Substance use in incarcerated male offenders: Predictive validity of a personality typology of substance misusers

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HIGHLIGHTS

- A personality typology of substance misusers is modeled in a male offender sample.
- Three clusters based on severity of substance use and psychopathology emerge.
- There is a trend for the severe group to engage in institutional substance use faster.
- Sensation seeking levels are associated with increased risk of drug use while jailed.

ARTICLE INFO

ABSTRACT

Introduction: Substance use and misuse is highly prevalent in offenders, and a significant proportion of convicted offenders continue to use controlled substances during incarceration. Few studies have focused on the identification of variables, especially personality characteristics, that may be predictive of institutional substance use. The purpose of this study is to assess the validity of the Substance Use Risk Profile (SURP) personality typology in a sample of male offenders and to determine whether it may have utility in identifying offenders at risk for substance use during incarceration.
Methods: A total of 118 offenders across all provincial and federal institutions in New Brunswick, Canada completed questionnaires assessing personality, mental health symptoms, substance use motives, and substance use.
Results: Latent class cluster analysis revealed the presence of three distinct clusters of offenders based on severity of substance use, personality, and mental health symptoms. Survival analysis indicated a significant effect of levels of sensation seeking, a trend of cluster membership, and anxiety sensitivity on days until first institutional substance use. Conclusion: High levels of sensation seeking and low anxiety sensitivity appear to indicate increased risk for substance misuse in this population.

1. Introduction

Between 10 and 48% of incarcerated men have a Substance Use Disorder (SUD; Fazel, Bains & Doll, 2006), making this class of disorders the most common mental health concern in offenders (Brink, 2005). Substance misuse appears directly tied to criminal activity. For example, it has been estimated that illicit substances were consumed on the day of incarceration in 69% of assaults, 58% of homicides, 56% of both break and enters and robberies, and 45% of sexual assaults (Brochu et al., 2001). In addition, drug-related incarceration has steadily increased in North America, with approximately 30% of offenders in the United States and 25% in Canada incarcerated for drug-related crimes (Correctional Service of Canada, 2006; Grant, 2009; Kuziemko & Levitt, 2004).

Substance use does not necessarily halt upon incarceration. Inmates may access licit and illicit substances through visitors, correctional staff, prescription drug diversion, etc. (MacPherson, 2004; Pinkilton & Pinkilton, 2014). It remains a challenge to estimate the prevalence of substance use within institutions. In Canada, urinalysis is only performed monthly on a random sample of 5% of inmates. Despite this, approximately 12% of Canadian offenders have positive urine screens annually, most commonly for marijuana, benzodiazepines, opiates, and cocaine Correctional Service of Canada (2004). The threat of disciplinary action is not sufficient for all offenders to curb their substance use behavior. Following a ban of indoor smoking, 93% of smokers reported smoking inside their correctional institutions (Lasnier et al., 2011). In one study, 20% of male offenders reported that they had consumed illicit substances during their current incarceration term (Rowell, Wu, Hart, Haile & El-Bassel, 2012). These numbers are

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concerning as substance use is a predictor of criminal recidivism and mortality post-release (Håkansson & Berglund, 2012; Håkansson and Berglund, 2013; Norberg, Mackenzie & Copeland, 2012).

Despite the established link between personality risk factors and antisocial behaviors (Gunn, Finn, Endres, Gerst & Spinola, 2013; Krueger, Markon, Patrick, Benning & Kramer, 2007), little attention has focused on investigating the predictive value of personality characteristics for targeting institutional substance use. Fifteen years ago, a unique personality typology positing that four orthogonal personality risk factors were associated with distinct preference for certain substances, different motives for use, and specific forms of comorbid psychopathology emerged (Conrod et al., 2000). Since this time, several studies have demonstrated the utility of this motivational theory of addiction in delineating the etiology of addiction and effectively targeting its manifestations (Castellanos & Conrod, 2006; Conrod, Castellanos-Ryan & Mackie, 2011; Conrod, Castellanos-Ryan & Strang, 2010). The Substance Use Risk Profile (SURP) typology includes introversion hopelessness (I/H), anxiety sensitivity (AS), sensation seeking (SS) and impulsivity (IMP). AS is conceptualized as a personality style that centers around the belief that somatic sensations lead to physical discomfort, embarrassment, or loss of mental control (Conrod, 2006; Lefaivre, Watt, Stewart & Wright, 2006). High AS has been associated with the development of anxiety disorders (Conrod, 2006; Conrod et al., 2000). Therefore, these individuals are motivated to use alcohol or sedatives via negative reinforcement processes (i.e., coping with anxiety; Conrod et al., 2000; Woicik, Stewart, Pihl & Conrod, 2009). I/H captures increased sensitivity to punishment, preference for opioids, and motivation to use in order to numb painful emotions (Blackwell, Conrod & Hansen, 2002; Conrod et al., 2000; Woicik et al., 2009). The third SURP subtype is SS, which is associated with a tendency to seek out novel and stimulating experiences (Conrod et al., 2000; Woicik et al., 2009). SS is linked to binge drinking and frequency of alcohol use (Castellanos-Ryan, Rubia & Conrod, 2011) which is driven by enhancement motives; that is, a desire to experience the euphoric effects of alcohol (Stewart & Devine, 2000; Woicik et al., 2009). The final SURP subtype, IMP, is conceptualized as a self-regulation deficit that leads to a lack of inhibition in the face of reward, despite possible negative consequences (Woicik et al., 2009). Therefore, individuals high in IMP are sensitive to substances that provide immediate reinforcement (e.g., stimulant use) and to polysubstance misuse (Conrod et al., 2000a). Woicik and colleagues (2009) found that IMP was uniquely related to stimulant use and social, enhancement, coping, and conformity motives. Furthermore, high IMP increases risk for conduct disorder (Castellanos-Ryan et al., 2011; Castellanos-Ryan, O'Leary-Barrett, Sully & Conrod, 2013) and antisocial personality disorder (Conrod, Pihl, Stewart and Dongier, 2000).

Several other personality models, such as the tridimensional theory of personality (Cloninger, Przybeck & Svrakic, 1991), the Big three (Eysenck & Eysenck, 1976) and Big five factor models (Costa & McCrae, 1992) have been found to be somewhat related to substance misuse (Kotov, Gamez, Schmidt & Watson, 2010; Sher, Bartholow and Wood, 2000. The personality subtypes that consist of the SURPS are conceptualized as lower order dimensions of these broader models of personality (see Woicik et al., 2009 for correlations between the SURPS and other personality inventories). Interestingly, the SURPS shares stronger relationships with substance misuse indicators and has incremental validity in predicting substance misuse over instruments such as the NEO-Five Factor Inventory (NEO-FFI). Hence, the SURPS may capture substance use risk more accurately than overarching models of personality and may provide better insight into the prediction and management of addictive disorders.

To our knowledge, only two studies have explored the SURP model in incarcerated offenders. In a study comparing female offenders to a non criminal sample matched on sociodemographic variables, high SS, IMP and stimulant use significantly distinguished the offender sample from the community participants (Brunelle, Douglas, Pihl & Stewart, 2009). Hopley and Brunelle (2012) also noted high levels of SS and

IMP in incarcerated male offenders. In addition, high IMP and low AS were found to mediate the relationship between psychopathic traits and SUDs. While the SURP typology has been validated in community female substance abusers (Conrod, Pihl, Stewart and Dongier, 2000) as well as in adolescents (Woicik, Stewart, Pihl & Conrod, 2009), it is our understanding that no study has attempted before to assess the generalizability of the SURP typology in offenders. The first goal of this study was to validate the SURP model in a forensic sample by examining the relationships between I/H, AS, SS and IMP, distinct patterns of substance use and motives for use as well as comorbid mental health symptoms (including psychopathic traits). Another goal was to determine whether the SURP model may have utility in identifying offenders at risk for using illicit or controlled substances during incarceration.

2. Method

2.1. Participants

The sample included 132 male, non-remand incarcerated offenders, serving either provincial ($n = 69$; serving up to two years less a day) or federal sentences ($n = 49$; serving two or more years) from correctional institutions in Atlantic Canada. Some individuals ($n = 14$) were excluded from the sample due to incomplete questionnaires or response distortions (i.e., exceeded cut-offs on questionnaire validity scales, etc.) resulting in a final sample of 118 participants (see Table 1 for details). Participants varied in the extent of their criminal history with an average of 7.2 ($SD = 8.24$) criminal convictions. At the time of participation, on average, participants were serving sentences for five of thirteen crime categories ($SD = 2.93$), the most commonly reported convictions were thefts (44.1%), assaults (34.7%), breach of conditions (29.7%) and substance-related offenses (23.7%).

2.2. Materials

Participants completed a package of questionnaires presented in a counterbalanced order in a group setting. The principal investigator briefly explained how to complete the questionnaires and answered any relevant questions during the administration of the measures. A questionnaire was developed by the authors to ascertain demographic characteristics and criminal history and substance use information. In addition, the following measures were administered:

The Substance Use Disorder Diagnostic Schedule Questionnaire (Hoffmann & Harrison, 1995; SUDDS-Q) was used to assess probable SUDs. Participants were asked to report, for the year prior to incarceration, on their use of a variety of substances. This self-report version of a diagnostic interview is based on the DSM-IV diagnostic criteria for substance abuse and dependence (American Psychiatric Association, 2000). To better reflect the revised criteria of the DSM-5 (American Psychiatric Association, 2013), a single SUD variable was created for each category of substances (Alcohol Use Disorder $\alpha = .95$; Opiate Use Disorder $\alpha = .97$; Sedative Use Disorder $\alpha = .97$; Stimulant Use Disorder $\alpha = .97$). This instrument has been used successfully in the past with offenders (Brunelle et al., 2009; Hopley & Brunelle, 2012).

The Substance Use Risk Profile Scale (SURPS; Woicik et al., 2009) was used to examine the personality dimensions of I/H, AS, SS, and IMP. Overall, the SURPS possesses good to excellent psychometric properties (see Conrod, 2006; Conrod et al., 2008; Woicik et al., 2009). In the current study, the SURPS subscales possessed good internal consistency (I/H $\alpha = .78$; AS $\alpha = .71$; IMP $\alpha = .78$; SS $\alpha = .72$). Although the reading level of the SURPS has not been directly ascertained, it has been used reliably in adolescents (Median age = 14 years; Conrod et al., 2010; Conrod et al., 2013) and offenders (Brunelle, Douglas, Pihl & Stewart, 2009).

A modified version of the Drinking Motives Questionnaire-Revised (MDMQ-R; Cooper, 1994) was completed by participants to assess motives for use of participants' substance of choice. This is the most