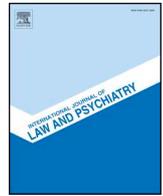




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Which features of psychopathy and impulsivity matter most for prison violence? New evidence among female prisoners



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ABSTRACT

Prison violence is a complex and multifaceted phenomenon. While a great deal of research has been conducted in male samples, very few studies are dedicated to understanding violence committed by female offenders. Two constructs that have emerged as important predictors of violence are psychopathy and impulsivity. These constructs may be an important line of inquiry due to the close association between psychopathy, impulsivity, and violence. In a sample of 166 female offenders, we used the 3-facet model of psychopathy and 3-factor model of trait impulsivity with the goal to statistically explain two types of prison violence: official reports of violent misconducts over a 12-month period, and self-report of deliberately instigating a violent altercation. We conducted three separate regression models to test the independent contribution of psychopathy and impulsivity, as well as accounting for the overlap between psychopathy and impulsivity. When impulsivity and psychopathy were not competing within the same model, affective and behavioral psychopathic traits, and nonplanning impulsiveness predicted violent misconducts. However, when accounting for impulsivity and psychopathy within the same model, only affective psychopathic traits remained significant. When predicting if an offender deliberately started a violent altercation, separate statistical models showed affective and interpersonal psychopathic traits, and nonplanning impulsiveness were significant. When competing for variance within the same statistical model, only affective and interpersonal psychopathic traits remained as significant predictors. This suggests an overlap between psychopathic traits and nonplanning impulsivity when understanding violent misconducts in female offenders, while affective psychopathic explains female prison violence, regardless of impulsivity.

1. Introduction

Prison violence is widespread (Berg & DeLisi, 2006; Thomson, 2018). In order to facilitate the correction, treatment, and supervision of offenders, prisons should be as free of violence as possible to ensure the safety and welfare of inmates and staff. To develop effective violence prevention and intervention strategies, there is a need to explore individual-level risk factors for prison violence. Unfortunately, the overwhelming preponderance of research on institutional violence has focused on male offenders, leaving risk factors largely unexplored in female offenders. Although the focus on males has been a noteworthy cause (especially because men make up 93% of prisoners), since 2012,

rates of incarceration in the U.S. for males have dropped by 3% while the female incarceration rate has increased by 2.5% (Carson, 2018). Institutional life in female facilities can be as violent and conflict-laden as it is in male facilities especially regarding fighting and lower-level physical assaults. In a comparative study, Wolff, Blitz, and Shi (2007) reported rates of inmate-on-inmate violence in female facilities were comparable to those found in male facilities with the exception of assaults with weapons and staff-on-inmate assaults which were much higher in male facilities. However, rates of sexual violence against inmates have been shown to be dramatically higher among female compared to male inmates (Caravaca Sánchez & Wolff, 2016; Wolff, Blitz, Shi, Bachman, & Siegel, 2006). Although prison violence among women

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is a multifactorial construct, it is clear that individual-level, psychological factors relating to self-regulation deficits and a proneness for conflict place an inmate at significant risk for violence during confinement (Komarovskaya, Loper, & Warren, 2007; Lee & Egan, 2013; Thomson, Towl, & Centifanti, 2016). Two constructs that bear on this profile are psychopathy and impulsivity (Komarovskaya et al., 2007; McKeown, 2010). Although there are linkages between psychopathy and prison violence, most of the research has been conducted on male inmates, has not exclusively focused on violent misconduct, and to date, has not tested the multidimensional nature of psychopathy and impulsivity as risk factors for female prison violence.

1.1. Psychopathy and violence among female offenders

Psychopathy is one of the most extensively researched risk factors for violence in male samples (Blais, Solodukhin, & Forth, 2014; Guy, Douglas, & Hendry, 2010), and has been shown to predict future prison violence, violent recidivism, and sexual offending (Brown, Dargis, Mattern, Tsonis, & Newman, 2015; Camp, Skeem, Barchard, Lilienfeld, & Poythress, 2013; Olver & Wong, 2015). However, research exploring the dimensional structure of psychopathy has shown that not all factors/facets of psychopathy relate to violent behavior. Traditionally, psychopathy was understood using a 2-factor model, which included interpersonal-affective (factor 1) and impulsive-antisocial features (factors 2). However, there have been criticisms about the construct of psychopathy and the association with violent behavior. Skeem and Cooke (2010a) suggest that antisocial behavior is a product of psychopathy, and should not be considered a core construct of psychopathy, as it becomes a tautological measure. That is, the measure of antisocial psychopathic traits is in itself predicting the antisocial behavior. This is in line with Meehl's maxim (1954) - the best predictor of future behavior is past behavior. Thus, the link between antisocial psychopathic traits and violence may be a result of criterion contamination (Reidy, Lilienfeld, Berke, Gentile, & Zeichner, 2016). In support of this assertion, Reidy et al. (2016) found the behavioral facet only predicted violence for men with a criminal history, while the affective facet predicted violence for men with and without a criminal history.

Instead, a 3-facet model has been validated and recommended for use in female samples (Cooke & Michie, 2001; Shou, Sellbom, & Han, 2016; Skeem & Cooke, 2010a; Thomson et al., 2016). Using the 3-facet model has resulted in more consistent results, as well as greater sensitivity to detect sex differences in the psychopathy-aggression link (Thomson, 2018). The 3-facet model includes interpersonal (e.g., ego-centric, manipulative), affective (e.g., callousness, low empathy), and behavioral (e.g., impulsivity, risk-taking behaviors) personality traits (Cooke & Michie, 2001). In both men and women the behavioral features are consistently found to predict future violent offending and aggression, while the affective facet has been shown to be unrelated or marginally predictive of future violent behavior in men (Douglas, Strand, Belfrage, Fransson, & Levander, 2005; Edens, Poythress, Lilienfeld, Patrick, & Test, 2008; Kennealy, Skeem, Walters, & Camp, 2010; Walters & Heilbrun, 2010). Thus, it seems, for men, that violence may be best explained by behavioral psychopathic traits.

While there seems to be a clear association between psychopathy and violence in men, there is limited research dedicated to women (Weizmann-Henelius, Virkkunen, Gammelgård, Eronen, & Putkonen, 2015), especially assessing prison violence. Some evidence suggests psychopathy predicts prison violence, staff-reports of prison aggression (Salekin et al., 1997), post-release recidivism (Loucks & Zamble, 2000; Richards, Casey, & Lucente, 2003), and forensic in-patient violence in women (Douglas et al., 2005). However, there are also conflicting findings. A matched study of forensic inpatients showed psychopathy predicted violent recidivism in the male sample but was not predictive in the female sample (de Vogel & de Ruiter, 2005). This is consistent

with research not finding an association between psychopathy and violent recidivism (see Schaap, Lammers, & de Vogel, 2009) nor violent behavior among female offenders (Warren et al., 2005). An eight-year follow-up study of released female offenders did not support the utility of psychopathy as a predictive measure for violent recidivism (Weizmann-Henelius et al., 2015).

Yet, at the dimensional level, there seems to be more consistent support that psychopathy in women is associated with prison violence and aggression, with notable sex differences and similarities (Douglas et al., 2005; Thomson et al., 2016; Vassileva et al., 2018). That is, in women and men, antisocial and lifestyle psychopathic traits are associated with higher levels of aggression, but the affective facet is only associated with violence and physical aggression in women (Chakhssi, Bernstein, & de Ruiter, 2014; Edens et al., 2008; Thomson et al., 2016; Thomson, Kiehl, & Bjork, 2018; Vassileva et al., 2018). Coid et al. (2009) found that affective and interpersonal psychopathic traits demonstrated good predictive ability for violent recidivism among women, but did not predict above chance-level among men. In female offenders, both the behavioral and affective dimensions have been shown to reliably predict violent misconducts (Richards et al., 2003; Thomson et al., 2016), and to differentiate women convicted of a non drug-related violent crime from those convicted for a drug-related violent crime or nonviolent crime (Thomson, 2017). Assessing the dimensional construct of psychopathy has shown that psychopathy, depending on the sex of the offender, differentially predicts prison violence, such that for women, affective psychopathic traits play an integral role in explaining prison violence, while behavioral psychopathic traits seem to be equally important for explaining violence for both men and women.

The Psychopathy Checklist-Revised (PCL-R; Hare, 2003) is one of the most widely used measures of psychopathy and has been influential in the development of self-report measures (Christian & Sellbom, 2016). However, the PCL-R is expensive in resources. It requires specific training and materials, and involves extensive interview times and collateral review that is not always available. Further, there have been criticisms that the overuse and reliance on the PCL-R has led to it becoming synonymous with the construct of psychopathy (Skeem & Cooke, 2010b). Thus, prior research has urged studies to test alternative measures of psychopathy to determine the predictive value in criminal justice outcomes (see Walters, 2012).

The Levenson Self-Report of Psychopathy (LSRP; Levenson, Kiehl, & Fitzpatrick, 1995) has become one of the most widely used measures of psychopathic traits. The LSRP is an appealing method to capture psychopathy because of the administration benefits - quick administration time, lower stress and burden on participants, training is not required, and it is freely available (Christian & Sellbom, 2016). Further, studies investigating the 3-facet model have demonstrated good convergent validity. The behavioral facet is most closely related to higher scores on impulsivity, anxiety, substance abuse, and anger proneness (Brinkley, Diamond, Magaletta, & Heigel, 2008; Salekin, Chen, Sellbom, Lester, & MacDougall, 2014; Sellbom, 2011; Shou et al., 2016; Thomson et al., 2016). The affective facet is closely related coldheartedness, low empathy, guiltlessness, and deficits in fear recognition (Anderson, Sellbom, Wygant, & Edens, 2013; Gillespie et al., 2015; Salekin, Chen, Sellbom, Lester, & Mac Dougall, 2014; Sellbom, 2011; White, 2014). The interpersonal facet is most related to narcissism, Machiavellianism, antagonism, meanness, low anxiety, and reduced perception of social responsibility (Few, Miller, & Lynam, 2013; Gillespie et al., 2015; Salekin et al., 2014; Sellbom, 2011). Furthermore, the LSRP factors and facets are highly correlated with the respective factors and facets on the Psychopathy Checklist (Brinkley, Schmitt, Smith, & Newman, 2001; Wilson, Abramowitz, Vasilev, Bozgunov, & Vassileva, 2014). The benefits associated with self-report measures and the evidence in support of the LSRP are compelling for its use.

1.2. Impulsivity and violence among female offenders

Weizmann-Henelius et al. (2015) suggest that caution should be applied when using psychopathy as a risk-assessment in women, among whom more emphasis should be placed on other risk factors such as impulsivity. Impulsivity is understood as a proneness to act with little forethought, and in ways that are destructive (Moeller, 2009). Impulsivity is mediated by bottom-up and top-down processes (Nigg, 2017). Poor impulse control has been associated with greater levels of rule-breaking behavior and has been considered a leading cause of crime (Hirschi & Gottfredson, 1994; Moffitt, 1993). However, evidence suggests there may be sex differences for impulsivity predicting violent behavior (Komarovskaya et al., 2007; Thomson et al., 2016). For instance, in male offenders, trait impulsivity and poor inhibitory control have been shown to predict violent misconducts (Wang & Diamond, 1999) and severe violence (Hancock, Tapscott, & Hoaken, 2010). However, in female offenders, impulsivity has been shown to predict antisocial behavior, but not violence (Komarovskaya et al., 2007; Thomson et al., 2016). Therefore, in men impulsivity may play a more general role in violent behavior, whereas for women, impulsivity may only be associated with nonviolent rule-breaking behavior.

Yet, impulsivity is a core component of the behavioral dimension of psychopathy (Brinkley et al., 2008) and the overlap between impulsivity and psychopathy may explain, in part, some of the mixed findings when predicting violence in female forensic populations. That is, a lack of self-control, cognitive instability, and lack of forethought in women may not be sufficient to predict physically hurting another person, but may predict nonviolent rule-breaking behaviors in women (Thomson et al., 2016). Instead, female violence may be more likely to occur when poor self-control is accompanied by risk-taking, frustration, anger, boredom, or irritability. Another possibility of the mixed findings is the failure to account for the multidimensionality of trait impulsivity (Thomson et al., 2016). For example, in female prisoners, only nonplanning and attentional impulsivity were found to predict self-report prison violence in women, while motor impulsivity has not (Komarovskaya et al., 2007). Therefore, subfactors of trait impulsivity may be more sensitive to understanding prison violence, and the overlap with psychopathy in female offenders. Another possibility of the mixed findings is the failure to include the multidimensionality of impulsivity (Thomson et al., 2016).

The Barratt Impulsiveness Scale includes three factors, attentional impulsiveness, motor impulsiveness, and nonplanning impulsiveness (Patton, Stanford, & Barratt, 1995). In terms of construct validity, there has been extensive research supporting the 3-factor model (Stanford et al., 2009). The nonplanning factor is most associated with strategic planning on executive function (EF) measures, which is reflective of activity in the dorsolateral prefrontal cortex (Spinella, 2005; Stanford et al., 2009) and poor working memory capacity (Whitney, Jameson, & Hinson, 2004). Whereas, individuals with higher attentional impulsiveness have difficulties with removing irrelevant information from working memory, resulting in cognitive overload (Hinson, Jameson, & Whitney, 2003; Stanford et al., 2009; Whitney et al., 2004). Higher scores on attentional impulsiveness accounted for worse performance on set-shifting ability on EF tasks (Cheung, Mitsis, & Halperin, 2004), and related to higher levels of boredom susceptibility, neuroticism, and extraversion (Stanford et al., 2009). In contrast, motor impulsivity is associated with poor impulse control on EF measures (Cheung et al., 2004; Spinella, 2005), and thrill-adventure seeking, experience seeking, and disinhibition (Stanford et al., 2009). In offenders, women diagnosed with antisocial personality disorder reported higher scores on nonplanning impulsivity (Warren & South, 2006). Further, nonplanning and attentional impulsivity have been shown to predict self-report of prison violence in women, while motor impulsivity did not (Komarovskaya et al., 2007). Therefore, the factor construct of impulsivity may be more sensitive to understanding prison violence, and the overlap with psychopathy in female offenders.

1.3. Current aim

The aim of the present study was to understand what risk factors were associated with official reports of prison violence over a 12-month period and instigating a violent altercation. To understand what risk factors explain prison violence, we included demographics (age, ethnic minority status, level of education) and the 3-facet model of psychopathy and 3-factor model of trait impulsivity. We expected that when psychopathy and impulsivity were entered into separate statistical models, violent misconducts would be explained by younger age, low education level, high levels of behavioral and affective psychopathic traits, and nonplanning and attentional impulsiveness. However, when psychopathy and impulsivity were entered into the same model, we expected only behavioral and affective psychopathic traits to remain significant. We expected similar findings when assessing the likelihood of instigating a violent altercation, but because interpersonal psychopathic traits were found to be associated with premeditated violence in women (Blais et al., 2014), we expected interpersonal psychopathic traits to be significant in the separate and combined models.

2. Method

2.1. Participants

Participants ($N = 166$, $M_{\text{age}} = 38.48$ years, age range: 20–72 years) were recruited from a women's correctional facility that houses maximum, medium, and minimum custody level female offenders. Participants self-identified as Pacific Islander (52%), Caucasian (28%), Asian-American (8%), and other minority ethnicities (12% [Native American, Native Alaskan, African American, Hispanic American, Mexican, and Middle Eastern]), and 66% of the sample completed 12th grade education (high school) or higher. For statistical analyses, ethnicity was coded for ethnic minority status (Caucasian = 0, Minority = 1). Twenty-five percent of the participants had been convicted of a violent criminal offense (34% assault, 22% robbery, 22% threatening, 10% manslaughter, 12% kidnapping, 3% sexual assault, 7% homicide). Participants received no compensation or incentive for participation, and were informed that their involvement was for research and not part of the correctional institutional files. The study was approved by the institutional review board at the University of Hawai'i.

2.2. Measures

2.2.1. Psychopathic traits

The Levenson Self-Report of Psychopathy Scale (LSRP; Levenson et al., 1995) was administered to measure psychopathic traits. The LSRP captures three facets: affective, interpersonal, and behavioral psychopathic traits (Brinkley et al., 2008). The LSRP consists of 26 items reported in a Likert-scale self-report format, with ratings from 1 (disagree strongly) to 4 (agree strongly). The three-facet model includes 20 of the 26-items. Affective (4 items [e.g., "I make a point of trying not to hurt others in pursuit of my goals"], behavioral (6 items [e.g., "I have been in a lot of shouting matches with other people"]), and interpersonal (10 items [e.g., "In today's world, I feel justified in doing anything I can get away with to succeed"]) The interpersonal ($\alpha = 0.846$; $\omega_h = 0.849$), affective ($\alpha = 0.560$; $\omega_h = 0.541$), and behavioral ($\alpha = 0.858$; $\omega_h = 0.878$) facets showed low to adequate internal consistency.

2.2.2. Impulsivity

The Barratt Impulsiveness Scale-11 (Patton et al., 1995) consists of three factors: attentional, motor, and nonplanning impulsiveness (Patton et al., 1995). Attentional impulsivity involves concentration difficulties. Motor impulsivity involves acting without thinking. Nonplanning impulsivity involves a lack of self-control and cognitive complexity. The BIS-11 has been widely used in male and female

sampled forensic research (Smith, Waterman, & Ward, 2006; Stanford et al., 2009). The internal consistency for nonplanning ($\alpha = 0.778$, $\omega_h = 0.789$), attentional ($\alpha = 0.745$; $\omega_h = 0.765$), and motor impulsivity ($\alpha = 0.722$; $\omega_h = 0.737$) subscales in our sample were good and consistent with prior research (see Gordon & Egan, 2011).

2.2.3. Violent Misconducts

Official reports of misconducts were collected from 12 months prior to the questionnaire administration. Misconducts were coded using the Hawai'i Department of Public Safety Corrections Administration Policy and Procedures Manual. Consistent with Steiner and Wooldredge (2014), misconducts were coded as a violent misconduct if the offense included threatening, causing physical harm, or attempting to cause physical harm to an inmate or staff member. Misconducts were summed for the 12-month period ($M = 0.43$, $SD = 0.88$).

2.2.4. Violent altercations

To establish if the participant had recently instigated a violent altercation, participants were asked, "In the past three months have you deliberately started a violent altercation with another inmate (e.g., fist fight)?" A specific date of three months past was provided (e.g., administration conducted in February, participants were told "since December"). Participants reported this as either "yes" or "no" (coded as yes = 1, no = 0; $M = 0.84$, $SD = 0.28$).

2.3. Data analytic plan

Statistical analyses were conducted using R Studio version 3.4.3 (R Core Team, 2017). To understand risk factors for violent misconducts we used MASS package (Venables & Ripley, 2002). A test for overdispersion (Cameron & Trivedi, 1990) was significant ($p = 0.004$), suggesting the data were overdispersed. A negative binomial regression was selected for analyses because it accounts for overdispersed data, and it accurately estimates observed frequencies while maintaining parsimony (Hilbe, 2011). Incidence rate ratios (IRR), which are derived from the exponentiated regression coefficients, were used as a measure of effect size. IRR corresponds with the rate of violent misconducts occurring within the 12-month period based on the independent variable. To understand risk factors for offenders intentionally instigated a violent altercation a series of logistic regressions were performed. Odds ratio was used to assess the likelihood of a violent altercation occurring based on the independent variable.

3. Results

3.1. Violent misconducts

To assess if psychopathy or impulsivity explained violent misconducts we conducted a series of negative binomial regressions. The first model included age, ethnic minority status, education level, and the three psychopathy facets. The second model included age, ethnic minority status, education level, and the three trait impulsivity factors. The third model included all independent variables. This method was chosen to test the contribution of psychopathy (Model 1) and impulsivity (Model 2) separately, and then accounting for each other (Model 3).

Table 1 displays the results for the models. Model 1 showed education (estimate = -0.66 , $SE = 0.30$, $p = 0.029$), affective (estimate = 0.16 , $SE = 0.05$, $p = 0.003$) and behavioral psychopathic traits (estimate = 0.12 , $SE = 0.06$, $p = 0.036$) were significant. Thus, not having graduated from high school, and having higher levels of affective or behavioral psychopathic traits statistically explained violent misconducts over a 12-month period. Model 2 included age, minority status, education, and the impulsivity factors. Age (estimate = -0.04 , $SE = 0.02$, $p = 0.014$) and nonplanning impulsivity (estimate = 0.09 , $SE = 0.03$, $p = 0.006$) were significant, such that being younger in age,

and having higher levels of nonplanning impulsivity explained violent misconducts. Model 3 included age, minority status, education, psychopathy, and impulsivity. Age (estimate = -0.03 , $SE = 0.02$, $p = 0.049$), education (estimate = -0.67 , $SE = 0.30$, $p = 0.028$), and affective psychopathic traits (estimate = 0.14 , $SE = 0.06$, $p = 0.009$) remained significant. In sum, when all variables were included within the same model, being younger in age, not having completed high school, and having higher levels of affective psychopathic traits explained a greater number of violent misconducts over a 12-month period.

3.2. Violent altercation

Logistic regressions were conducted to explain the likelihood of offenders instigating a violent altercation. Model 1 included age, ethnic minority status, education level, and psychopathy. Model 2 included age, ethnic minority status, education level, and impulsivity. Model 3 included all independent variables. Conducting separate regression models tested the independent contribution of psychopathy (Model 1) and impulsivity (Model 2). Model 3 was conducted to account for the overlap between psychopathy and impulsivity.

Table 2 displays the results from the regressions. Model 1 was significantly better fitting than the null model ($AIC = 73.79$; $-2LL = 29.899$; $\chi^2(6) = 36.23$, $p = 0.000$). Offenders who scored higher on the affective ($OR = 1.37$, $p = 0.021$) or interpersonal facets ($OR = 1.25$, $p = 0.003$) were most likely to have started a violent altercation within the past 3 months. Model 2 was also significantly better fitting than the null model ($AIC = 94.83$; $-2LL = 40.41$; $\chi^2_{diff}(6) = 15.19$, $p = 0.018$). Nonplanning impulsivity increased the likelihood of having started a violent altercation ($OR = 1.20$, $p = 0.011$). Model 3 was significant ($AIC = 75.38$; $-2LL = 27.69$; $\chi^2(9) = 40.65$, $p = 0.000$). Both affective ($OR = 1.30$, $p = 0.039$) and interpersonal psychopathic traits ($OR = 1.41$, $p = 0.001$) remained significant in explaining having started a violent altercation. In sum, when accounting for the overlap between psychopathy and impulsivity, only affective and interpersonal psychopathic traits significantly explained having started a violent altercation within the past 3-months.

4. Discussion

Understanding the mechanisms of prison violence committed by female offenders may lead to strategic intervention planning - targeting risk factors that are linked to violent behavior across various contexts. Two prison violence contexts were measured in the present study, chronic violence over a 12-month period and deliberately starting a fight. The current findings suggest there were similarities in personality traits explaining prison violence across contexts, but there were notable differences too. Having less than a 12th-grade education and high affective psychopathic traits explained violent misconducts. In contrast, high interpersonal and affective psychopathic traits best explained starting a violent altercation. These findings support the importance of exploring risk factors for female offenders, but also elucidate the heterogeneity in female prison violence and differences from studies with male offenders.

Although some have speculated that impulsivity is a cardinal feature of behavioral psychopathic traits (Hart & Dempster, 1997), it has not predicted prison violence in previous studies with female offenders (Thomson et al., 2016). However, prior research has neglected to consider the importance of the multidimensionality of impulsivity. Within the present study, we conducted separate regressions to assess the unique contribution of the 3-facet construct of psychopathy and 3-factors of trait impulsivity, and then a combined model to determine which psychopathy and impulsivity facets would explain violence when competing for variance. When impulsivity was entered in a separate model from psychopathy, nonplanning impulsivity was associated with violence across both contexts - violent misconducts and starting a

violent altercation. Therefore, impulsivity, specific to a lack of self-control and cognitive complexity, explained prison violence committed by female offenders. This supports prior research that has shown violent offenders to display deficits in a particular set of executive functioning skills - inhibitory control and cognitive flexibility (Baker & Ireland, 2007).

When psychopathy was entered in a separate model, education, and affective and behavioral psychopathic traits significantly explained violent misconducts, while affective and interpersonal psychopathic traits explained instigating a violent altercation. These findings suggest that different facets of psychopathy are linked to different types of violence by women. Behavioral and affective psychopathic traits were associated with official reports of violent behavior over an extensive 12-month period, suggesting that women who engage in violence over a long period of time are characterized by anger, frustration, risk-taking, boredom susceptibility, callousness, and a lack of guilt and remorse (Thomson et al., 2016). In contrast, interpersonal and affective psychopathic traits explained deliberately starting a fight with another inmate within the past 3 months. Evidence from a nationally representative sample found that narcissistic traits were associated with the use of physical force to intimidate others (Larson, Vaughn, Salas-Wright, & DeLisi, 2015). Thus, it may be that female offenders who are higher on interpersonal psychopathic traits (e.g., egocentric, socially dominant, and grandiose) may feel their superiority threatened by others and become easily offended, spurring them to be violent. Importantly, regardless of context, affective psychopathic traits explained prison violence. This finding stands in contrast to male offender samples, where the affective dimension of psychopathy has been shown to not explain prison violence (Chakhssi, Kersten, de Ruiter, & Bernstein, 2014). This may suggest that in females, having a callous lack of empathy and contempt for others plays an integral role in prison violence.

Accounting for the overlap between psychopathy and impulsivity while explaining violent misconducts revealed that nonplanning impulsivity and behavioral psychopathic traits did not remain significant. This may be due to the overlap between the two constructs in their ability to explain violent behavior in women. These results were similar when explaining the likelihood of an offender having instigated a violent altercation. However, both affective and interpersonal psychopathic traits remained significant. Thus, the association between prison violence and affective and interpersonal psychopathic traits in women seems to be independent of both impulsivity and behavioral psychopathic traits. These findings further support assertions that impulsivity and psychopathy play an important role in explaining violent behavior in women, but there may be overlap between the characteristic of being impulsive and having behavioral psychopathic traits in female offenders. Indeed, this is logical as behavioral psychopathic traits encompass features of impulsivity. However, because behavioral psychopathic traits include poor self-control, as well as antisocial characteristics and risk factors (e.g., anger, frustration, and externalizing behavior; Brinkley et al., 2008), it seems that the behavioral facet may have more versatility for explaining female violence when compared to trait impulsivity. Indeed, this is supported by the present study which showed Model 1, which only included the demographic variable and psychopathy facets, was the best fitting model when explaining violence, even when compared to the model with both psychopathy and impulsivity.

These results may be important for understanding the risk of prison violence, as well as informing sex-specific treatment programs for women. Violence interventions are largely developed and validated for use in male samples and then validated for use in female samples (Thomson et al., 2018). These interventions may be effective for reducing sex-neutral risk factors, such as impulsivity or behavioral psychopathic traits. However, our data suggests that the personality features of psychopathy play a notable role in female prison violence,

whereas prior research has not found this for men (Thomson, 2018). Therefore, interventions developed in male samples may not be fully equipped to treat female prison violence. Instead, it may be beneficial for female-specific interventions to also target maladaptive personality traits, such as callousness, a lack of empathy and remorse, and manipulateness and egocentricity, which place women at greater risk of violence.

Although educational attainment was not the primary focus of the present study, it was included in each statistical model, because it has been shown to relate to violence in both males and females (Berg & DeLisi, 2006). Education did not explain if the offender had recently instigated a violent altercation, but was significant at explaining violent misconducts committed over a 12-month period. This may be an encouraging finding, as education is considered a dynamic risk factor, which means it may be targeted by prison educational programs (Hare & Langan, 2001).

4.1. Limitations

Although our findings are novel, they should be interpreted with some limitations in mind. While prison violence is often measured from official reports of misconducts, there are times when prison violence goes unreported (Byrne & Hummer, 2007). To compensate, we included a self-report question. Nevertheless, prior research has supported the validity and reliability of official reports of prison violence (Steiner & Meade, 2016). Further, it would have been beneficial to include a clinical measure of psychopathy to assess the replicability between measures. However, prior research has called for studies to test alternative measures of psychopathy to determine their value in criminal justice outcomes (see Walters, 2012). Compared to clinical assessments, self-report measures are time and resource efficient (Christian & Sellbom, 2016), so the inclusion of the LSRP we feel was a valuable addition. Finally, we were unable to account for several important factors known to be relevant to violent behavior in women, such as childhood adversity, length of incarceration, and substance use (DeLisi et al., 2010).

4.2. Conclusion

Prison violence is a matter of widespread importance. Essentially, prisons should be as violence-free as possible to ensure the safety and welfare of inmates and staff. Unfortunately, research examining risk-factors for prison violence has focused almost exclusively on male offenders. Nevertheless, reported rates of prison violence among women are comparable to those found in male facilities (Wolff et al., 2007). In order to reduce prison violence, we must first understand what individual-level risk factors contribute to female prison violence. The present study indicates that this is especially true for understanding prison violence across multiple contexts. The present findings support sex-specific as well as sex-neutral risk factors of prison violence. That is, behavioral psychopathic traits and nonplanning impulsivity seem to explain prison violence for both men and women. However, the most consistent findings are associated with sex-specific risk factors. Higher levels of affective and interpersonal psychopathic traits, regardless of impulsivity and behavioral psychopathic traits, explained prison violence in our sample of female offenders; again, this is not typically found in male samples. Specifically, while women who were higher on interpersonal psychopathic traits were more likely to instigate a violent altercation, women who were higher on affective psychopathic traits perpetrated violence across multiple contexts – continued violence over a 12-month period and intentionally starting a violent altercation with another inmate.

Appendix A. Appendix

Table 1
Psychopathy and impulsivity explaining violent misconducts over a 12-month period.

	Violent Misconducts																		
	Model 1				Model 2						Model 3								
	B	SE	z value	CI	IRR	p	B	SE	z value	CI	IRR	p	B	SE	z value	CI	IRR	p	
Age	-0.03	0.02	-1.73	-0.06,0.00	0.97	0.084	-0.04	0.02	-2.46	-0.07, -0.01	0.96	0.073	-0.03	0.02	-1.97	-0.07, -0.00	0.97	0.049	
Ethnicity	0.62	0.37	1.67	-0.09,1.41	1.87	0.094	0.73	0.39	1.86	-0.02, 1.55	2.08	0.014	0.67	0.38	1.79	-0.06, 1.48	1.96	0.074	
Education	-0.66	0.30	-2.17	-1.26,0.00	0.52	0.029	-0.55	0.31	-1.76	-1.18, 0.07	0.58	0.063	-0.67	0.30	-2.19	-1.28, -0.06	0.51	0.029	
Psychopathy																			
Interpersonal	0.00	0.03	0.06	-0.06,0.06	1.00	0.952	-	-	-	-	-	-	0.01	0.30	0.26	-0.05, 0.07	1.01	0.792	
Affective	0.16	0.05	2.94	0.05,0.26	1.17	0.003	-	-	-	-	-	-	0.14	0.06	2.60	0.03, 0.26	1.54	0.009	
Behavioral	0.12	0.06	2.09	0.01,0.24	1.31	0.037	-	-	-	-	-	-	0.12	0.07	1.76	-0.02, 0.25	1.13	0.079	
Impulsivity																			
Motor	-	-	-	-	-	-	0.01	0.04	0.13	-0.07, 0.08	1.01	0.900	-0.01	0.04	-0.31	-0.09, 0.06	0.99	0.754	
Attentional	-	-	-	-	-	-	0.00	0.05	0.08	-0.09, 0.09	1.00	0.940	-0.05	0.05	-0.94	-0.14, 0.05	0.96	0.347	
Nonplanning	-	-	-	-	-	-	0.09	0.03	2.75	0.03, 0.16	1.10	0.006	0.05	0.04	1.33	-0.02, 0.12	1.05	0.182	
AIC	262.52						271.75						266.04						

Note. Ehtnicity (0= Caucasian, 1 = Minority); Education = Graduated high school (0= not graduate, 1 = graduated); IRR = Incident rate ratio.

Appendix B. Appendix

Table 2
Psychopathy and impulsivity explaining the likelihood of instigating a violent altercation.

	Instigating a violent altercation																		
	Model 1						Model 2						Model 3						
	B	SE	z value	CI	OR	p	B	SE	z value	CI	OR	p	B	SE	z value	CI	OR	p	
Age	-0.01	0.04	0.20	-0.09, 0.07	0.99	0.839	-0.05	0.03	-1.53	-0.12, 0.01	0.95	0.127	-0.03	0.04	-0.59	-0.12, 0.06	0.97	0.556	
Ethnicity	1.12	1.00	1.11	-0.61, 3.53	3.06	0.266	1.31	0.86	1.52	-0.19, 3.33	3.72	0.129	1.34	1.09	1.22	-0.53, 3.98	3.80	0.221	
Education	-0.79	0.78	-1.02	-2.35, 0.74	0.46	0.308	0.01	0.62	0.02	-1.19, 1.28	1.01	0.987	-0.68	0.77	-0.88	-2.24, 0.85	0.51	0.378	
Psychopathy																			
Interpersonal	0.23	0.08	2.94	0.09, 0.39	1.25	0.003	-	-	-	-	-	-	0.27	0.08	3.18	0.12, 0.45	1.30	0.002	
Affective	0.31	0.14	2.30	0.06, 0.60	1.37	0.021	-	-	-	-	-	-	0.29	0.14	2.06	0.03, 0.60	1.34	0.039	
Behavioral	-0.13	0.16	-0.81	-0.45, 0.12	0.88	0.417	-	-	-	-	-	-	-0.08	0.19	-0.44	-0.48, 0.27	0.92	0.659	
Impulsivity																			
Motor	-	-	-	-	-	-	-0.03	0.07	-0.39	-0.18, 0.12	0.97	0.689	-0.08	0.09	-0.83	-0.27, 0.10	0.92	0.408	
Attentional	-	-	-	-	-	-	0.04	0.09	0.39	-0.14, 0.21	1.04	0.692	-0.16	0.13	-0.24	-0.44, 0.08	0.85	0.216	
Nonplanning	-	-	-	-	-	-	0.18	0.07	2.55	0.05, 0.33	1.20	0.011	0.14	0.09	1.56	-0.03, 0.33	1.15	0.119	
AIC	73.79						94.83						75.38						

Note. Ethnicity (0= Caucasian, 1 = Ethnic Minority); Education = Graduated high school (1 = graduated).

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