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Anxiety, depression, impulsivity and substance misuse in violent and non-violent adolescent boys in detention in China

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ABSTRACT

The present investigation aims to identify the factors which differentiate violent from non-violent juvenile offenders, with a particular emphasis on the association between internalizing psychiatric morbidity (i.e. anxiety and depression), impulsivity, substance misuse, and violence. A total of 323 incarcerated male juvenile offenders from one of three Youth Detention Centers (YDCs) in China were recruited between August 2007 and November 2008. Interviews were conducted by trained psychiatrists using the Barratt Impulsivity Scale (BIS-11), the Screen for Child Anxiety Related Emotional Disorders (SCARED), and the Birleson Depression Self-Rating Scale (DSRS) to assess impulsivity, anxiety and depression, respectively. The Schedule for Affective Disorder and Schizophrenia for School-Age Children Present and Lifetime (K-SADS-PL) was also used to assess psychiatric diagnoses. Violent offenders had significantly higher BIS-11 total scores, and attention and nonplanning subscale scores ($p < 0.05$). In the multiple logistic regression model, substance use disorders (SUD) and BIS-11 total scores independently predicted violence. Prison-based treatment services designed to reduce impulsivity and substance misuse in juvenile detention facilities should be prioritized.

1. Introduction

Within the adult prison population, high levels of major psychiatric morbidity have been identified, with one in seven adult prisoners meeting diagnostic criteria for a treatable mental illness (Fazel and Baillargeon, 2011). The prevalence of anxiety disorders, such as post-traumatic stress disorder (PTSD), depression, and substance use disorders (SUD), for example, is considerably higher in prisoners than in the general population (Ginn, 2012). The prevalence of anxiety disorders in male prisoners is estimated at 15.6% (Bland et al., 1998), whilst around 10% of male prisoners meet criteria for major depression (Fazel and Danesh, 2002; Fazel and Seewald, 2012). The prevalence of SUD is also elevated. Around 17.7–30.0% of prisoners met criteria for alcohol misuse or dependency, whilst 10.0–48.0% meet criteria for drug misuse or dependency (Fazel et al., 2006).

Knowledge of the psychiatric morbidity affecting the juvenile prison population, however, is less clear, particularly for non-Western countries (Fazel, S. et al., 2008). Inadequate knowledge of the mental health needs of juvenile offenders has been cited as a major barrier to the development of appropriate mental health services for juvenile offenders (Fazel, M. et al., 2008). Furthermore, untreated mental illness places detained adolescents at increased risk for a range of adverse outcomes, including the development of lifelong major psychiatric illnesses (Ireland et al., 2005), premature mortality (Fazel and Baillargeon, 2011), suicide (Rodway et al., 2011a), drug and alcohol problems (Sacks et al., 2009; Palmer et al., 2010), and increased rates of reoffending on release (Ramchand et al., 2009; Walter et al., 2011). Furthermore, exposure to juvenile system interventions which do not take into account the effects of psychiatric morbidity may increase both violent and non-violent recidivism, even into adulthood (Petitclerc et al., 2013). Research is therefore needed to identify the interventions which are most effective in reducing violent recidivism in young offenders experiencing psychiatric morbidity. To do this, however, further work is necessary to understand the association between psychiatric morbidity and violence in this population.

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Given the association between impulsivity and various markers of psychiatric vulnerability (Askenazy et al., 2000), impulsivity may be key to understanding the link between psychiatric morbidity and violence in this population. Higher levels of impulsivity have traditionally been linked to a number of externalizing disorders, including aggression (Santisteban and Alvarado, 2009; Cosi et al., 2011). Recently, however, impulsivity has also been implicated in the development of various internalizing disorders including both anxiety (Cosi et al., 2011; Day et al., 2013; Piero, 2010) and depression (Cataldo et al., 2005; Cosi et al., 2011). Few studies, however, have investigated the links between impulsivity, aggression, anxiety, and depression in violent versus non-violent juvenile offenders.

Compared to non-violent juvenile offenders, previous work suggests that violent juvenile offenders suffer from a greater range of externalizing psychiatric disorders (Vermeiren et al., 2002). Greater impulsivity has also been found to distinguish violent from nonviolent juvenile offenders (Chan and Chui, 2012). Co-occurring psychiatric illness and substance misuse, in addition, have also been found to predict escalation in offending seriousness in juvenile offenders (Hoeve et al., 2013). The comorbidity of internalizing and externalizing disorders during adolescence has also been linked with recidivism into adulthood (Hoeve et al., 2013). Few studies, however, have investigated the relationship between violence and internalizing psychopathology in juvenile offenders.

The present study therefore seeks to identify the factors which differentiate violent from nonviolent juvenile offenders, with a particular emphasis on the relationship between impulsivity, internalizing psychiatric morbidity, substance misuse, and violence. Results of this study should assist mental health and criminal justice professionals, as well as policy-makers, to develop and implement effective assessment and treatment approaches for juvenile offenders with psychiatric morbidity aimed at reducing violent recidivism in this population (Quinn and Shera, 2009; Rodway et al., 2011b).

2. Methods

2.1. Participants

This study forms part of a larger investigation into the assessment, prevention, and treatment of adolescent male offenders in the People's Republic of China. The procedure of this study is reported in greater detail in a previous paper (Zhou et al., 2012). Briefly, between August 2007 and November 2008, all new entrants to one of three Youth Detention Centres (YDCs) located in the Hunan, Sichuan, and Guangdong provinces of the People's Republic of China were invited to participate. As each province has only one YDC, these facilities are representative of the population of sentenced male offenders between 15 and 18 years of age residing in these provinces. Further information on the characteristics of these three YDCs is available in a recent report (Zhou et al., 2012).

2.2. Procedure

Eligible participants and their legal guardians were given both oral and written information about the aims, content, and duration of the clinical assessments. All information was confidential, and eligible participants were informed that refusal to participate in this study would not affect their judicial status or length of stay in the YDC. Written informed consent was required from both the boys and their legal guardians before participation. All discussions regarding study participation were conducted in a private area of the YDC, and no compensation was offered for participation. All procedures of this study were approved by the Biomedical Ethics Board of the Second Xiangya Hospital, Central South University.

Participants were divided into two groups based on the severity of their index offense as coded from official police records. The violent group included boys convicted of homicide, assault, rape, robbery, and affray. The non-violent group included boys convicted of theft, drug-trafficking, and fraud. Any participant with a history of conviction for a violent offense was ineligible for inclusion in the non-violent group.

A total of 347 boys were invited to take part in this study. Nine boys or their legal guardians (six violent and three nonviolent offenders) refused to participate, and 15 (12 violent and three nonviolent offenders) did not complete the full clinical assessment. There were no significant differences between the violent and non-violent groups with regard to the number of boys invited to take part in the study and the number who completed all clinical assessments ($\chi^2=0.04$, d.f.$=1$, $p=0.84$).

A total of 323 boys completed all assessments. Based on the severity of their index offense, 236 were classified as violent offenders and 87 were classified as non-violent offenders. In terms of offense severity, 32 (13.6%) of the violent offenders had been convicted of homicide, 47 (19.9%) of assault, 28 (11.9%) of rape, 127 (53.8%) of robbery, and two (0.8%) of affray. For non-violent offenders, 78 (89.7%) were convicted of theft, five (5.7%) of drug trafficking, and four (4.6%) were convicted of fraud.

2.3. Crime-related variables

Information on the index offense and criminal history were collected from official police records. The number of months served in the YDC was also calculated from official police records.

2.4. Psychiatric diagnosis

The Chinese version of the Schedule for Affective Disorder and Schizophrenia for School-Age Children Present and Lifetime (K-SADS-PL) (Kaufman et al., 1997; Shanee et al., 1997) was used to assess psychiatric diagnoses. The K-SADS-PL uses a semi-structured interview protocol to assess for both current and lifetime psychiatric morbidity among adolescents (Kaufman et al., 1997). The K-SADS-PL is associated with high inter-rater agreement (range 93–100%) and test–retest reliability (Cohen's kappa range 0.7–1.0; Kaufman et al., 1997). In this sample, the K-SADS-PL was associated with very high levels of inter-rater agreement (Cohen's kappa >0.8 for all diagnoses).

The K-SADS-PL was administered by a trained psychiatrist using the interview procedure outlined in greater detail in our previous report (Zhou et al., 2012). In brief, following the semi-structured interview protocol, information on history of psychiatric and other medical problems, alcohol and other drug use, educational and employment history, home and living situation prior to detention, family psychiatric problems, and hereditary disease history were collected. Interviews lasted between 30 and 45 min.

2.5. Impulsivity

The Barratt Impulsivity Scale (BIS-11) was used to assess impulsiveness (Patton et al., 1995). The BIS-11 consists of 30 items, scored on a four-point scale. Total scores range between 30 and 120, with higher values indicative of higher levels of impulsivity. In addition to yielding a total score, the structure of the BIS-11 allows for the assessment of three subtypes of impulsivity: “attentional” indicating a lack of attention and an inability to tolerate cognitive complexity, “motor” indicating engaging in spur of the moment behaviors and lack of perseverance in activities, and “nonplanning” indicating a lack of self-control and an inability to consider future consequences (McAllister-Williams et al., 2007). The BIS-11 was translated into Chinese by Zhou and colleagues and has demonstrated good test–retest reliability for both the total score (Cronbach's $\alpha=0.76$) and for the attentional (Cronbach's $\alpha=0.56$), motor (Cronbach's $\alpha=0.66$), and nonplanning (Cronbach's $\alpha=0.69$) subscale scores (Zhou et al., 2006).

2.6. Anxiety

The Chinese version of the Screen for Child Anxiety Related Emotional Disorders (SCARED) (Birmaher et al., 1999; Su et al., 2008) was used to assess the presence of various anxiety disorders. The SCARED is a self-report questionnaire in which participants assess the frequency of anxiety disorder symptoms using a three-point scale. The SCARED consists of 41 items with higher values indicative of greater anxiety. In addition to yielding a total anxiety score, the SCARED also consists of five subscales: panic disorder, generalized anxiety disorder, separation anxiety, social anxiety disorder, and significant school avoidance. The Chinese version of SCARED has good overall reliability (Cronbach's $\alpha=0.89$), and moderate to good reliabilities for all five subscales (Cronabach alpha coefficients range between 0.4 for school phobia and 0.8 for generalized anxiety; Su et al., 2008). Using established guidelines (Birmaher et al., 1999; Su et al., 2008), the cutoff scores for the total, panic disorder, generalized anxiety disorder, separation anxiety, social anxiety disorder, and significant school avoidance subscales used in the present study were 25, 7, 9, 5, 8, and 3 respectively.

2.7. Depression

The Birleson Depression Self-Rating Scale (DSRS) was used to assess for depression. The DSRS is a self-report questionnaire in which participants rate the