

Psychiatric morbidity in prisoners with intellectual disabilities: results from a UK wide prison survey

Angela Hassiotis^{1*}, Dina Gazizova², Leah Akinlonu³, Paul Bebbington¹, Howard Meltzer⁴, Andre Strydom¹

*: correspondence

1. Department of Mental Health Sciences, University College London Medical School, Charles Bell House, 67-73 Riding House Street, London W1W 7EY
a.hassiotis@ucl.ac.uk
a.strydom@ucl.ac.uk
p.bebbington@ucl.ac.uk

2. Central & North West London NHS Foundation Trust. The Riverside Centre, Hillingdon Hospital, Pield Heath Road, Uxbridge, Middx, UB8 3NN.
Dina.gazizova@nhs.net

3. Hertfordshire Partnership NHS Foundation Trust, Eric Shepherd Unit, Woodside Road, Abbots Langley WD5 0HT.
leah.akinlonu@hertspartsft.nhs.uk

4. Department of Health Sciences
College of Medicine, Biological Sciences and Psychology
University of Leicester
22-28 Princess Road West
Leicester LE1 6TP
hm74@leicester.ac.uk

SHORT REPORT

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Summary

People with intellectual disabilities (ID) are over-represented in prison. We hypothesised that prisoners with ID would have higher rates of psychiatric morbidity than prisoners without ID. Our sample was drawn from all prisons in England and Wales. ID was defined as Quick Test scores equivalent to an IQ of ≤ 65 . Prisoners with ID had significantly higher prevalences of probable psychosis, cannabis use, and attempted suicide. There was no excess of personality disorders, or alcohol abuse.

Prison staff and health professionals need to identify such individuals at an early stage, so that intervention or transfer to hospital settings can be offered as needed.

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Declaration of interest

None

Rates of Intellectual disability (ID) in prisons vary from as low as 1% to as high as 8%^{1,2,3} depending on methods of ascertainment. The considerable needs of prisoners with ID in Britain have been highlighted by the Bradley report⁴, which recommended early identification and needs assessment, in order to inform how and where they would be most appropriately treated.

The aim of this study was to examine the prevalence of ID in a UK based sample of prisoners and its association with a range of mental disorders. We hypothesised that psychiatric morbidity in prisoners with ID would be increased. We also investigated predictive factors that might be associated with increased psychiatric morbidity in this subset of prisoners.

Methods

A random sample of 3563 prisoners was selected from all 131 prisons (total n=61,944) in England and Wales (one in eight males in remand, one in thirty four males who had been sentenced, and one in three of all female prisoners), in a two stage survey⁵. 3142 (88%) prisoners were interviewed following informed consent.

Trained lay interviewers collected information about socio-demographic status, general health, deliberate self-harm, drug and alcohol misuse⁶, key life events, post-traumatic stress, difficulties with daily living, history of previous convictions, use of services in prison and and lifetime experience of services.

The Clinical Interview Schedule–Revised (CIS-R)⁷ was used to establish the presence of common mental disorders (CMD).

An overall category of ‘probable psychosis’ was used comprising those identified by SCAN⁵, together with those who did not have a phase-two interview but had endorsed two or more psychosis screening criteria in the first phase interview⁸

Personality disorders were assessed by the self administered SCID-II interview.

The Quick Test (QT) (Ammons & Ammons)⁹ measured participants’ intellectual functioning in the survey. The QT correlates well with the Wechsler Adult Intelligence Scale (WAIS-R) Full Scale IQ¹⁰. The Quick Test is only valid for first language English speakers, so, 375 participants who were born outside of the UK the and Ireland were excluded.

ID was defined by a score of 25 or less on the Quick Test (equivalent to an IQ of 65 or less), together with limited educational attainment (i.e. not higher than a GCSE or “O” level qualification). Any participants who had a Quick Test score of less than 25 but reported educational attainment higher than “O” Level were included in the normal ability group.

The “survey” commands in STATA 11.0 (<http://www.stata.com>) were used to carry out the analyses as it provides robust estimates of variance in complex data sets. The data was weighted to adjust for the differential sampling fractions by type of prisoner (remand or sentences, male or female) and for non-response within each group.

We used logistic regression to explore the association between ID and psychiatric disorder, adjusting sequentially for sociodemographic variables (age,

gender, ethnicity, in care as a child), clinical attributes (cannabis dependence, self-rated health status) and sentence type and length .

Results

The mean Q-Test score was 35.37 (SE 0.149), equivalent to an IQ of 84. 9.3% had a Q-Test score equivalent to an IQ of less than 70, and 4.7% per cent (170) of the sample had ID as defined above. Prisoners with ID were more likely to be female, younger than 30 years (79.7% vs. 61%, $p < 0.001$) and from minority ethnic groups (16.2% vs. 12.4%, $p = 0.05$). A greater proportion had been in local authority care as children (42% vs. 29%, $p = 0.009$) and had been admitted to a mental hospital (15.6% vs. 8.8%, $p = 0.02$) (supplementary data 1).

A greater proportion of prisoners with ID were on remand (33% vs. 19.4%, $p < 0.001$) or had shorter sentences (up to 12 months; 83.9% vs. 66.7%, $p = 0.004$). Although similar proportions of prisoners with and without ID had been given a court order for psychiatric care, those with ID were more likely to be currently located in a setting other than a “normal prison unit”, such as the hospital wing of the prison (10.7% vs. 6.%, $p < 0.001$) (supplementary table 2).

Although they appeared to have similar levels of visits from family or friends, inmates with ID were more likely to report feeling a moderate to severe lack of social support (71.4% vs. 58.2%, $p = 0.05$) (supplementary table 3).

12.6% of prisoners with ID rated their general health as “very bad”, compared with 6.3% of those without ID ($p<0.001$).

Prisoners with ID were twice as likely to have had probable psychosis (11.3% vs. 5.7%, $p<0.01$). CMD was somewhat more prevalent (CIS-R score >12) among prisoners with ID (53.1% vs. 43.6%, $p=0.08$).

We found a twofold increase in attempted suicide in prisoners with ID (13.5% vs. 6.5%, $p=0.02$), and relatively higher rates of history of self harm (19.9% vs. 13.8%, $p=0.07$).

Although lifetime drug use and alcohol dependence were similar in both prisoner groups, more prisoners with ID were cannabis dependent/frequent user (51.2% vs. 42.1%, $p=0.01$).

Fewer prisoners with ID received treatment for drug addiction while in prison and a significantly smaller proportion had any drug education (11.5% vs. 22.1%, $p=0.01$) (supplementary table 4).

Relationship between mental disorder and other variables

Before adjustment, there was no significant association between CMD and ID (OR=0.68, 95% CI 0.44 – 1.05).

The presence of ID, however, predicted the presence of probable psychosis (OR=2.08, 95% CI 1.16-3.75; $p=0.014$). Introduction of sociodemographic variables (age, sex, ethnicity), to the model did not alter the relationship (OR=2.25 95% CI 1.23-4.09 $p = 0.008$), neither did being in care as a child, or length of imprisonment.

Adding cannabis dependence mediated the strength of association between probable psychosis and ID (OR=1.99 95% CI 1.04-3.78; p=0.03). However, the inclusion of self-rated health status (poor) appeared to fully mediate the relationship (OR=1.65 95%CI 0.88-3.09; p=0.12) (table 1).

[table 1 near here]

Discussion

The national prisons survey remains the “*most influential and comprehensive*”¹¹ recent survey of the mental health of prisoners. In order to compensate for the lack of current norms for the QT, we used a lower IQ equivalence threshold but we may still have overestimated the true prevalence of ID in the prison population. Underestimation is also possible. Due to the exclusion of individuals born outside the UK and Ireland our findings are not representative of all prisoners.

The excess of psychosis may pre-exist imprisonment but it might also be due to onset during incarceration as they are challenged by the stressful and complex prison environment. The association between ID and psychosis was fully mediated by self-reported health status, but not by other factors. This may mean that participants with ID rate themselves as having particularly poor health in the context of suffering with psychosis, or that poorer physical health is coexisting with psychosis in this group¹².

Increased prevalence of suicidal behaviour in prison has been reported elsewhere¹³.

The higher proportion of prisoners with ID being on remand suggests that the current procedures may be partially effective in diverting prisoners with ID from being given custodial sentences by transferring them elsewhere prior to sentencing¹⁵ though poor identification could be a problem¹⁴. Furthermore, prisoners with ID may learn to hide their cognitive limitations, for fear of discrimination¹⁶. Reduced likelihood of educational interventions about substance misuse whilst in prison may be an indication of exclusion or shortage of specialist input.

Despite the highly burdened prison system, the care that these vulnerable prisoners receive should be tailored to their needs.

Words: 1214

References

1. Barron P, Hassiotis A, Banes J. Offenders with intellectual disability: the size of the problem and therapeutic outcomes. *Journal of Intellectual Disability Research* 2002, **46**, 454 – 463.
2. Fazel S, Xenitidis K, Powell J. The prevalence of intellectual disabilities among 12000 prisoners – a systematic review. *International Journal of Law and Psychiatry* 2008, **31**, 369-373.
3. Herrington V. Assessing the prevalence of intellectual disability among young male prisoners. *Journal of intellectual disability research* 2009, **53**, 397-410.
4. Department of Health. *Lord Bradley's review of people with mental health problems or learning disabilities in the criminal justice system*. The Stationery Office, London, 2009.
http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_098698.pdf
5. Singleton N, Meltzer H, Gatward R, Coid J, Deasy D. *Psychiatric Morbidity Among Prisoners in England and Wales: A Survey Carried Out in 1997 by the Social Survey Division of ONS on Behalf of the Department of Health*. London, Her Majesty's Stationary Office, 1998
6. Babor TF, de la Fuente JR, Saunders J, Grant M. *AUDIT: The Alcohol Use Disorders Identification Test: Guidelines for use in Primary Health Care*. World Health Organisation: Geneva, 1992.

7. Lewis RB, Pelosi A, Araya RC, et al. Measuring psychiatric disorder in the community: a standardised assessment for lay-interviewers, *Psychological medicine* 1992, **22**, 465-486.
8. Bebbington PE, Nayani T. The Psychosis Screening Questionnaire. *International Journal of Methods in Psychiatric Research*, 1995; **5**,11–20.
9. Ammons RB & Ammons CH. The Quick test: provisional manual. *Psychological Reports*, 1962; **II**, 111-161
10. Mortimer, A.M. & Bowen, K. Measuring IQ in schizophrenia research: an update of the Quick Test in estimating IQ decline. *Cognitive Neuropsychiatry* 1999, **4**, 81-88.
11. University of Lincoln. *All Not Equal In the Eyes of The Law*. Criminal Justice and Health Group 2010.

http://www.lincoln.ac.uk/cjmh/docs/OHTR_final_2.pdf
12. Osborn D P J, Levy G, Nazareth I, Petersen I, Islam A, King M B. Relative risk of cardiovascular and cancer mortality in people with severe mental illness from the United Kingdom's general practice research database. *Archives of General Psychiatry* 2007, **64**, 242-249
13. Jenkins R, Bhugra D, Meltzer H, Singleton N, Bebbington P, Brugha T, Coid J, Farrell M, Lewis G, Paton J. Psychiatric and social aspects of suicidal behaviour in prisons. *Psychological Medicine* 2005, **35**, 257-69.

14. Sondenaa E, Rasmussen K, Palmstierna T, Nottestad J. The prevalence and nature of intellectual disability in Norwegian prisons. *Journal of Intellectual Disabilities Research* 2008, **52**,1129-1137.
15. The Royal College of Psychiatrists. *Prison Psychiatry* CR141. London, 2007
16. Talbot J. *Prisoners' Voices: No One Knows Report*. Prison Reform Trust: London, 2008

Table A. Logistic regressions relating intellectual disabilities and sociodemographic and clinical variables to psychosis

Variables in equation	Presence of psychosis	
	Odds Ratios (95% CI*) for group with ID** vs normal intelligence	p
ID only	2.08 (1.16-3.75)	0.014
ID + age, sex, ethnicity, + in care as a child,	2.09 (1.15 - 3.19)	0.015
ID + age, sex, ethnicity, + length of sentence	2.25 (1.23 – 4.12)	0.009
ID + age, sex, ethnicity, + cannabis dependence	1.99 (1.04-3.78)	0.036
ID + age, sex, ethnicity, + self-rated health status	1.65 (0.88-3.09)	0.12

*: Confidence interval

**: intellectual disabilities