Suicide Ideation Among Male Prisoners: Preliminary Evidence That Psychopathic Traits are Indirectly Linked to Suicide Ideation Through Thwarted Interpersonal Needs

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Abstract

Background. The relation between psychopathic traits and suicide ideation (SI) is frequently discussed but little research has examined potential mechanisms underlying this association. The interpersonal theory of suicide (ITS) proposes two mechanisms in the pathogenesis of suicidal desire: thwarted belongingness (TB) and perceived burdensomeness (PB). This study cross-sectionally tested TB and PB as possible explanatory links in the relation between psychopathic traits and SI. **Method.** Archival data from 784 male United Kingdom prisoners (M_{age} = 37.21, *SD* = 9.97) were analyzed using structural equation modeling. **Results.** Psychopathic traits were indirectly associated with SI through more specific suicide-promoting processes—namely, TB and PB. More specifically, results indicated that Egocentricity and Stimulus Seeking were indirectly associated with SI through PB and TB in combination. However, results indicated specific indirect effects of TB in the relations between the Antisocial Behavior, Egocentricity, and Stimulus Seeking facets, and SI; whereas, specific indirect effects for PB were only significant in the relations between Egocentricity and Stimulus Seeking facets and SI. **Conclusion.** Preliminary results are consistent with the ITS and suggest that psychopathic traits may be distal risk markers for SI and provide direction for future research that could inform suicide prevention efforts among male prisoners high in such traits.

Keywords: Psychopathic, thwarted belonging, perceived burden, interpersonal theory of suicide, prisoners, suicide ideation

Suicide is a leading cause of death in custodial settings across the globe (Konrad et al., 2007; Rabe, 2012). Data from 24 high-income countries indicate suicide rates among prisoners are three to nine times higher than those found in the general population (Fazel et al., 2017). In addition, international studies have documented that, during their lifetime, 15% to 21% of prisoners have attempted suicide and 34% to 44% have experienced suicide ideation (SI; Larney et al., 2012; Sarchiapone et al., 2009). These data indicate a need to examine risk factors for suicide among prisoners to inform prevention, assessment, and intervention efforts. The purpose of the current study was to further examine the association between specific psychopathic traits (Egocentricity, Stimulus Seeking, and Antisocial Behaviors), and SI through the lens of the interpersonal theory of suicide (ITS; Joiner, 2007; Van Orden et al., 2010).

Psychopathy

Psychopathy is a personality syndrome characterized by a diminished capacity for remorse, impulsive behavior, and superficial charm (Cleckley, 1976). Although several factor models have been validated using various psychopathy measures (e.g., Brinkley et al., 2008; Hare et al., 2018; Patrick et al., 2009), a two-factor solution has largely dominated the literature. Within this model, Factor 1 captures the callous and unemotional personality style indicative of psychopathy; whereas, Factor 2 is comprised of impulsivity, a deviant lifestyle, and, in some measures, antisociality (Hare & Neumann, 2010). These two factors have divergent relations with a number of psychological and social variables in incarcerated samples and across assessment methods. For example, Factor 1 has been associated with low anxiety, positive adjustment, social dominance, and emotional detachment[1] (e.g., Benning et al., 2003; Patrick et

[1] Greater detail on the relationships between psychopathic traits and negative affect can be found elsewhere (e.g., Garofalo et al., 2019; Kosson et al., 2015).

al., 1993; Schmitt & Newman, 1999); whereas, Factor 2 has a unique association with more general externalizing tendencies, recidivism, and neuroticism (e.g., Benning et al., 2003; Hemphill et al., 1998).

Another way of conceptualizing the psychopathy construct (and thus the relations between psychopathy and SI) involves the triarchic model (Patrick et al., 2009). The triarchic model represents three distinct but intersecting phenotypic dispositions: Boldness, Meanness, and Disinhibition. Boldness encompasses social confidence, emotional resilience, venturesomeness, and similar constructs (e.g., fearless dominance). Meanness is characterized by emotional callousness, lack of affiliative capacity, low empathy, manipulativeness, and antagonism. Disinhibition entails impulsivity, weak constraint, hostility, and poor emotion regulation. These three factors have divergent relations with various psychological and social variables (Patrick et al., 2009), including general externalizing tendencies (e.g., antisocial behavior, substance abuse), recidivism, and psychopathology (for a review, see Patrick & Drislane, 2015).

Psychopathic Traits and Suicide

Psychopathic traits have historically been viewed as protective against suicide due to the egocentricity and low levels of negative emotionality presumed to be common among individuals high in psychopathic traits (Cleckley, 1976). However, recent research has shown more nuanced relations between psychopathic traits and suicidal thoughts and behaviors (see Dhingra et al., 2018). Research with various samples and assessment methods typically demonstrates a bifurcated relation, such that Factor 1 (interpersonal-affective traits) is orthogonal or negatively related to suicide attempt history (Douglas et al., 2006, 2008; Heirigs et al., 2018; Swogger et al., 2009; Verona et al., 2001, 2005) and current SI (Douglas et al., 2006, 2008;

Gunter et al., 2011); whereas, Factor 2 (antisocial-lifestyle traits) is positively correlated with suicide attempt history (Douglas et al., 2006, 2008; Gunter et al., 2011; Smith et al., 2014; Swogger et al., 2009; Verona et al., 2001, 2005) and current SI (Douglas et al., 2006, 2008; Heirigs et al., 2018; Gunter et al., 2011; Smith et al., 2014). Greater detail on the relations between psychopathic traits and suicide risk can be found elsewhere (e.g., Dhingra et al., 2018; Douglas et al., 2006).

Recent research has also linked Patrick et al.'s (2009) triarchic constructs to SI. Specifically, Disinhibition and (low) Boldness have been found to positively predict SI when assessed via self-report and composite psychological/neurological ("psychoneurometric") indices in samples of young adult men, adult twins, and adult psychiatric outpatients (Venables et al., 2015, 2018). In sum, research has indicated that psychopathic traits, depending on how they are conceptualized, are linked to suicidal thoughts and behaviors; however, it remains unclear how these findings may be conceptualized through a contemporary theoretical framework of suicidal behavior.

The Interpersonal Theory of Suicide (ITS)

The ITS (Joiner, 2005; Van Orden et al., 2010) has the potential to enhance our understanding of the relations between psychopathic traits and SI. The ITS suggests SI results from the combined presence of two interpersonal deficits: perceived burdensomeness (PB; indicated by feelings of liability and self-hatred) and thwarted belongingness (TB; indicated by feelings of social disconnectedness and low reciprocal care). SI is thought to develop when one is hopeless about the improvement of these cognitive-affective states (Van Orden et al., 2010). Furthermore, SI is posited to translate into action, in the form of suicide attempt, only in the presence of an additional third construct, capability for suicide (Joiner, 2007; Van Orden et al.,

2010), which is consistent with other modern ideation-to-action theories of suicide (i.e., Integrated Motivational-Volitional Model [IMV; O'Connor & Kirtley, 2018], the Three-Step Theory of Suicide [3ST; Klonsky & May, 2015]).

Of note, the ITS postulates that TB and PB represent proximal predictors of SI and, as such, may account for (i.e., statistically mediate) the relations between various suicide risk factors and suicidal thoughts and behaviors (Van Orden et al., 2010). The ITS has been extensively researched and has gained empirical support (for a review, see Chu et al., 2017). Of particular relevance to the current research, in explicit tests of mediation, the ITS variables have been found to mediate the effect of other distal risk factors for suicide such as perfectionism and alcohol-related problems (e.g., Lamis & Malone, 2011; Rasmussen et al., 2012). The current study only focuses on the indirect effects of specific psychopathic traits (Egocentricity, Stimulus Seeking, and Antisocial Behaviors), through TB and PB given that SI is the outcome of interest. Therefore, suicide capability is not addressed in the current study.

Psychopathic Traits, Unmet Needs, and SI

There is limited information about psychopathic traits' association with SI within the context of the ITS. Among undergraduates who completed the Levenson Self-Report Psychopathy Scales (LSRP; Levenson et al., 1995), Anestis et al. (2016) found that both the impulsive–antisocial factor (Factor 2) and the interpersonal–affective factor (Factor 1) were positively correlated with TB and PB; however, only Factor 2 was uniquely positively associated with TB and PB. Similarly, among male prisoners, Factors 1 and 2 were positively correlated with proxies of TB and PB; however, overall, Factor 2 was most often uniquely positively associated with proxies of TB and PB. In a military sample, Harrop et al. (2017) found that all three LSRP factors (Egocentricity, Callous, and Antisocial) uniquely positively predicted PB

when controlling for other LSRP factors, whilst the LSRP-Antisocial and LSRP-Callous factors were unique positive predictors of TB, when controlling for other measure factors. Somewhat differently, in their undergraduate sample, Harrop et al. (2017) found that the LSRP-Egocentricity and LSRP-Antisocial factors each uniquely positively predicted PB, and the LSRP-Antisocial factor uniquely positively predicted TB.

Using Patrick et al.'s (2009) triarchic constructs in their undergraduate sample, Harrop et al. (2017) found an inverse relation between Boldness, and TB and PB; whereas, Meanness and Disinhibition were positively related to TB and PB. Similarly, Buchman-Schmitt et al. (2017) found that both Disinhibition and (low) Boldness were uniquely positively associated with PB and TB among young adults who endorsed a history of suicide attempts and/or SI. Further, they observed specific interactive effects whereby Boldness served as a protective factor against PB and TB. Finally, among gun-owning adults, Disinhibition, but not Meanness (which was negatively related), was positively related to PB, and both Meanness and Disinhibition were positively related to TB. Furthermore, Boldness exerted a buffering effect on the relation of Disinhibition to PB (Anestis et al., 2018).

It warrants mention that the various psychopathy measures used in previous research are not isomorphic. As such, associations between specific psychopathic traits and SI might depend on the operationalization of psychopathy. However, collectively, the above research suggests that both Factor 1/Boldness (dispositional fearfulness) and appears to confer protection against SI; whereas, Factor 2/Disinhibition confers risk towards the development of SI. Despite largely converging findings, there remains a relative lack of research investigating the theory-driven factors underlying this relation.

The Current Study

Although there is evidence supporting the idea that Factor 2/Disinhibition psychopathic traits are positively related to SI, there is a paucity of information on how interpersonal deficits may explain these associations. Such information could inform treatment initiatives for prisoners, who are at elevated risk for psychopathic traits (Coid et al., 2009) and suicidal thoughts and behaviors (e.g., Larney et al., 2012). The present study aimed to address this conceptual and empirical gap in the literature by investigating potential mechanisms underlying the relation between psychopathic traits and SI. Consistent with the ITS, which suggests that the simultaneous experience of TB and PB produces SI (Van Orden et al., 2010); we tested PB and TB as parallel mediators of the relation between psychopathic traits (Egocentricity, Stimulus Seeking, and Antisocial Behaviors) and SI. This allowed for the test of the total or additive indirect effects of TB and PB, as well as the specific or unique indirect effects of TB or PB when adjusting for the other mediator variable (Roush et al., 2018). This approach is consistent with previous research testing specific and total indirect effects with TB and PB as intervening variables (e.g., Brown et al., 2019).

We predicted that TB and PB, and two of the psychopathy facets (i.e., Stimulus Seeking and Antisocial Behaviors), representing Factor 2, would be positively correlated with SI, but the facet representing Factor 1 (i.e., Egocentricity) would be negatively correlated to SI. Given that all three psychopathic traits constructs are theoretically, and to some extent empirically, linked to SI via interpersonal deficits, we also hypothesized psychopathic traits would be indirectly linked to SI through TB and PB. Specifically, Factor 1 and 2 traits would be positively related to TB and PB, which would be consistent with previous literature (e.g., Buchman-Schmitt et al.,

2017; Harrop et al., 2017). TB and PB would then, in turn, be positively associated with SI, which is consistent with previous literature as well (e.g., Chu et al., 2017).

Methods

Participants

Participants were 786 male prisoners aged between 18 and 73 years (M = 37.21, SD = 9.97). Participants were predominately White (80.8%), followed by Black (10.8%), multiracial (4.8%), Asian (3.3%), and "other" (0.1%); race data was missing for one participant. The majority of participants were single/never married (76.5%) and serving a life sentence (76.5%). The most common index offenses were murder (34.7%), robbery (13.5%), and rape (12.1%). On average, participants' current sentence was 74.29 months (SD = 63.21 months), and they had 3.92 (SD = 4.37) previous custodial sentences. Additionally, 184 (23.5%) participants had been placed in segregation housing as a punishment during their current sentence. Participants had spent an average of 2.75 weeks (SD = 13.8 weeks) in segregated housing during the past year. Although psychiatric diagnosis data were not available for this sample, 39.1% of participants reported a suicide attempt history (31 participants were missing data), and 26.2% reported a history of non-suicidal self-injury (33 participants were missing data).

Procedure

Archival data were received from a category B (high security) prison[2] in the South-East of the United Kingdom, that operates entirely as a democratic Therapeutic Community (TC)[3].

[2] Category B prisoners do not need to be held in the highest security conditions; however, for category B prisoners, the potential for escape should be made very difficult.

[3] Democratic Therapeutic prisons provide group-based therapy within a social climate that promotes positive relationships, personal responsibility and social participation. Therapeutic

The prison is comprised of six TCs. This includes one assessment/treatment preparation unit and five residential communities, including one wing for men whose offending has been sexually motivated and one wing for men with learning disabilities. To be accepted into the prison, men must voluntarily apply and meet the following criteria: a) convicted of a crime and sentenced, b) have at least 18 months remaining on their sentence, c) demonstrate "treatment readiness" (as indicated by no recent involvement in violence, drug use or self-harm, as well as a willingness to change), and d) have no active symptoms of major mental illness (Bennett & Shuker, 2017). Upon reception, individuals undertake a comprehensive psychological assessment selected and administered by prison staff relating to his personality, background, and criminal history. Data from these reception batteries were de-identified and provided to the researchers for archival data analysis in the present study. Ethical approval was obtained from all necessary institutions (i.e., the prison and universities ethics boards). These data were archival, provided to the researchers by the prison. The data received by the researchers were deidentified and did not contain personally identifiable information. Thus, all data were anonymous.

Measures

Personality Assessment Inventory (PAI). The PAI (Morey, 1991) is a 344-item self-report assessment of clinical variables, including symptoms, treatment response, and interpersonal style. Items are rated on a four-point ordinal response metric ranging from "false, not at all true" to "very true." As discussed in depth below and consistent with previous studies (i.e., Anestis et al., 2016; Cramer et al., 2012), the current study uses the scales/subscales of Nonsupport (NON), Borderline Features–Self-Harm (BOR-S), Schizophrenia–Social

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Communities address a range of offender needs including interpersonal relationships, emotional regulation, self-management, and psychological wellbeing (see Bennett & Shuker, 2017).

Detachment (SCZ-S), and Depression–Cognitive (DEP-C) to construct proxy measures of the ITS constructs. Specifically, NON and SCZ-S contribute to the TB proxy and DEP-C to the PB proxy. Morey (1991) reported the following Cronbach's alpha values in a combined community/student validation sample: NON = .78, BOR-S = .78, SCZ-S = .83, and DEP-C = .77. Additionally, we will use scales from the PAI for the assessment of psychopathic traits and SI.[4]

Thwarted belongingness (TB). TB was assessed using the NON treatment scale and SCZ-S scale. The NON scale assesses a lack of perceived support (e.g., "My friends are available if I need them" [reversed]), quality of support (e.g., "People I'm close to are very supportive"), and an individual's social interactions (e.g., "I spend most of my time alone"). The SCZ-S subscale assesses social isolation (e.g., "I don't feel close to anyone") and close relationships (e.g., "I just don't seem to relate to people very well"). Therefore, greater higher scores on NON and SCZ-S were used to indicate elevated TB. Cramer et al. (2012) published a well-fitting model that included the NON and SCZ-S scales as manifest indicators of a latent TB variable, which is consistent with and provides support for the approach taken in our study.

Perceived burdensomeness (PB). PB was assessed using the DEP-C subscale, which measures individuals' sense of competence or self-efficacy (e.g., "I feel that I've let everyone down"). Thus, higher scores on DEP-C was used to indicate elevated PB. Given that DEP-C is a single indicator, and we lacked item-level data to model DEP-C as a latent variable, DEP-C scores were used to represent PB in our analyses. Again, our use of DEP-C as a proxy for PB is consistent with Cramer et al. (2012).

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[4] Because the PAI was administered at the prison and only the scale T-scores were recorded, raw and item-level data were not available for analysis. Therefore, Cronbach's alphas cannot be reported.

Psychopathic traits. Psychopathic traits were assessed using the Antisocial Behaviors (ANT-A), Egocentricity (ANT-E), and Stimulus Seeking (ANT-S) scales. The ANT-A scale assesses one's history of conduct problems and illegal behaviors. The ANT-E scale assesses self-centeredness and a lack of empathy or remorse. Higher scores on these scales indicate greater psychopathic traits. These scales have also been used as proxies for psychopathic traits where ANT-E represents Factor 1 and ANT-S and ANT-A represent Factor 2 (e.g., Douglas et al., 2008). Because we were particularly interested in the psychopathic traits scales separately, we did not model these scales as a latent variable. The PAI-ANT scores have been found to relate moderately to strongly to PCL-R and PPI total scores (r = .39 to .74; Douglas et al., 2008; Edens et al., 2000). Morey (1991) found a strong Cronbach's alpha (.84) among men.

Suicide ideation. SI was measured using the 12-item Suicide Ideation (SUI) treatment scale (Cronbach's alpha = .85 to .93; Morey, 1991). Higher scores indicate greater suicidal thoughts and feelings. None of the items on SUI overlap with items from any other PAI subscale. Consistent with Cramer et al. (2012), SUI was not modeled as a latent variable given that SUI is a single indicator. We also lacked item-level data to model SUI as a latent variable. Among clinical and corrections samples, SUI scores have been associated with other self-report measures of SI, as well as suicide precaution status (Morey, 2014; Patry & Magaletta, 2015). In the current sample, 37.5% of participants had a score of 60 or greater, which is 1 *SD* above the average score of 50 on the PAI. Additionally, 22.1% had a score higher than 69T, which would high suicide risk (2 *SD* above the mean).

Data Analysis Plan

A structural equation model (SEM) was constructed to test the hypotheses using maximum likelihood estimation in Mplus version 8 (Muthén & Muthén, 2017). The

psychopathic traits scales (ANT-A, ANT-E, ANT-S) were the predictor variables, the TB (NON and SCZ-S latent variable) and PB (DEP-C) variables were the mediating variables, and the SI scale (SUI) was the outcome variable. We used 10,000 bootstrapped samples to construct bias-corrected 95% confidence intervals. Direct and indirect effects were estimated using MODEL INDIRECT, where CI not containing zero indicated a significant indirect effect (Preacher & Hayes, 2008). Significant *specific* indirect effects indicate that there was a significant indirect effect through TB *or* PB when adjusting for the other (see Preacher & Hayes, 2009). Significant *total* indirect effects indicate a significant additive indirect effect of TB *and* PB (see Preacher & Hayes, 2008). This is consistent with the ITS proposition that TB and PB are risk factors for SI, and with previous research testing specific and total indirect effects with TB and PB as intervening variables (e.g., Brown et al., 2019).

Model fit was assessed using the goodness of fit χ^2, the root mean square error of approximation (RMSEA), the comparative fit index (CFI), the Tucker Lewis Index (TLI), and the standardized root mean square residual (SRMR). Good model fit is indicated by a nonsignificant χ^2 statistic, an RMSEA value less than .06, a CFI and TLI greater than .95, and a SRMR value less than .08 (Hu & Bentler, 1999). It should be noted that with large samples, like in the current study, the χ^2 statistic tends to be statistically significant even with good-fitting models; therefore, other fit indices were more strongly considered. Modifications indices were examined when model fit was poor, which is discussed in more detail below.

Results

Data Screening and Preparation

The data set originally contained data from 2,699 prisoners. We removed participants who were not administered the PAI, which yielded a sample of 985 prisoners. Next, we removed

participants who had validity scale scores that indicated an invalid profile consistent with PAI profile clinical interpretation (Morey, 1991), which produced a sample of 786 participants.[5] We compared demographic variables between those with valid or invalid profiles, which indicated were no significant differences by age ($F[1, 893] = 1.12$, $p = .289$), race ($\chi^2[4, N = 984] = 1.14$, $p = .887$), marital status ($\chi^2[8, N = 935] = 3.70$, $p = .884$), or if they were serving a life sentence ($\chi^2[81, N = 985] = .56$, $p = .454$). We identified six univariate outliers where a score was ± 3.29 *SD* from the mean; these participants' scores were Winsorized and retained for analyses. We identified two multivariate outliers using Mahalanobis Distance scores, which were excluded from analyses; therefore, 784 participants were included in the analyses. Bivariate correlations and descriptive statistics are presented in Table 1.

[5] The following criteria were used to determine invalid profiles: ICN > 73T, INF > 75T, NIM ≥ 92T, PIM > 68T. There were 199 participants who had an invalid profile based on at least one of the validity scales.