacets, antisocial and impulsive, were included as exogenous variables predicting suicide attempt history. First, we constrained the betas for the F1 subfacets (interpersonal \rightarrow suicide attempts, affective \rightarrow suicide attempts) to be equal and compared this model with an unconstrained model (i.e., beta weights are assumed to be different). The chi-square difference test was significant, $\chi^2(1) = 5.16, p = .023$, indicating that there was a significant difference between the betas. On the other hand, there was no difference in the beta coefficients for the F2 subfacets, $\chi^2(1) = 1.20, p > .10$.

Path Analyses

Models predicting suicide and PCL–R F2—Figure 1 depicts results of a model that estimated the effects of the childhood abuse and personality variables on suicide attempt history and PCL–R F2. For this model, we estimated all the effects of the predictors on the outcomes as well as all the effects of the abuse variables on the personality variables. This was a just-identified model with $df = 0$ (i.e., all possible paths were modeled).

Together, the personality and abuse variables accounted for 31% (1 – .69) and 28% (1 – .72) of the variance in suicide and F2, respectively. Removing the direct effects of the childhood abuse variables resulted in a significant decrement in model fit, with less than adequate fit indices, $\chi^2(4, N = 213) = 37.16, p < .01, CFI = .70, RMSEA = .20$. However, this was due solely to removal of the direct effects of sexual abuse on suicide attempt history and F2, $\chi^2(2, N = 213) = 17.57, p < .01, CFI = .86, RMSEA = .19$; removal of the direct effects of physical abuse on suicide and F2 did not worsen the fit of the model, $\chi^2(2, N = 213) = .08, p = .96, CFI = 1.00, RMSEA = .00$. Analyses of the indirect effects showed that the effect of physical abuse was mediated by Negative Emotionality and low Behavioral Constraint, which were both significantly associated with suicide and F2. Specifically, the indirect effects of physical abuse through the personality variables on suicide attempt history ($\beta = .12, SE = .04, p < .01$) and F2 ($\beta = .15, SE = .04, p < .01$) were both significant. In contrast, the indirect effect of sexual abuse via personality was not significant for either suicide attempts or F2. Taken together, personality and abuse variables fully accounted for the covariance between suicide attempt history and F2 (i.e., $r = -.04, p = .57$, for the model in which personality and abuse were included vs. $r = .24$ for the simple association between suicide history and F2).

Model predicting suicide and PCL–R F1—In a subsequent path model, we estimated the effects of the childhood abuse and personality variables on suicide and PCL–R F1. The associations between the predictor variables and suicide attempt history were the same as in the preceding models that included F2 as an outcome; thus, we limit the presentation of results to reports of the amount of variance accounted for in F1 and its co-occurrence with suicide attempt history. Unlike the previous model with F2 as one of the outcome variables, the personality and abuse variables accounted for only 8% of the variance in F1. In addition, the inclusion of the personality and abuse variables in the model did not reduce the association between suicide attempts and F1. In fact, removal of the correlation between the residual variance (i.e., variance remaining, not explained by personality and abuse variables) of suicide and F1 resulted in a significant decrement in fit, $\chi^2(1, N = 213) = 22.86, p < .01, CFI = .85, RMSEA = .32$. Rather, a strong suppressor effect was evident as the negative correlation between the residual variance of suicide and F1 ($r = -.25, p < .01$) was more than twice the magnitude of the zero-order correlation ($r = -.12, p < .05$). Thus, controlling for abuse and personality variables actually increased the association between suicide history and F1.

Discussion

The current study is the first to examine differential relationships between suicide attempt history and the two PCL–R factors, as well as associations with two common risk factors (childhood abuse and personality), among female prisoners. The study is particularly relevant given the high rates and the substantial clinical and social importance of destructive behaviors (i.e., harm to self and harm to others) in a burgeoning population (incarcerated women). We replicated the finding of a positive association between suicide attempt history and PCL–R F2, previously reported in male prisoners (Verona et al., 2001). We also found a significant negative association between suicide attempt history and PCL–R F1, which is consistent with Cleckley's (1976) notion that individuals with primary psychopathy are immune to suicidality. Thus, the current study provides further evidence that the correlates of psychopathy generalize across genders. Another important finding was that the inclusion of both PCL–R factors increased prediction of suicide attempts above the level of prediction achieved using just one of the factors (e.g., antisocial deviance alone). This suggests that each factor accounts for unique variance in suicide attempts.

As in Verona et al.'s (2001) study of male prisoners, correlational analyses revealed that the MPQ dimensions of Negative Emotionality and low Behavioral Constraint were related to both suicide attempt history and F2 in female prisoners. Moreover, the path analysis showed that

the personality and abuse predictors in combination accounted for the reported association between suicide attempt history and F2, supporting the hypothesis that personality and abuse represent common risk factors for these outcomes. Of particular interest (and novel to this investigation) was the finding that these personality dimensions appeared to mediate the relationship between physical abuse and psychopathology (suicide attempt history and antisocial deviance), whereas sexual abuse contributed to prediction independent of personality. These latter results coincide with data from the adult personality disorder literature indicating that childhood abuse history accounts for variance in psychopathology over that accounted for by personality dispositions (Morey & Zanarini, 2000; Trull, 2001). In contrast to these results for sexual abuse, physical abuse was related selectively to Negative Emotionality and Behavioral Constraint, consistent with the idea that personality mediates the influence of physical abuse on suicidal and antisocial behaviors (Egeland et al., 2002).

However, an alternative interpretation, which cannot be ruled out, is that the effects of physical abuse may be attributed to a gene-environment correlation. That is, the offspring of abusive parents may inherit tendencies toward destructive and impulsive behaviors (Ge et al., 1996) from their parents, which would also put them at risk for receiving more severe punishment from their parents. Thus, physical abuse and personality may contribute overlapping variance to psychopathological outcomes such as suicidal and antisocial behaviors. Given these competing interpretations, longitudinal work should be conducted to clarify sequential relationships between personality development and incidence of physical abuse. Although longitudinal studies cannot provide conclusive information about causality, this research can be useful in ruling out certain causal hypotheses.

Another caveat is that at least one prior meta-analysis (Rind, Tromovitch, & Bauserman, 1998) suggested a relatively limited impact of childhood sexual abuse on long-term outcomes and that familial background may account for the effects of abuse history on psychopathological outcomes (DiLalla & Gottesman, 1991; Rind et al., 1998). However, recent work has suggested that childhood abuse predicts psychopathological outcomes above and beyond the effects of parental psychopathology and other familial factors, including in behavior genetic studies, where the genetic contributions can be partialled out to some extent (Jaffee, Caspi, Moffit, & Taylor, 2004; Nelson et al., 2002). Moreover, women in the current study likely had few protective factors (income level, social support, education) that might mitigate the impact of childhood trauma on the development of adult psychopathology over time. Given this, childhood abuse may have a longer term impact on the outcomes of these women. More research is needed to clarify the unique role and magnitude of the effect of abuse on adult psychopathology across different populations.

Underpinnings of the Covariance Between Suicide Attempt History and Psychopathy

The results of the multivariate model predicting suicide attempts and F2 suggested that abuse history and personality factors together accounted for most of the covariance between these two syndromes (i.e., the correlation between suicide and F2 dropped from .24 to $-.04$ after we controlled for abuse and personality variables). Although sexual abuse was able to account for variance in these outcomes above personality, personality and physical abuse overlapped in their effects on F2 (i.e., personality variables accounted for the effect of physical abuse on F2). In effect, individuals with a high Negative Emotionality–low Behavioral Constraint profile were at heightened risk for engaging in both suicidal and criminal behaviors, as were persons who experienced sexual abuse. The implication is that prevention programs targeted at reducing levels of suicidal and antisocial behaviors should focus on individuals who possess predisposing personality traits as well as those who have experienced sexual abuse as children.

Although normal personality traits and abuse history accounted for substantial variance in suicide attempt history and PCL–R F2 (31% and 28%, respectively), this was not the case in

the multivariate model in which suicide attempt history and PCL–R F1 were included as criterion variables. In this case, personality and abuse accounted for minimal variance in F1, and their inclusion in the model actually increased the statistical covariation between suicide attempt history and F1. This latter finding can be explained by the fact that the personality and abuse variables accounted for the association between suicide attempt history and F2 (as depicted in Figure 1); thus, the effect of including the same variables in a model with suicide attempt history and F1 was to partial out the majority of the variance shared between F2 and the other variables. This provides further evidence that it is the nonshared elements of F1 and F2 that account for their association with suicide attempt history.

Strengths, Limitations and Implications

The results of this research are interesting, and strengths include the fact that assessments were conducted using well-established measures of psychopathy and personality. In addition, the focus on a female incarcerated sample, in which women from different ethnic groups were represented, addresses an important gap in the research literature. Nonetheless, certain limitations should be acknowledged. First, the study was cross-sectional, and findings relied mostly on retrospective reports of abuse and suicidal behaviors. Relatedly, it is important to recognize that a number of alternative path models would yield equivalent fit (MacCallum, Wegener, Uchino, & Fabrigar, 1993; Tomarken & Waller, 2003), and the causal assumptions driving these models cannot be confirmed. However, it is noteworthy that our results parallel findings from other studies, including those that have used longitudinal designs (Egeland et al., 2002), and our model was plausibly derived from the theoretical and empirical literatures.

Second, only limited information was available regarding the circumstances surrounding participants' suicide attempts. For example, our suicide measure cannot adequately distinguish between suicide attempts that were motivated by a desire to die (i.e., more genuine attempts) versus those that were “cries for help” or less serious attempts. This information is important when studying psychopathic behavior, given that individuals with psychopathy are described as manipulative and deceitful and may threaten suicide without any true intent (Cleckley, 1976). However, the fact that suicide attempts were negatively related to F1 (the facet of psychopathy associated with deceit and conning) argues against the idea that the suicide attempt variable was tapping into manipulative and not genuine attempts.

In addition, information used to make ratings of psychopathy and suicide attempt history was derived from the same interview and file sources. Aside from the impact of shared method variance, it is possible that knowledge of participants' suicide attempt history could have influenced PCL–R ratings. This seems unlikely insofar as none of the PCL–R items include specific reference to a history of suicidal behavior, and raters were trained to adhere closely to the PCL–R criteria in assigning their ratings. Moreover, the diagnosticians who completed PCL–R ratings were not familiar with the hypotheses of the current study (i.e., they were unaware that the data would be used to address the relation between psychopathy and suicide), and someone other than the PCL–R raters coded for presence or absence of suicide history. Nonetheless, it is conceivable that the PCL–R raters might still have been influenced in some way by participants' suicide history in assigning their ratings. This possibility could be ruled out decisively in future studies by excluding information about suicide history from the interview and file information used to make PCL–R ratings.

Finally, a noteworthy limitation involves the fact that the absolute effect sizes for the associations between suicide attempts and the PCL–R factors (F2: $r = .24$; F1: $r = -.12$) in this study were small in magnitude, which dictates some caution in the conclusions to be drawn from our findings. Nevertheless, the current results do have important clinical and policy implications. First, the incidence of prison suicide or self-injurious behaviors is low, but any incident of this kind is of major concern to personnel who work in these settings. In this context,

the identification of at-risk individuals is of substantial importance, and these findings provide important leads that can be pursued in future work. Second, we demonstrated the incremental contribution of primary psychopathy traits (F1), along with antisocial deviance (F2), in accounting for suicidal behaviors, and F1 predicted above personality and abuse variables. This result should be of interest to researchers in the area of suicidality and criminality, who have previously focused on antisocial deviance per se, and suggests the importance of assessing primary psychopathy in prison samples (i.e., those with high levels of antisocial deviance and low levels of F1 traits would be at most risk for suicide attempts). Finally, the multivariate model including all risk factors accounted for 31% and 28% of the variance in prior suicide attempts and antisocial deviance, respectively. These contributions are not trivial, considering the typical effect sizes reported for other psychopathological behaviors, and thus identification of risk can potentially be improved with the inclusion of such risk factors.

In conclusion, our study is the first to examine the independent and combined effects of childhood abuse and personality on suicidal behaviors and psychopathy in a female prisoner sample. The results justify the investigation of psychopathic traits, and not just antisocial deviance per se, as potential predictors of suicidality in prospective studies involving externalizing populations. The current work also indicates that further analysis of abuse and personality-trait risk factors for engagement in self- and other-destructive behaviors is warranted. A next step is to directly examine gender differences in the structural relations between abuse, personality, and suicidal and antisocial behaviors. This would allow psychologists to tailor treatment and intervention to the specific needs and difficulties of men and women.

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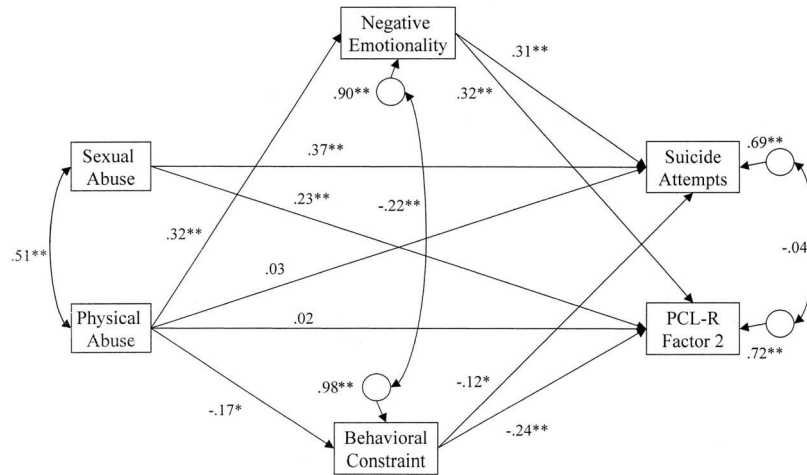


Figure 1.

Structural model of childhood abuse and personality as predictors of suicide attempt history and Psychopathy Checklist—Revised (PCL–R) Factor 2. Estimates presented above the outcome variables (i.e., suicide attempts, Factor 2) represent residual terms (or the amount of variance in outcome not explained by the predictors). PCL–R = Psychopathy Checklist Revised. For the sake of clarity, certain nonsignificant paths are not shown in the figure. These effects are sexual abuse–Negative Emotionality ($\beta = -.03$, $SE = .08$), sexual abuse–Behavioral Constraint ($\beta = .08$, $SE = .07$). * $p < .05$; ** $p < .01$.

Table 1
Correlation Matrix for Suicide Attempt History, Psychopathy, Personality, and Abuse Variables

Variable	1	2	3	4	5	6	7	8
1. Suicide attempt history	—							
2. PCL-R total score	.08	—						
3. PCL-R Factor 1	-.12 (-.24 ^{***})	.82 ^{**}						
4. PCL-R Factor 2	.24 (.30 ^{*****})	.89 ^{**}	.50 ^{**}					
5. Negative Emotionality	.40 ^{**}	.36 ^{**}	.21 (.00) ^{**}	—				
6. Behavioral Constraint	-.20 ^{**}	-.28 ^{**}	-.15 (.01) [*]	.42 (.31 ^{*****})	—			
7. Physical abuse	.33 ^{**}	.30 ^{**}	.20 (.07) ^{**}	-.33 (-.25 ^{*****})	-.26 ^{**}	—		
8. Sexual abuse	.42	.25 ^{**}	.12 (-.02) [*]	.26 (.16 ^{*****})	.31 ^{**}	-.13 [*]	—	
				.28 (.22 ^{*****})	.13 [*]	-.01	.51 ^{**}	—

Note. N = 213. PCL-R = Psychopathy Checklist—Revised. The correlations in parentheses are partial correlations controlling for the other PCL-R factor. Suicide attempt history, physical abuse, and sexual abuse were coded as yes = 1, no = 0.

* p < .05.

** p < .01.