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Attention deficit hyperactivity disorder in a Canadian prison population

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ABSTRACT

Previous research has shown that a significant percentage of offenders are affected by adult attention deficit hyperactivity disorder (ADHD) and its related symptoms, however it is unknown the extent to which this disorder affects federal inmates in Canada and the impact ADHD has on key correctional outcomes. Four hundred and ninety-seven male federal offenders were assessed at intake over a fourteen month period using the Adult ADHD Self-Report Scale (ASRS). Approximately 16.5% scored in the highest range, which is consistent with the clinical threshold for diagnosis for the disorder; a further 25.2% reported sub-threshold symptoms in the moderate range. ADHD symptoms were found to be associated with unstable job history, presence of a learning disability, lower educational attainment, substance abuse, higher criminal risk and need levels, and other mental health problems. ADHD symptoms were also found to predict institutional misconduct. Additionally, offenders with high levels of ADHD symptomatology fared more poorly on release to the community. Implications for institutional behavior management and the need for additional resources and adapted interventions are discussed.

1. Introduction

Attention deficit hyperactivity disorder (ADHD) is a neurobiological disorder characterized by difficulties in regulating attention, activity, and impulsivity (APA, 2000). The literature has isolated three types of ADHD: the predominately inattentive type, the predominantly hyperactive–impulsive type, and the combined type. While high levels of ADHD symptoms are required to reach the threshold for a clinical diagnosis, recent research has shown that problems associated with ADHD are evident with lower levels of symptomology as well. This research suggests that the disorder actually exists on a continuum, with severe symptoms at the upper end of the spectrum (Levy, Hay, McStephen, Wood, & Waldman, 1997; Lubke, Hudziak, Derks, van Bijsterveldt, & Boomsma, 2009).

Although more commonly diagnosed in childhood and adolescence, symptoms persist into adulthood for many individuals. Recent epidemiological studies estimate the adult prevalence rate of ADHD in the general population to be 2–5% (Faraone, Sergeant, Gillberg, & Biederman, 2003; Fayyad et al., 2007; Kessler et al., 2006; Rosler et al., 2004; Simon, Czobor, Balint, Meszaros, & Bitter, 2009), with rates typically being higher for men. While there is a wide range of rates estimated for ADHD in adult forensic populations, most are considerably higher than among non-offender populations, ranging from 4% to 72% in American and European forensic samples (Eme, 2009; Eyestone & Howell, 1994; Ghanizadeh, Mohammadi, Akhondzadeh, & Sanaei-Zadeh, 2011; Rasmussen, Almvik, & Levander, 2001; Retz et al., 2004; Rosler et al., 2004; Westmoreland et al., 2010). There is currently no information on the prevalence of ADHD among Canada's federal offender population.

Deficiencies in self-control and self-regulation characterizing adult ADHD have been theoretically and empirically linked to criminal behavior, a likely factor behind the higher than expected prevalence rates in offender populations. Studies have confirmed that low levels of self-control are predictive of a variety of antisocial and criminal behaviors (Gottfredson & Hirschi, 1990; Longshore, 1998; Pratt, Cullen, Blevins, Daigle, & Unnever, 2002; Vazsonyi, Pickering, Junger, & Hessing, 2001). Pratt and Cullen (2000) argue that low self-control is consistently one of the strongest correlates of crime regardless of how self-control is measured.

Other explanations for the link between ADHD and criminality focus on the high rates of psychiatric comorbidity between ADHD and other mental health diagnoses typical of forensic populations. Strong associations have been found between ADHD and mood and anxiety disorders (Biederman, 2004; Kessler et al., 2006), as well as antisocial personality disorder (APD) and psychopathy (Collins & White, 2002; Einarsson, Sigurdsson, Gudjonsson, Newton, & Bragason, 2009; Langevin & Curnoe, 2011; Westmoreland et al., 2010; Young et al., 2009). Some researchers have gone so far as to claim that severe antisocial personality disorder is directly explained by the neurological symptoms that are features of ADHD (Langevin & Curnoe, 2011). Links between ADHD and substance abuse have also been reported (Biederman, Wilens, Mick, Faraone, & Spencer, 1998; Mannuzza, Klein, Bessler, Malloy, & LaPadula, 1998; Sullivan & Rudnik-Levin, 2001). High rates of substance abuse, antisocial personality disorder, and other psychological disorders are routinely found in forensic

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populations (Diamond, Wang, Holzer, Thomas, & Cruser, 2001; Fazel & Danesh, 2002; Kunic & Grant, 2006; Steadman, Osher, Robbins, Case, & Samuels, 2009).

Although it has been well-established in the literature that ADHD is prevalent in correctional populations, few studies to date have examined the influence of ADHD on a range of correctional outcomes for adult offenders as well as its implications for institutional management. Offenders with ADHD may have more trouble adjusting to the constraints of incarceration as well as increased difficulty following the rules of the institution and managing relationships with other offenders (Pratt et al., 2002). A recent study of incarcerated male offenders in the UK found that ADHD had a significant effect on the total number of critical incidents as well as the severity of incidents occurring in a Scottish prison (Young et al., 2009).

There is presently a lack of research on the precise relationship between adult ADHD and criminal recidivism. Studies in this area have focused predominantly on young offenders, with results generally supporting the finding that ADHD is a risk factor for recidivism among youths (Putnins, 2005). However, there is some evidence that ADHD in this population is only predictive of recidivism in the presence of conduct disorder (Soderstrom, Sjodin, Carlstedt, & Forsman, 2004). Fewer studies have been conducted with adult offenders; but it is also possible that ADHD increases the risk of reoffending particularly when combined with antisocial personality disorder.

The purpose of the present study is to estimate the prevalence of symptoms consistent with ADHD in a sample of male Canadian federal offenders, to examine the relationship between various levels of ADHD symptomatology and institutional outcomes such as program participation and institutional misconducts, and to investigate the relationship between ADHD symptoms and outcomes on community release from prison.

2. Method

2.1. Participants

Participants were 497 male inmates newly admitted to a federal correctional reception center located in the Pacific region of Canada over a fourteen month period. The sample includes all consecutive admissions who agreed to the assessment, representing 97% of all incoming offenders in that region. Demographic information on the sample is presented in Table 1.

The Adult ADHD Self-Report Scale (ASRS) was administered to consenting participants in paper-and-pencil format by psychology staff members and results were subsequently entered into a database by a mental health team member. Administration of the full scale ASRS took approximately 5 to 8 min.

2.2. Measures

ADHD symptoms were measured using the ASRS (Kessler et al., 2005), an 18-item measure rated on 5-point Likert scale. Each item corresponds to the DSM-IV criteria for ADHD. Internal consistency of this measure has been reported as high with Cronbach's alpha coefficients of 0.88 to 0.89 (Adler et al., 2006). Concurrent validity is also high, with correlations of 0.84 between the ASRS and other ADHD rating scales, including the semi-structured clinical ADHD Rating Scale (ADHD-RS) and the semi-structured clinical interview for recent DSM-IV adult ADHD (Adler et al., 2006). Note that the purpose of this measure is not to unilaterally diagnose ADHD, rather to identify individuals who are likely to meet the clinical criteria for ADHD resulting from a psychiatric assessment. DSM-IV criteria for ADHD state that some symptoms must have been present prior to age seven and that symptoms should not be better accounted for by another psychological disorder (APA, 2000). The calibration process for the ASRS was conducted by comparing scale ratings with blind clinician assessments of ADHD using semi-structured interviews (Kessler et al., 2005).

Dependent variables for this study were dichotomous measures of program completion, institutional misconduct, and recidivism. Program participation was determined based on the completion status recorded for the first correctional program assignment after administration of the ASRS. Completion is defined as attendance at all program sessions ($n = 329$). Non-completion is defined as termination of the program assignment for reasons including voluntary withdrawal, institutional misconduct, program cancelation, institutional transfer, or parole ($n = 35$). A number of participants were not enrolled in a correctional program ($n = 133$), and were excluded from this portion of the analyses.

Institutional misconduct was measured by the presence of an institutional charge on participants' file. Institutional charges may be incurred for displaying behavior contrary to institutional rules, disobeying rules, breaching security or committing violent or harmful acts during incarceration. Over half of the sample had received at least one institutional charge during their sentence ($n = 319$).

Recidivism was measured as a return to federal custody after initial release. Reasons for a return to custody could include breaches of parole conditions as well as the commission of new offenses. Participants who had not been released into the community were excluded from these analyses ($n = 62$). A time-at-risk variable was created to account for varying time spent in the community by each participant. Average time-at-risk was 1.09 years ($SD = 0.80$).

A computerized database maintained by the Correctional Service of Canada contains information on program participation, disciplinary reports, and returns to federal custody after release. This database was used to extract the relevant data.

2.3. Analysis

Prevalence of ADHD symptoms was estimated based on ASRS scoring recommendations outlined in Kessler et al. (2005). Participants were grouped into four ADHD symptom categories: None, Low, Moderate, and High. A psychiatric diagnosis of adult ADHD requires current and persistent symptoms originating in childhood (Pary et al., 2002; Wilens, Biederman, & Spencer, 2002); however, a rating of High on the ASRS is considered to meet the clinic threshold for ADHD symptoms and is most likely to warrant a diagnosis of the disorder.

Mean program completion rates were calculated for all groups. A one-way ANOVA was conducted to test for significant differences between groups. A logistic regression model was carried out to estimate the significance of ADHD rating in the odds of receiving an institutional charge. The model was adjusted for time spent incarcerated by each participant, since the sample was recruited over a fourteen month period.

To test the association between ADHD rating and recidivism, the product-limit (Kaplan–Meier) life table method was used to estimate the probability of recidivism as a function of time since release from custody. A return to custody for any reason, including parole condition breaches, was considered as failure. Data analyses were performed using the LIFETEST procedure in SAS 9.2. The survival function was calculated as the proportion of offenders in each ADHD group who had not recidivated by the study end (a maximum of 3 years). Offenders who remained in the community at the study end were considered censored, meaning that they remained in the analysis as an unknown outcome or censored observation.

3. Results

3.1. Prevalence of ADHD symptoms

As shown in Table 1, 16.5% of offenders in the sample scored in the high range on the ASRS, indicating a prevalence rate of ADHD