The Role of Emotional Distress and ADHD on Institutional Behavioral Disturbance and Recidivism Among Offenders

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Abstract

Objective: The aim of this study was to examine the role of emotional distress as well as ADHD symptomatology in explaining (a) recidivism, (b) behavioral disturbances in prison, and (c) violent and nonviolent offending. Method: In all, 196 male prisoners from Aberdeen prison completed the Symptom Checklist–90, which examines various clinical symptoms and emotional distress. Current adult symptoms were assessed by the Diagnostic and Statistical Manual of Mental Disorders (4th ed.; DSM-IV) criteria for ADHD. Results: Emotional distress and ADHD explained the variance in prison records of behavioral disturbance above and beyond antisocial personality (ASP) traits; however, much of the effect of emotional distress was mediated by ADHD symptoms. Only ADHD symptoms were significantly associated to history of violent offending, whereas ASP and age mostly explained nonviolent offenses and overall recidivism. Conclusion: Our results provide support for the conceptual association between ADHD and its related emotional dimension with behavioral disturbance in prison, suggesting a link to reactive violence. (J. of Att. Dis. 2013; XX(X) 1-XX)

Keywords

adult ADHD, emotional regulation, violent offending, comorbidity, recidivism

Introduction

Research has shown that rates of psychopathology are over-represented among prisoners. Findings from the Bureau of Justice Statistics demonstrate that half of U.S. prison inmates suffer from a mental health disorder (James & Glaze, 2006). A meta-analysis of 109 samples including 33,588 prisoners in 24 countries spanning four decades found that high levels of psychiatric morbidity are consistently reported in prisoners (Fazel & Seewald, 2012). This may be partly explained by the closure of psychiatric hospitals and high rates of substance misuse (i.e., dual diagnosis) in offenders (Baillargeon, Binswanger, Penn, Williams, & Murray, 2009).

International studies have also reported high rates of ADHD in prison settings (Gonzalez, Velez-Pastrana, Ruiz Varcarcel, Levin, & Albizu-Garcia, 2012; Young, Adamou, et al., 2011; Young, Wells, & Gudjonsson, 2011). ADHD is a neurodevelopmental disorder with early childhood onset that persists into adulthood in 40% to 60% of cases (Faraone, Biederman, & Mick, 2006). It is characterized by patterns of disabling emotional and behavioral symptoms, as well as cognitive deficits of attention and impulsivity (American Psychiatric Association [APA], 2000) and poor coping strategies (Young, 2005; Young, Chadwick, Heptinstall, Taylor, & Sonuga-Barke, 2005). The worldwide pooled prevalence of adult ADHD is 2.5% (Simon, Czobor, Balint, Meszaros, & Bitter, 2009), but estimates in prison samples consistently report significantly higher rates of ADHD in correctional settings compared with community samples, with screening methods revealing approximately 45% for male youth offenders (Retz et al., 2004; Rösler et al., 2004), 30% for adult offenders (Einarsson, Sigurdsson, Gudjonsson, Newton, & Bragason, 2009; Gudjonsson, Sigurdsson, Young, Newton, & Peersen, 2009; Young et al., 2009), and 10% for female adult offenders (Edvinsson, Bingefors, Lindstrom, & Lewander, 2010; Rösler, Retz, Yaqoobi, Burg, & Retz-Junginger, 2009). Recent estimates based on standard Diagnostic and Statistical Manual of Mental Disorders (4th ed.; DSM-IV; APA, 1994) criteria range from 10.5% to 16% (Cahill et al., 2012; Coolidge, Segal, Klebe, Cahill, & Whitcomb, 2009).

With the caveat that some studies have used self-rating scales to attain diagnostic classification, all reports consistently report significantly higher rates of ADHD in...
correctional settings compared with the community. Moreover, offenders with ADHD are more likely to have higher rates of co-occurring psychiatric disorders and greater impairment including mood and anxiety disorders (Einarsson et al., 2009; Rösler et al., 2009), personality disorders (Einarsson et al., 2009; Gudjonsson, Wells, & Young, 2010), and substance misuse (Ginsberg, Hirvikoski, & Lindefors, 2010; Gonzalez et al., 2012; Gudjonsson, Wells, & Young, 2011; Rösler et al., 2009; Young, Wells, et al., 2011).

Aside from clinical comorbidity, ADHD has also been associated with criminogenic issues and with difficulties engaging with the criminal justice system. There is evidence that ADHD may play a role in the motivation for offending (Gudjonsson et al., 2011), that it has implications for the manner of responding to police questioning (Gudjonsson, Young, & Bramham, 2007), with a higher probability of giving a false confession (Gudjonsson, Sigurdsson, Bragason, Newton, & Einarsson, 2008; Gudjonsson, Sigurdsson, Sigurdottis, & Young, 2012b), and with increased likelihood for engaging in critical incidents and aggression within institutional settings and recidivism (Young et al., 2009; Young, Wells, et al., 2011).

Behavioral disturbances are a common occurrence within correctional setting and misconduct often leads to adjudications or further convictions that, in turn, prevent early release or extend the prison tariff. In spite of these important consequences, factors that lead prisoners to engage in these incidents have received little attention in the literature (Gudjonsson & Young, 2011). A previous study by our group (Young et al., 2009) found that persisting ADHD symptoms predicted verbal and physical aggression and total frequency of critical incidents in prison. The findings held when controlling for the influence of antisocial personality (ASP) traits, suggesting that these incidents are more likely to be driven by the impulsivity and lack of emotional/behavioral regulation characteristics of ADHD symptomatology. Similar findings have also been reported in young offenders (Young, Misch, Collins & Gudjonsson, 2011) and in mentally disordered offenders (Young, Gudjonsson, Ball, & Lam, 2003; Young, Misch, et al., 2011).

It is becoming increasingly recognized that ADHD is associated with core deficits in emotion regulation (Barkley, 2001; Barkley & Fischer, 2010; Martel, 2009), suggesting that existing psychopathology and/or associated emotional distress may underlie behavioral outbursts. Furthermore, core ADHD symptoms, such as a difficulty delaying gratification and disinhibition, may make incarceration particularly demanding for these individuals who have a compromised ability to regulate their emotions. Retz and Rösler (2009) have outlined a model that differentiates between reactive–affective and proactive types of delinquent and violent behaviors in offenders with ADHD. In this model, reactive–affective violence is characterized by unplanned, spontaneous acts, and driven by impulsivity and emotion. Proactive offenses, by contrast, are exemplified by premeditated acts that are most associated with antisocial tendencies (Retz & Rösler, 2009). Supporting this view, these authors reported a strong association between ADHD and reactive violent aggression in a small inmate sample (n = 66), while proactive violence (i.e., instrumental violence) lacked any association with ADHD. This is consistent with the assertion that, in people with ADHD, offending is likely associated with poor emotional regulation (Gudjonsson et al., 2009; Gudjonsson, Sigurdsson, Adalsteinsson, & Young, 2013). This may also explain “reactive” antisocial behavior in the community, which, in turn, lead to higher rates of recidivism (Retz & Rösler, 2009).

The present study aimed to build on previous research by examining the role of emotional distress and ADHD symptomatology in explaining behavioral disturbances in prison (more likely to be reactive) and type of offending. First, we specifically set out to investigate the relative contributions of emotional distress and ADHD symptoms to prison records of behavioral disturbance and recidivism by developing a model to test whether there is an incremental effect of both beyond that of ASP traits. In addition, we aimed to test the relative contribution of emotional distress and ADHD symptoms beyond the effect of ASP traits separately for violent and nonviolent type of offenses.

### Aims of the Study

The study hypotheses are the following:

**Hypothesis 1:** Offenders with ADHD symptoms would report elevated rates of psychopathology compared with their peers as measured by the subscales of the Symptom Checklist–90 (SCL-90; Derogatis, 2000; Derogatis, Lipman, & Covi, 1973).

**Hypothesis 2:** Emotional distress and ADHD symptoms would explain behavioral disturbance in prison and recidivism above and beyond ASP traits.

**Hypothesis 3:** Emotional distress and ADHD symptoms would explain offending behavior more likely to represent reactive (i.e., violent and sexual offenses), in contrast to nonviolent offenses (e.g., acquisitive).

### Method

**Participants**

A total of 196 male prisoners from Aberdeen prison consented to participate. Mean age was 30.0 (SD = 8.2). The sample was predominantly White, with an ethnic composition of 184 (94.8%) White Europeans, 6 (3.1%) Black African/Caribbean, and 4 (2.1%) from Other ethnicity. Inmates were excluded from participating in the study if they had served less than 3 months of their current sentence,
if they were acutely physically or mentally unwell and/or posed a risk to researchers. The index offenses were acquisitive \((n = 63, 32\%)\), violent \((n = 50, 25\%)\), traffic violations \((n = 47, 24\%)\), drugs \((n = 23, 12\%)\), arson \((n = 3, 1\%)\), sex \((n = 2, 1\%)\), and other \((n = 10, 5\%)\). Nearly all of the prisoners \((192; 92\%)\) had one or more previous convictions.

Participants were classified into two groups based on their self-ratings on the Diagnostic and Statistical Manual–IV Checklist of Symptoms (DCS; APA, 1994) as follows:

**ADHD group.** This group consisted of individuals who were presenting with persisting ADHD symptoms, that is, those with “syndromatic” persistence who continued to meet full ADHD diagnostic criteria, and those with “symptomatic” persistence who were subthreshold of the full criteria and classified to be in partial remission. Classification for the “syndromatic” category required six or more inattentive items or six or more hyperactive/impulsive items (both rated as “often”) to be present in childhood on the ADHD DCS Childhood Symptom Scale (see measures below). In addition, for those meeting this childhood criteria, participants were required to meet the same criteria on the ADHD DCS Current Symptom Scale. Participants in partial remission of their symptoms were classified by meeting the childhood ADHD criteria described above, plus a total score of ≥17 for symptoms in the past 6 months on the DCS Current Symptom Scale. A score of 17 represents one standard deviation above the mean score obtained by a normal population (Young & Gudjonsson, 2008).

**Non-ADHD group.** This group consisted of individuals who were not presenting with persisting ADHD symptoms. Hence, classification for this category was all those who either did not meet the ADHD criteria in childhood described above or who were classified as being in full remission of their ADHD symptoms. The full remission category was categorized by participants who met the criteria for ADHD in childhood but who obtained a total score of <17 on the ADHD DCS Current Symptom Scale.

**Measures**

The DCS (APA, 1994) is an 18-item self-rating scale relating to ADHD symptoms that directly corresponds to DSM–IV criteria. Nine items each relate to dimensions of attention and hyperactivity/impulsivity, respectively, and are scored on a 3-point rating scale \((0 = never, 1 = sometimes, 2 = often)\). Participants completed the questionnaire twice, once self-reporting symptoms in childhood (DCS Childhood Symptom Scale) and again reporting current symptoms in the past 6 months (DCS Current Symptom Scale). In the present study, the DCS childhood and current scores were summed and used as a continuous trait dimension for correlation and regression analysis.

SCL-90 (Derogatis, 2000; Derogatis et al., 1973) comprises 90 self-rated items enquiring about symptoms experienced over the past week and rated on a 5-point scale. It provides nine psychopathology symptom subscales: Somatization, Obsessive/Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism. In addition, there are three global indices of distress associated with the SCL-90: (a) the Global Severity Index (GSI), which combines information concerning the number of symptoms reported with the intensity of perceived distress; (b) the Positive Symptom Distress Index (PSDI), which reflects the average level of distress reported for the symptoms that were endorsed (our outcome measure of emotional distress); and (c) the Positive Symptom Total (PST), which measures frequency of symptoms endorsed by the respondent regardless of the level of distress reported. In the present study, the SCL-90 PSDI was used as the index of emotional distress. Alpha reliability for the SCL subscales has varied between .77 and .91 (Derogatis, Rickels, & Roch, 1976).

The Millon Clinical Multiaxial Inventory—III (MCMI–III; Millon, 1997)—the MCMI–III is a 175-item true–false inventory comprising 24 scales derived from Millon’s Theory of Personality that parallel the DSM–III and DSM–IV Axis I and II diagnostic categories. The 24 scales are grouped into categories of enduring personality characteristics (Axis II) and psychopathology (Axis I; Clinical Syndromes) and the findings of this data are reported elsewhere (Gudjonsson, Wells, & Young, 2012; Young, Wells, et al., 2011). In the present study, only the Axis II ASP Scale (referred to in this article as “ASP traits”) was used.

**Behavioral disturbances** in prison were measured by the prison wing record of critical incidents over the previous 3 months. In the present study, we calculated the total sum of critical incidents. These included events of verbal aggression, physical aggression, property damage, self-injury, and arson.

**Criminal recidivism** was operationalized as the total number of previous convictions obtained from official criminal records at the prison. “Violent/Sexual” offenses were scaled as the total sum of these types of offenses per participant. “Nonviolent” offenses were the sum of acquisitive, traffic, and drug offenses per participant included in the study.

**Procedure**

Participants were recruited from a Scottish prison over 3 years. All prospective participants were given detailed information about the nature and purpose of the study. Written consent was obtained from all participants. Data were collected by research assistants who were fully trained on all aspects of the use, administration, and scoring of all questionnaires and procedures. Participants completed a
battery of self-rated questionnaires, and when necessary, poor readers were given assistance, but this did not include interpretation of test items or advice on how to answer the questions. Critical incidents were obtained from prison wing records for the 3 months prior to the date of assessment. Sociodemographic information and history of prior convictions were collected from the prison records.

**Statistical Analyses**

Independent mean t tests contrasts were performed to compare the participants with and without ADHD on all SCL-90 subscales. Contrasts for total previous convictions and critical incidents rates between groups were performed using nonparametric Mann–Whitney U tests. The effect size was analyzed using Cohen’s d. Pearson’s r correlations were performed for all SCL-90 subscales and DCS childhood and current ADHD total score.

Hierarchical multiple regression models were developed to test the direct associations of current ADHD symptoms and emotional distress with number of behavioral disturbances in prison and number of previous incarcerations (recidivism), violent and nonviolent offenses. Separate models were tested for each forensic outcome in four blocks following the same order: age (Block 1), a continuous measure of ASP traits (MCMI-III, Block 2), emotional distress (SCL-90 PSDI, Block 3), and current ADHD symptoms (DCS total score, Block 4).

To test the potential Effect–Modification between ADHD symptoms and emotional distress, we repeated all the regressions by adding an ADHD by emotional distress interaction in Block 5. Additional interaction effects by ASP traits were also explored in all adjusted models. There was no evidence for such moderation effects; therefore, we only provide data in the tables with regard to the first four blocks.

**Results**

**Current Emotional Distress and Comorbid Psychopathology**

Out of the total sample, 27 (14%) met the screening criteria for ADHD (see Table 1). Compared with the non-ADHD group, ADHD participants had significantly greater psychopathology on all SCL-90 subscales with mainly large effect sizes. Current ADHD symptoms correlated most highly with SCL-90 GSI, PST, and Obsessive/Compulsive subscales.

**Institutional Behavioral Disturbance in Prison and Recidivism**

Differences in total recidivism and critical incidents rates between the ADHD and non-ADHD groups were tested by nonparametric Mann–Whitney U tests. Recidivism based on criminal arrest records was significantly lower among non-ADHD participants (z = −2.1, p < .036). Total incidents of behavioral disturbance were also significantly lower in the non-ADHD group (z = −3.9, p < .001).

Table 2 includes the correlations between the variables used in all multiple regressions of this study. Most of these variables are significant, with some exceptions (ASP and both categories of offenses with SCL-90 PSDI). Emotional distress and current ADHD symptoms are significantly and moderately related (r = .307, p < .001). Both are significantly correlated with critical incidents, but the effect sizes are medium for ADHD and low for emotional distress.
We used independent hierarchical multiple regression models to test the hypothesis that emotional distress and current ADHD symptoms would explain behavioral disturbance in prison, recidivism, and “violent” and “nonviolent” offenses, above and beyond ASP traits. All models were developed using the same predictors in the same fashion: Block 1 for participants’ age, Block 2, a continuous measure of ASP traits, Block 3 for emotional distress, and Block 4 for current ADHD symptoms.

Table 3 shows that in regard to behavioral disturbance (critical incidents), emotional distress and ADHD current symptoms explained their variance above and beyond age and ASP traits, adding 3.8% and 6.4% to the variance in Blocks 3 and 4, respectively (a total of 10.2% incremental contribution). Entering ADHD current symptoms in Block 4 decreased the effect of emotional distress on the model. Judging by the β values, the larger effects on the outcome variable (behavioral disturbance) were age (β = −.02), ASP traits (β = .01), and ADHD symptoms (β = .03).

### Violent and Nonviolent Offenses

Out of the four predictors, only current ADHD symptoms added significantly to the variance in violent offenses, but this only explained 3.9% (Table 5; β = .03).

With regard to nonviolent offenses, following a similar tendency as the model for recidivism, emotional distress also showed a significant trend (two-tailed, p < .10) in the criterion variable beyond age and ASP. In Block 3, emotional distress added 1.7% to the overall variance, which combined with the effects of age and ASP explained a total of 13.0% of the model variance. However, entering ADHD current symptoms in Block 4 mediated the mild effect of emotional distress on this offense category.
ADHD, Depression/Anxiety, and Forensic Outcomes

In view of the high correlation indices (> .50) between current ADHD symptoms and SCL-90 subscales of Anxiety and Depression, and that both are conceptually linked to emotional distress, we performed unplanned separate models to assess their contribution to all forensic outcomes: behavioral disturbance, recidivism, violent, and nonviolent crimes. All models were adjusted for age and ASP traits, and included ADHD current symptoms and either anxiety or depression simultaneously to assess their direct contribution to the outcomes. The results of these analyses are in Supplementary Table 1 (available online at JAD.sagepub.com/supplemental). Current ADHD was significantly \( p < .05 \) associated with all forensic outcomes but either anxiety or depression symptoms were significant on these adjusted models.

Discussion

Two out of three hypotheses were supported. First, offenders with ADHD symptoms reported elevated rates of psychopathology compared with their peers (i.e., other prisoners) as measured by the SCL-90 with mostly large effect sizes across the subscales. Second, emotional distress and ADHD symptoms explained behavioral disturbance in prison and recidivism beyond ASP traits, but the effects were considerably stronger for critical incidents than recidivism. However, contrary to expectations, ADHD symptoms were associated with both types of offenses, violent and
nonviolent. Only the finding that current ADHD symptoms are more strongly associated with behavioral disturbances, including violence in prison, is indicative of greater likelihood of reactive (i.e., impulsive) offending.

Taken together, the present findings provide some support for the conceptual distinction between reactive and premeditated/instrumental violence, with the former being more likely observed among offenders with ADHD. In their model, Retz and Rösler (Retz & Rösler, 2009) argued that reactive (i.e., impulsive) violence is most consistent with ADHD symptomatology, as opposed to instrumental and premeditated violence, which is usually typical among offenders with ASP traits. ADHD is better at predicting critical incidents in prison than general recidivism after controlling for age and ASP traits. Not dissimilar from our findings, in a 13-year follow-up study (Barkley, Fischer, Smallish, & Fletcher, 2004), child hyperactivity was related to offending in young adults, but there was an absence of association with what the authors designated as predatory-overt offending (e.g., theft, antisocial behavior). As in the present study, Gudjonsson, Sigurdsson, Sigfúrdottis, and Young (2012c) recently found that ADHD symptoms and emotional factors similarly explained violent versus nonviolent offenses. This was a large community-based epidemiological survey of minor self-reported violent and nonviolent offending. In contrast, our current report relies on the official record of actual criminal offenses, which may explain the somewhat more robust findings included here. In this context, we report important and innovative results and provide initial evidence of a specific pathway of ADHD symptomatology relating to reactive violence as measured by critical incidents within prison. Paired with the significant association with recidivism, this proves to be a valuable contribution to knowledge in the field of forensic psychology and psychiatry and sets the stage for promising research avenues. Nevertheless, future studies should use a more comprehensive approach to classification of types of offending.

The ADHD group had greater psychopathology as assessed by the SCL-90. This is supported by a wealth of literature that indicates that adults with ADHD are at an increased risk for suffering from comorbid mental health disorders (Biederman et al., 2006; Biederman, Faraone, Mick, & Lelone, 1995; Gonzalez et al., 2012; Kessler et al., 2006; Levin et al., 2004; Mannuzza, Klein, Bessler, Malloy, & LaPadula, 1993; Young, Toone, & Tyson, 2003). Among the clinical syndromes included in the SCL-90 subscales, the Obsessional/Compulsive subscale revealed the highest correlation with ratings of current ADHD symptoms. While this seems to differ from our previous finding that the MCMI-III Axis II Compulsive subscale has an inverse relationship with ADHD symptoms (Gudjonsson et al., 2012), the discrepancy most likely reflects that the low score obtained on the MCMI-III Compulsive subscale is an indicator of disorganized personality. In contrast, the SCL-90 Obsessive/Compulsive subscale evaluates the presence of clinical symptoms. This is an important distinction, which has not been previously addressed in the literature, which could potentially be explained by ADHD comorbidity with autistic spectrum disorders. The SCL-90 Anxiety and Depression subscales were also highly correlated with current ADHD; however, testing their direct effects reveals it is the comorbid ADHD symptoms driving the associations with all forensic outcomes studied.

The significant group differences and large effect found for the SCL-90 global indices (GSI, PSDI, and PST) indicate that the ADHD offenders have a propensity to endorse more symptoms and more emotional distress than their peers. This suggests frequency and intensity of clinical symptoms and this seems to be expressed by them in the form of emotional outbursts within the institution that lead to critical incidents. The risk of depression and suicide is high within prison settings, especially in the first few days, and young people with ADHD may be at greater risk of acting out on the impulse to self-harm and/or to act violently toward others. These behaviors will almost certainly lead to institutional sanctions, which may include adjudications and criminal convictions acquired while serving the current tariff. In turn, this is likely to make early parole less likely, and in some cases, extend their sentence.

Emotional distress and current ADHD symptoms had an incremental effect over ASP traits, with ADHD symptoms being a more powerful predictor with regard to behavioral disturbance and general recidivism. Longitudinal prospective studies have shown that repeated offending often forms part of a lifelong pattern of unlawful behavior, with onset in early adolescence for ADHD youths. In their 26-year follow-up study, Gudjonsson et al. (2012a) found significantly more recidivist cases in a sample previously diagnosed with ADHD during childhood. Specifically from the total cohort of original cases, among those who had been arrested, 75% of adults with a history of ADHD had been arrested more than once compared with 36% of non-ADHD probands.

The present study also indicated the strong contribution of ASP in recidivism, which is in line with studies that have attempted to distinguish between the contribution of ADHD symptoms and conduct disorder (CD) to repeat offending using a cross-sectional cohort (Gudjonsson et al., 2012c; Gudjonsson et al., 2012) and prospective longitudinal methodology (Young, Taylor, & Gudjonsson, 2012). Others have recently found an association between multiple incarcerations and suffering psychiatric illness, with an incremental effect of multiple comorbidities (Baillargeon et al., 2009).

A useful framework to contextualize these findings is that of self-regulation and ADHD. When conceptualized as a disorder of the executive functions, ADHD symptoms arise through developmental stages as a failure to form
adequate controls, such as inhibiting automated responses or regulate and direct attention (Barkley, 1997, 2001). It has been argued that emotional dysregulation may play a role in disruptive and disorganization central to ADHD (Barkley, 2001; Barkley & Fischer, 2010; Martel, 2009; Martel, Nigg, & von Eye, 2009). This is consistent with other findings that have linked ADHD to mood dysregulation (Asherson, 2005), and to Borderline Personality (Gudjonsson et al., 2012; Philipsen et al., 2008), a disorder characterized by emotional turmoil and disorganization. This is also consistent with the relationship between ADHD and vulnerability to violent offending.

The greatest limitation of the study is that ADHD classification was based on a self-reported symptom rating scale that is likely to have included some false positive identifications. However, these followed DSM-IV symptom criteria requiring frequent endorsement of symptoms in childhood and adulthood. Second, the sample was all male and predominantly White European. A particular strength of the study is that behavioral measures were obtained from prison data recorded and kept on prison wings and previous convictions were obtained from official records.

What is most striking is that none of the participants in the study had a diagnosis of ADHD or were receiving treatment and the underrecognition of ADHD in offending populations is increasingly becoming recognized. Nevertheless, this means that there are individuals who are not receiving the appropriate treatment and/or rehabilitation. Indeed, pharmacological treatment is likely to substantially increase the likelihood that they will meaningfully engage in rehabilitation programs, education, and occupational and social activities. A large treatment effect has been reported for treating offenders with ADHD medication (Ginsberg, Hirvikoski, Grann, & Lindefors, 2012) or with cognitive-behavioral therapy (CBT; Young et al., 2012).

Psychiatrists remain circumspect about the treatment of young people in prisons with stimulant medication, mainly due to the high rates of substance misuse reported in this population (Ginsberg et al., 2012; Young, Wells, et al., 2011). Nevertheless, many young people may have been self-medicating with illicit substances (Gudjonsson, Sigurdsson, Sigfurdottis, & Young, 2012a) and in nonoffending populations, treatment with stimulant medication has not increased misuse of substances. Indeed, some studies have found support for a protective effect with a reduction in substance use (Biederman, 2003; Wilens, Faraone, Biederman, & Gunawardene, 2003). Importantly, Ginsberg et al. (2012), whose sample had a history of substance misuse, reported that there was no abuse of substances during their period of study (tested by regular urine samples). The greatest treatment effect seems to be achieved by the provision of multimodal treatments, including psychological treatments that have been specifically developed for youths and adults with ADHD and antisocial behavior (Emilsson et al., 2011). Hopefully, these findings will increase the confidence of forensic psychiatry to treat adults with ADHD in prison settings.

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