McCarthy, JM., et al. Characteristics of prisoners with neurodevelopmental disorders & difficulties. *Journal of Intellectual Disability Research*.

Abstract

Background

Previous studies have found high rates of Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorder (ASD) and Intellectual Disability (ID) within the criminal justice system (CJS). However, little is understood about prisoners with neurodevelopmental disorders and difficulties (NDD) or their needs. This study aimed to identify prisoners with NDD and compare their characteristics with prisoners without NDD on a range of socio-demographic and social functioning measures.

Method

This was a descriptive, cross-sectional study carried out using face-to-face interviews with 240 participants in a London Category C prison. Standardised tools were used to assess prisoners for ADHD, ASD and ID.

Results

The study identified 87 prisoners who screened positive for one or more type of NDD. Participants with NDD were significantly younger and more likely to be single (OR=2.1), homeless (OR=3.4) or unemployed (OR=2.6) before they came into prison. They also had poorer educational achievements than those without NDD. Over 80% of those with NDD had a previous conviction or imprisonment.

Conclusions

The findings confirm the presence of significant numbers of people with NDD in a male prison. Services across the CJS are required for this group; specifically there is a need for raised awareness among those working in the CJS to improve the recognition of offenders with NDD. Services in the community need to work with individual with NDD who are at risk of offending; targeting those who are homeless, unemployed and have poor employment opportunities.

Introduction

There is currently a lack of access to specialist services for those with neurodevelopmental disorders such as attention-deficit hyperactivity disorder (ADHD), autism spectrum disorder (ASD) and intellectual disability (ID) within the Criminal Justice System (CJS) and this is thought to be associated with poorer outcomes; increasing the likelihood of future recidivism or recall to prison.

In the general population, it is estimated that ADHD affects 3-4% of individuals (Kessler et al, 2006), with ASD affecting around 1% to 1.5% (Brugha et al., 2011; Center for Disease Control and Prevention, 2014) and ID affecting 2-3% (2001). However, the prevalence of these conditions in prisons is under-researched with estimates proving difficult to establish given a lack of routine screening. Studies of prison populations have reported high rates of ADHD among male adult offenders (with 24% having a childhood history of ADHD (Young et al., 2011). In contrast, the evidence on ASD is varied. Robinson et al. (2012), reported that there was no evidence to suggest that ASD was over-represented in the Scottish prison population. Whereas, a screening study in a North American maximum security prison (N=431) reported a rate of 4.4% (four times greater than in the general population) (Fazio et al, 2012). In terms of ID, Mottram, (2007) estimated that individuals with ID (IQ <70) made up to 7% of a local prison population, with those with a borderline ID accounting for up to 25% of prisoners. However, studies across the world indicate that the reported prevalence of ID among prisoners is sensitive to differing study methodologies and diagnostic criteria used and may range from 0.5 to 11% for adults (Fazel et al., 2008); and as high as 23% for prisoners under 18 years (Harrington & Bailey et al, 2005).

In addition to those who meet diagnostic criteria for ADHD, ASD and ID there are individuals with broader 'sub-threshold' neurodevelopmental difficulties who also have significant vulnerabilities that are likely to be exposed in challenging environments such as prisons. Those with neurodevelopmental difficulties are likely to be more similar to those with neurodevelopmental disorders than those without these conditions. As such, it is important for research, policy and practice to address the needs of those with neurodevelopmental disorder *and* difficulties (NDD).

A recent review reported limited research on prisoners with NDD, however what evidence there is suggests that this group of are not receiving services to meet their needs (Underwood et al., 2013). A better understanding of the characteristics of prisoners with NDD would provide evidence on who should be targeted for screening and what this group's specific health and support needs are. The aim of this study was to compare the characteristics and socio-economic functioning of prisoners who screened positive for ADHD, ASD and ID.

Method

Participants

The study took place in a male category C prison in London. The study used a cross-sectional design to compare prisoners with NDD and those without NDD. Prisoners were eligible for the study if they demonstrated capacity to give informed consent and could understand/speak sufficient English. The study approached 378 prisoners between May 2012 and June 2013, of whom 240 consented to the screening interview. The study approached new arrivals to the prison and accepted referrals to the study by prison healthcare staff, education staff or self-referral.

The study was granted ethical approval by the NRES Committee North East – Northern & Yorkshire (ref: 12/NE/0040) and NOMS approval (ref: 50-12) in March 2012.

Measures

Participants with NDD were defined as those who:

- a) exceeded the threshold on one or more of the screening assessments employed by the study **or**
- b) self-reported having an existing diagnosis of ADHD, ASD or ID.

ID was screened for using the Learning Disability Screening Questionnaire (LDSQ) (McKenzie & Paxton, 2006; McKenzie et al., 2012). Participants scoring <46% on the LDSQ were said to have screened positive for ID. ADHD was assessed using the six screening items of the adult ADHD self-report scale (ASRS) (Adler et al., 2003). A score of four or more was used to indicate the presence of adult ADHD. ASD was screened for using the 20-item Autism Quotient (AQ-20) (Brugha et al., 2009; Brugha et al., 2011). The items are a subset of the original 50-item AQ (Baron-Cohen et al., 2001). A score greater than 10 was used to indicate the presence of clinically significant autistic traits (NICE, 2014).

The study collected self-reported data on a range of demographic and socio-economic functioning characteristics as well as rates of previous offending and imprisonment.

Analysis

Using SPSS v 22, chi-square and Mann-Whitney U tests were used to analyse univariate categorical and continuous data respectively. Multi-variate analyses controlling for age and ethnicity employed binary logistic regression.

Results

Of the 240 participants, 186 were recruited when they were approached by researchers on the prison wings. A further 15 specifically requested to take part believing themselves to have symptoms of ADHD, ASD or ID and another 39 were referred to the study by prison staff.

The standardised screening tools identified 79 prisoners with NDD and a further 8 prisoners with NDD were identified by self-report only. Thus, the study identified a total of 87 prisoners with NDD (ADHD=65, ASD=46 and ID=33). Participants with NDD were significantly younger (mean=31.3 (SD=9.3) vs. 35.3 (SD=11); $p=0.006$) than those without NDD and were less likely to be from a Black or minority ethnic group (75% vs. 43%, $p<0.001$) than those without NDD.

Table 1 reports the social-economic functioning characteristics of participants and odds ratios (and 95% confidence intervals) for those with/without NDD after controlling for age and ethnicity.

[INSERT TABLE 1]

Participants with NDD were more likely to have a previous conviction than those without NDD (85% vs. 62%) and were more likely to have been in prison before (83% vs. 53%). After controlling for age and ethnicity, the odds ratios for those with and without NDD on these variables were 2.7 (95% CI: 1.2 to 6.5) and 4.2 (95% CI: 1.8 to 9.6) respectively.

Discussion

We know that men with NDD have higher levels of disadvantage compared with the general population. This study shows that these inequalities pervade within the prison system. Compared to participants without NDD, prisoners with NDD had poorer educational, housing and employment outcomes prior to imprisonment than those without NDD. This reflects the findings of similar studies on ADHD, ASD and ID among prisoners; e.g. Fazio et al., 2012; Ginsberg et al., 2010; Hassiotis et al., 2011; Talbot, 2008. It is highly likely that these disparities continue on release from prison and this appears to result in a revolving door scenario of deprivation, reoffending and further imprisonment.

There is clearly a need for increased awareness and training of prison staff to understand and work with prisoners who have NDD to meet their health and social needs. The research team received a high number of referrals of prisoners with suspected NDD. It was clear that prison healthcare staff did not feel that they had the necessary clinical competencies to carry out NDD screening or diagnostic assessment. This might partly explain why these disorders often go unrecognised within CJS and forensic services (Chaplin et al., 2013).

The findings also have implications in terms of prison staff training and the adjustments required in prison for those with NDD. A programme of awareness and identification is not sufficient without interventions that are adapted to help those with NDD adjust to the prison environment. The wider group of those with sub-threshold neurodevelopmental disorders will rarely be eligible for mental health and/or social services outside of prison. This is in spite of significant impairment of functioning, being socially excluded and have limited opportunities for employment. However, even those with diagnosable neurodevelopmental disorders often find they too are unable to access community support, which is increasingly becoming a common issue (HM Inspectorate of Probation, 2014). Further work is required to understand if early identification in the criminal justice system leading to better engagement with community based services and the establishment of support social networks will reduce further offending behaviors for this at risk group.

The Bradley Report (Ministry of Justice, 2009) and a recent report by HM Inspectorate of Probation (2014), have identified the need to improve the recognition of NDD throughout the CJS and to enable identification and appropriate diversion where indicated. Improvements in prison healthcare should include the recognition of NDD as currently happens for prisoners with severe mental illness. Indeed, there is a need for recognition and management of NDD more broadly across criminal justice settings, including police and probation services (Young et al., 2013; Young et al., 2014). Currently there are established pathways for prisoners with psychotic illnesses (see Jarrett et al., 2012) and, although NDD occur at greater rates than psychosis in the general population, there is no equivalent provision for this group. The mandatory assessment of functioning and skills for all prisoners from 2014 should offer the opportunity to improve the recognition of those with ASD and ID (Think Autism, Department of Health, 2014).

This should be achieved through the development of a new integrated pathway through the CJS for people with NDD by establishing partnerships between health teams, social care providers and offender management services starting at the police station. The five year review of the Bradley Report suggests this is still aspirational and has called for the development of an Operating Model for prison mental health and ID care, central to which is a recovery orientated approach underpinned by joint working across mental health services and with service users.

The findings of this study may be limited by the use of screening tools rather than gold standard diagnostic measures to define those with and without NDD. The reliability and validity of these tools among prison populations is not clear. However, our aim was to include prisoners with broader neurodevelopmental difficulties as well as those who meet diagnostic criteria. Those screening positive for ADHD, ASD or ID on the tools used by the study, self-reported difficulties

with attention, impulsivity, hyperactivity, social communication, behaviour, literacy or functioning that distinguish them from the broader prison population. Further research is needed on prisoners with these characteristics including the extent to which these characteristics contribute to offending behaviours with a priority for community services to provide more intensive support if shown to be effective.

Conclusion

These findings confirm the presence of significant numbers of people with NDD in a male prison. Prisoners with NDD were found to be more disadvantaged and had more impaired socio-economic functioning prior to entering prison with fewer employment opportunities to be in employment than prisoners without NDD. Improvement to services across the CJS is required; specifically for recognition and appropriate onward referral for offenders with NDD. With this in place, the early identification and intervention for those with NDD can inform appropriate decisions and disposal and ultimately reduce offending behaviours in the future.

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Table 1: Self-reported socio-economic functioning of prisoners with and without NDD

	NDD (n=87)	No NDD n=153)	OR (95% CI)
Not in a relationship	60 (69%)	78 (51%)	2.14 (1.17 to 3.89)
Homeless*	20 (23%)	13 (9%)	3.7 (1.59 to 8.61)
Not in employment or study*	64 (74%)	77 (50%)	2.57 (1.4 to 4.74)
Unable to read and write in LDSQ tasks	17 (20%)	8 (5%)	3.96 (1.52 to 10.37)
No qualifications (GCSEs or equivalent)	62 (74%)	74 (50%)	2.48 (1.32 to 4.65)
Left school before the age of 16	47 (55%) [#]	58 (38%)	1.76 (0.98 to 3.13)

Bold rows indicate significant differences between prisoners with and without NDD

* Before coming into prison, #data missing for 2 participants