



Does diagnosis affect the predictive accuracy of risk assessment tools for juvenile offenders: Conduct Disorder and Attention Deficit Hyperactivity Disorder



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A B S T R A C T

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Studies have suggested an increased risk of criminality in juveniles if they suffer from co-morbid Attention Deficit Hyperactivity Disorder (ADHD) along with Conduct Disorder. The Structured Assessment of Violence Risk in Youth (SAVRY), the Psychopathy Checklist Youth Version (PCL:YV), and Youth Level of Service/Case Management Inventory (YLS/CMI) have been shown to be good predictors of violent and non-violent re-offending. The aim was to compare the accuracy of these tools to predict violent and non-violent re-offending in young people with co-morbid ADHD and Conduct Disorder and Conduct Disorder only. The sample included 109 White-British adolescent males in secure settings. Results revealed no significant differences between the groups for re-offending. SAVRY factors had better predictive values than PCL:YV or YLS/CMI. Tools generally had better predictive values for the Conduct Disorder only group than the co-morbid group. Possible reasons for these findings have been discussed along with limitations of the study.

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Introduction

Juvenile antisocial behaviour is of major concern to society due to its impact on quality of life and the monetary costs involved for the individual, their family, victims and the general public. In 2011/12 there were 1,235,028 arrests for notifiable offences in England and Wales, of which 167,995 were of people aged 10–17 years. These 10–17 year olds accounted for 13.6 per cent of all the arrests and 10.8 per cent of the population of England and Wales of offending age. The overall re-offending rate (violent and non-violent) for young people was 35.5 per cent in 2011/12, with an average of 1.02 re-offences per offender in the cohort and 2.88 re-offences per re-offender. For those leaving custody the re-offending rate is 73% within 12 months ([Youth Justice Board & Ministry of Justice, 2014](#)). However, official reporting of offending is generally an underestimation of the true extent, especially as adolescence is associated with a considerable amount of normative antisocial behaviour.

In the past decade, considerable advances have been made in developing tools to help identify those juveniles most at risk of offending and re-offending. Risk assessment instruments can generally be divided into actuarial and Structured

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Professional Judgement (SPJ) approaches. In actuarial risk assessments, statistical techniques are used to generate risk predictions. These assessments focus on a relatively small number of risk factors that are known, or are thought, to predict violence or offending more broadly across settings and individuals. Examples include the Youth Level of Service/Case Management Inventory (YLS/CMI; Hoge & Andrews, 2002), a generic risk assessment tool assessing risk of future general offending. It addresses eight domains: offence history, family, education/employment, peers, substance abuse, leisure, personality and attitudes. The tool was initially developed as an actuarial tool and is most widely used in this way; it can also function as an SPJ tool. The Psychopathy Checklist: Youth Version (PCL:YV; Forth, Kosson, & Hare, 2003) is another actuarial tool and while not a risk assessment per se, such tools are commonly used in risk assessment and risk assessment research. SPJ approaches represents a composite of empirical knowledge and clinical/professional expertise e.g. Structured Assessment of Violence Risk in Youth (SAVRY; Borum, Bartel, & Forth, 2003). The main difference between the two approaches is in how the final risk judgement is made. For actuarial assessments, the decision is made according to a fixed algorithm. For SPJ approaches, the professional makes the final risk judgement based on the structured assessment of all risk factors. SPJ assessments emphasise prevention rather than prediction and are designed to guide clinicians in determining what level of risk management is needed, in which contexts, and at what points in time (Vincent, 2006).

To date there have been a number of studies that have compared the predictive accuracy of these three tools (YLS/CMI, PCL:YV & SAVRY) for juvenile offenders (Catchpole & Gretton, 2003; Dolan & Rennie, 2008; Hilterman, Nicholls, & van Nieuwenhuizen, 2014; Welsh, Schmidt, McKinnon, Chattha, & Meyers, 2008). Overall the findings suggest that the SAVRY may be a better predictor of offending (violent and general) than the PCL:YV and YLS/CMI (Dolan & Rennie, 2008; Hilterman et al., 2014; Welsh et al., 2008). In addition the research suggests that the SAVRY adds incremental accuracy to the PCL:YV and YLS/CMI (Dolan & Rennie, 2008; Welsh et al., 2008). Singh, Grann, and Fazel (2011) conducted a systematic review and meta-analysis of nine risk assessment tools. Their total sample size was 25,980 participants from 68 studies. They compared the tools for predictive accuracy and found that the SAVRY showed the highest rates. They conclude that assessments designed to assess specific outcomes i.e. violence, in specific populations i.e. juveniles produced higher rates of predictive accuracy than tools designed for more general populations and general outcomes.

In juvenile justice populations the prevalence of Attention Deficit Hyperactivity Disorder (ADHD; Rosler et al., 2004) and Conduct Disorder (CD; Lader, Singleton, & Meltzer, 2000) are higher than in the general population. A meta-analysis of 25 studies involving 13,778 boys and 2972 girls on prevalence of mental disorders in juvenile detention and correctional facilities found 52.8% of the boys met the diagnostic criteria for CD and 11.7% met the criteria for ADHD (Fazel, Doll, & Langstrom, 2008). Research has shown that there is a particularly poor prognosis e.g. criminality, mental illness, substance use, attached to CD, in particular, early onset CD (Fergusson, Horwood, & Ridder, 2005). Research has also shown a statistical association between ADHD and offending (Farrington, Loeber & Van Kammen, 1990; Moffitt, 1990; Pratt, Cullen, Blevins, Daigle, & Unnever, 2002; Rabiner, Coie, Miller-Johnson, Boykin, & Lochman, 2005).

Within the literature there is debate as to the underlying mechanisms that account for the relationship between CD, ADHD and criminal behaviour. Does ADHD contribute to predicting antisocial behaviour separately from its association with CD? Or is risk for later antisocial and violent behaviour in juveniles with ADHD entirely accounted for by co-morbidity with CD; and ADHD alone does not predict future antisocial outcomes? Studies have suggested that the presence of CD and ADHD is associated with antisocial behaviours in adulthood (Abramowitz, Kosson, & Seidenberg, 2004), higher arrests, convictions and incarceration rates and adult criminality (Satterfield et al., 2007). In a longitudinal study of 435 boys, Moffitt (1990) found that boys with co-morbid ADHD and delinquent behaviour, antisocial behaviour started before school age, escalated at school entry and persisted into adolescence. On the other hand, boys with ADHD showed only mild antisocial behaviours in middle childhood. The delinquent-only group remained relatively free of conduct problems until they initiated delinquency at age 13. However it was also found that both delinquent groups reported significantly more different illegal behaviours at age 15 than non-disordered and pure ADHD groups.

Although evidence for a causal link between mental illness and offending is mixed many juveniles involved in serious and repeated criminal behaviour often suffer from mental disorders (Arseneault, Moffitt, Caspi, Taylor, & Silva, 2000; Loeber et al., 2001; Vermeiren, Jespers, & Moffitt, 2006). While the development of tools to assess risk in specific populations suggests better predictive accuracy few studies have examined whether predictors are specific to other factors, such as, diagnosis. If predictors are specific to diagnosis, predictions for samples of individuals with a variety of diagnoses will not be accurate and will fail to identify correlates of violent and antisocial behaviour. A recent systematic review of structured violence risk assessment tools in adults with schizophrenia highlighted that there was little direct evidence to support the use of these risk assessment tools in schizophrenia, as only two studies reported effect sizes specifically for this diagnostic group. The authors recommend that future studies must report psychometric properties for specific diagnostic groups (Singh, Serper, Reinhart, & Fazel, 2011).

Gammelgard, Koivisto, Eronen, and Kaltiala-Heino (2008) examined the predictive accuracy of SAVRY in a sample of 208 adolescents, aged 11–18 years, from various settings in Finland over a six-month period. Participants were categorised as schizophrenia spectrum disorders, disruptive behavioural and personality disorders, other mental or developmental disorders and no diagnosis. For each diagnostic group they report area under the curve (AUC) for the SAVRY total score, schizophrenia spectrum disorders (AUC = .84), disruptive behavioural and personality disorders (AUC = .69), other mental or developmental disorders (AUC = .77) and no diagnosis (.55). Overall the predictive accuracy of the SAVRY tended to be better in the schizophrenia spectrum group than in the other groups, but a statistically significant difference was only found for the social/contextual factors subscale.

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