



The prevalence of intellectual disability in a major UK prison

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Accessible summary

- This research aimed to find out how many people in a big English prison had a learning disability.
- One-tenth of the people in the prison were chosen to take part. There were 140 prisoners involved in the study.
- The prisoners were asked questions about their lives and took tests to see if they had a learning disability.
- The researchers found there were more people with learning disabilities in prison than people had thought before.
- People in prison who have a learning disability need extra help.
- People who have a learning disability also need special help when they leave prison and go back to live in the community.

Summary

Over-representation of people with learning disability in prisons has been demonstrated in many Western jurisdictions. This was the first comprehensive research in a UK prison. The research used a random 10% sample of a prison population ($n = 140$). A semi-structured interview, the Wechsler Adult Intelligence Scale – III (UK version) and the Vineland Adaptive Behavior Scales (VABS) Interview Edition were administered. On the Wechsler Adult Intelligence Scale – III, UK version (WAIS-III (UK)), 7.1% of participants achieved standard scores below 70 and a further 23.6% were in the 70–79 (borderline) range. The VABS results indicated that 10.1% had standard scores below 70 and a further 33.3% were in the borderline range. The results indicate that the prevalence of intellectual (or learning) disability as measured on either or both of the WAIS-III (UK) or the Vineland Adaptive Behavior Scales is higher than previous research in the UK has indicated. The results have implications for provision of services in prison and post-release.

Keywords *Adaptive behaviour, intellectual disability, learning disability, prevalence, prison*

Introduction

There is ample evidence of the over-representation of people with an intellectual, or learning, disability in the criminal justice system in many Western jurisdictions.

Comparisons of prevalence data are rendered difficult, however, by varying definitions of learning disability (some researchers use only intelligence tests and omit adaptive behaviour assessment) and cut-off points (standard scores of 70, 75 or 80) for this condition (Holland *et al.* 2002;

Lindsay 2002). The prevalence in prison populations has been found to be 20% with an IQ score of less than 70 in New South Wales, Australia (Hayes 2000), 4–14% in the USA and possibly increasing (Petersilia 2000), and 28% with an IQ score of less than 70 in Ireland (Carey *et al.* 2000). In the UK, low rates of learning disability amongst the prison population are reported (Murphy *et al.* 1995), even though rates of learning disability amongst offenders in secure psychiatric hospitals and units are fairly consistent with imprisonment rates in other nations, at 16% (Taylor *et al.* 1998). In a study at a Cambridge police station, the estimated rate of learning disability amongst suspects was 15.2%, although the screening procedure had not been subjected to studies of reliability or validity (Lyll *et al.* 1995). In a sample of offenders on probation in Kent, 11% fell below a percentile rank of 5 on tests of cognitive functioning (Mason & Murphy 2002). Differences in availability of diversionary options, use of police discretion in proceeding with a charge, or policies towards 'zero tolerance' of offending behaviour can impact upon police station or probationer samples, however.

Over-representation in prisons or other segments of the criminal justice system does not necessarily imply that this group are more likely to offend, compared with their non-disabled counterparts. Simpson & Hogg (2001) suggest, on the basis of a review of research, that the relative prevalence of the offences of sexual offending, criminal damage and burglary appear to be higher among people with IQ in the borderline range than among the general population, although theft is not higher. On the other hand, serious offences such as murder or armed robbery appear to be under-represented. These authors comment that 'practices and systems of criminal justice and ID [intellectual disability] services have a massive impact on the apparent prevalence and distribution of offenders with ID and the types of crimes which they commit' (p. 394).

An important issue when studying the prevalence of intellectual disability amongst accused persons is that the recidivism rate is between 40% and 70% for this group (Klimecki *et al.* 1994; Lindsay & Holland 2000) compared with 50% for general offenders in the UK and 70% for offenders who have been in prison at least twice (Counsell & Simes 2002). Recidivism can be measured using rates of re-arrest, re-conviction or re-commitment to custody or supervision and rates vary significantly according to the measure and definition which is used. Because this group tends to commit less serious offences, they may receive short sentences and then re-offend after release, which could have the effect of increasing the apparent rate of offending as offenders reappear in the system.

Thus, it seems that people with a learning disability are over-represented in the criminal justice system. Whilst some

offenders with learning disabilities are diverted into mental health or learning disability services, others are not identified as having a learning disability and may be incarcerated in prison, when community sentences or placement in secure learning disability services may be a more appropriate option. Some will be imprisoned even though they have been identified as having a learning disability, because of a dearth of diversionary options.

The difficulty of identifying the presence of a learning disability in accused persons or offenders, even by health professionals, is demonstrated in numerous studies (Hayes 1993, 1996; New South Wales Law Reform Commission 1996). From the point of first contact with the criminal justice system, the process of identifying this group and providing appropriate services and safeguards is difficult. Recognition of the fact that a suspect may have an intellectual disability is difficult in police stations because of the short amount of time spent by the custody officer with the suspect, the hectic environment of some police stations, and lack of experience in the area of learning disability on the part of duty solicitors and police officers (Bean & Nemitz 1995; Palmer & Hart 1996). A further difficulty in identifying a learning disability is the fact that the mean IQ of prisoners is lower than the average IQ in the community, and hence there is a fine differentiation between inmates who are functioning at below average levels, and those with a diagnosable intellectual disability (Hayes 2000). In addition, this population has other social and health issues that can distract from, or disguise, the condition of intellectual disability, such as early school-leaving age, and high rates of hearing, visual and speech impairments (Hayes 2000).

The study reported here is the first comprehensive research addressing the prevalence of intellectual disability in a UK local prison, which used standardised tests of intelligence and adaptive behaviour, as well as incorporating random selection of participants. The research was conducted in order to provide information to enhance planning of service provision for this group of prisoners, both within a custodial environment and post-prison. The prison is the largest in Western Europe and houses both remand and sentenced prisoners, and therefore gives a good cross-section of the prison population.

All adult prisoners are received into a local prison, which are mainly located in towns and cities; prisoners on remand are placed there in order to be near to the courts. Convicted and sentenced prisoners are assessed at the local prison, given a security category and usually moved to other prisons to serve their sentences. All local prisons have quite high levels of security and some have higher security units within them. The researchers recognise, however, that the composition of prison populations is likely to vary widely across the UK owing to factors such as size, location, and whether prisoners are selected for a particular prison on the

basis of characteristics including age, length of sentence and type of offence.

Method

A 10% sample of the prison population at HMP Liverpool (a male prison, classified as a local prison) was gathered, using a random number process of selection. If the prisoner selected using the random number method declined to participate, a random number was used to generate the next potential participant, until a 10% sample was achieved. Potential participants were approached by the researcher (RL) who explained the study to the individual. This approach was used in order to ensure that accurate information about the research was given to the potential participant, and that no undue pressure was exerted or perceived (as might have been the case if prison staff approached the potential participant). None of the researchers engaged in this study were linked to the prison as employees or consultants.

Information about the participants' background, prior involvement with the criminal justice system, and other personal information were collected via semi-structured interview, and analysis of these data is forthcoming. Cognitive functioning was assessed using the Wechsler Adult Intelligence Scale – III, UK version (WAIS-III (UK), Wechsler 1999); adaptive behaviour was evaluated with the Vineland Adaptive Behavior Scales Interview Edition (VABS, Sparrow *et al.* 1984), using self-report.

Results

A total of 204 prisoners were approached; 39 refused to participate, 18 withdrew during the data-gathering phase, and 7 were moved to another prison or released. Hence, a total of 140 prisoners participated, from a total prisoner population of approximately 1400. Statistical power for a confidence level of 5% was 100%.

The age range was 21–70 years, the mean age being 33.5 years (SD = 8.94 years). There was no significant

difference in age between those participants with WAIS-III (UK) standard scores (SS) above or below 70, or above and below 80. [The general term "standard score" (SS) instead of IQ score is used because it refers to results on both the WAIS-III and the VABS, as IQ score is not appropriately used for non-IQ testing. Both SS and IQ scores represent a continuum with an average score of 100 and a standard deviation of 15]. No data about the average age of the UK general prison population could be located, although the average age at time of sentencing for an indictable offence was 27 (Research Development and Statistics Directorate 2005). Most of the sample (87.9%, $n = 123$) were of white British ethnicity, with no differences in ethnic ratios emerging between the <70/70+ or <80/80+ groups. In 2003, 24.6% of the UK prison population were from Black and Minority groups (Home Office, 2005). In the general UK population, 95% is white (Hollis *et al.* 2003).

On the WAIS-III (UK), 7.1% of participants achieved standard scores below 70 and a further 23.6% were in the 70–79 (borderline) range; therefore a total of 30.7% showed considerable deficits in intellectual abilities (Table 1). As some community services include clients with standard scores above 70 and up to 75, this group was also analysed; 16.4% of the sample had a score of <75 on the WAIS-III and 26.1% were in the same category on the VABS (see Table 2).

The VABS results indicated that 10.1% of participants had standard scores below 70 and a further 33.3% were in the borderline range yielding a total of 43.4% with serious deficits in adaptive behaviour. As shown in Table 2, 26.1% of the sample had a score of less than 75.

Only four participants (2.9%) had standard scores below 70 on both the VABS composite standard score and WAIS-III (UK) Full Scale IQ (FSIQ). Thirteen participants (9.4%) fell below 75 on both instruments. When the borderline groups (<80) on both tests were included, a total of 30 participants (21.7%) fell below 79 on both assessment instruments. Whilst there are differences in the pattern of distribution between the VABS and WAIS-III, the two tests correlate significantly (Pearson two-tailed $r = 0.574$, $P < 0.01$).

Table 1 Wechsler Adult Intelligence Scale – III, UK version (WAIS-III (UK)) and Vineland Adaptive Behavior Scales (VABS) results

	Mild or moderate <70	Border-line 70–79	Low average 80–89	Average 90–109	High average 110–119	Superior 120+
WAIS-III (UK) ($n = 140$)						
V(verbal) IQ	5.0% (7)	16.4% (23)	33.6% (47)	40.7% (57)	3.6% (5)	0.7% (1)
P (performance) IQ	7.1% (10)	25.0% (35)	25.7% (36)	36.4% (51)	4.3% (6)	1.4% (2)
FS (full scale) IQ	7.1% (10)	23.6% (33)	26.4% (37)	38.6% (54)	3.6% (5)	0.7% (1)
VABS						
Communication ($n = 139$)	45.3% (63)	17.3% (24)	20.9% (29)	16.5% (23)	0	0
Daily Living ($n = 138$)	0.7% (1)	3.6% (5)	6.5% (9)	47.1% (65)	43.0% (58)	0
Socialization ($n = 139$)	10.8% (15)	22.3% (31)	33.8% (47)	33.1% (46)	0	0
Composite score ($n = 138$)	10.8% (15)	33.3% (46)	23.2% (32)	31.2% (43)	1.4% (2)	0

Table 2 Wechsler Adult Intelligence Scale – III, UK version (WAIS-III (UK)) and Vineland Adaptive Behavior Scales (VABS) results for cut off of <75

	Score <75
WAIS-III (UK) (<i>i</i> = 140)	
V (verbal) IQ	14.3% (20)
P (performance) IQ	16.4% (23)
FS (full scale) IQ	16.4% (23)
VABS	
Communication (<i>n</i> = 139)	55.4% (78)
Daily Living (<i>n</i> = 138)	1.4% (2)
Socialization (<i>n</i> = 139)	24.5% (34)
Composite standard score (<i>n</i> = 138)	26.1% (36)

Table 3 Mean scores on Wechsler Adult Intelligence Scale – III, UK version (WAIS-III (UK)) and Vineland Adaptive Behavior Scales (VABS)

	<i>n</i>	Minimum	Maximum	Mean	SD
WAIS-III (UK)					
VIQ	140	63	125	88.4	12.0
PIQ	140	63	134	87.3	13.2
Full Scale IQ	140	62	122	87.09	12.5
VABS					
Communication	139	0	109	69.99	21.3
Daily Living	138	11	119	104.78	13.1
Socialization	139	45	109	83.81	12.3
Composite standard score	138	36	111	82.51	13.2

Mean total scores for WAIS-III (UK) and VABS were in the low average range (Table 3). The highest average score was for the Daily Living Skills domain of the VABS, whilst the lowest mean score was on the Communication domain. The Daily Living Skills mean score was significantly higher than FSIQ on the WAIS-III (UK) (paired samples *t*-test, $P < 0.00$), whereas the mean scores for Communication and Socialization domains were significantly lower than FSIQ (both at $P < 0.00$). Furthermore, the VABS composite score was significantly lower than the mean FSIQ ($P < 0.00$).

Discussion

The results indicate that the prevalence of intellectual disability (using a cut-off score of <70) as measured on either the WAIS-III (UK) (7.1%) or the VABS (10.1%) is higher than previous research in the UK has indicated. However, 2.9% fell below the cut-off score of 70 on both instruments, which would be the criteria for intellectual disability. This proportion is not markedly different from the population distribution, but the range of abilities within the subtests, especially within the VABS scores indicates specific areas of difficulty which are of concern especially within the criminal justice system. For example, 45.3% of the sample had communication scores of <70, implying that

their understanding of the highly verbalised context of the court room would be seriously compromised.

In this study, 9.4% of the sample fell below the standard score of 75 on both tests, the criterion for learning disability adopted by some NHS services. Definitions of intellectual disability (e.g. American Association on Mental Retardation 2002) usually refer to significant limitations both in intellectual functioning and in adaptive behaviour rather than specifying a cut-off score; this term, 'significant limitations', is operationalized by many services to mean a score of <70, although the cut-off score of 75 used in many NHS services nevertheless also reflects 'significant limitations'. In this study, results have been reported on an intelligence test and a test of adaptive behaviour, for groups below 70, below 75, and below 80; this is an important presentation of data, enabling comparisons with previous research studies reporting at each of these levels, and also filling the gap that is usually left when research in this area does not include a measure of adaptive behaviour. Generally, the mean scores for adaptive behaviour and intellectual functioning were below the general population average. Adaptive behaviour functioning tended to be lower than intellectual functioning, although the Daily Living Skills domain was an exception, with the mean score being in the average range, whilst the lowest mean score was found for Communication, a finding consistent with other research (Hayes 2005). Deficits in communication skills make it difficult for the accused person or offender to understand many aspects of the criminal justice system and also to comprehend the prison environment.

The findings have implications for the 'career' of the person with a learning disability as they proceed through the criminal justice system, and also for the management of prisons. If the condition of intellectual disability goes unrecognised during police interviews, subsequent court proceedings may be unfair to the accused, and the presence of a learning disability may not be taken into account on sentencing. Because of this lack of recognition, at the end point of the criminal justice system – imprisonment – inmates with a learning disability may not have their mental and physical health, welfare, educational and rehabilitation needs met in the prison environment, and may be subsequently released from prison without links to appropriate learning disability and other community services. This group is doubly disadvantaged because prisoners generally receive poorer health care than the non-incarcerated population (Davies 2001), and people with learning disabilities also receive poor health care compared with their non-disabled community counterparts (Alborz *et al.* 2005).

Given the disproportionate numbers of people with intellectual disabilities in HMP Liverpool, over-representation may also occur in other prisons and in young offenders'

institutions in the UK. HMP Liverpool, being a local prison, houses remand and sentenced prisoners, including some awaiting transfer to other prisons to complete their sentences, and therefore this prison population covers a wide cross-section of prisoner categories. There are important differences between the reception criteria of different custodial institutions – including the level of security, inclusion of remand or sentenced prisoners, age groups of prisoners, and type or length of sentence – and therefore it is likely that the prevalence of intellectual disability will vary between custodial institutions. It is important, therefore, that each prison determine the prevalence rate of intellectual disability amongst its own population, in order to assist in designing appropriate programmes and services for their prisoners with this condition, and in order to liaise with learning disability community services in preparation for their release. Whilst such prison and local community information is necessary to assist in planning services, a UK-wide plan is also essential, given the movement of prisoners between institutions, differences in regionalised community services for people with learning disabilities, the necessity of sending some offenders ‘out of county’ because appropriate secure services are not accessible locally, and the possibility that ex-prisoners may relocate to a different area after their release.

This research has important implications for commissioning services for accused persons and offenders with learning disabilities, both within the custodial setting and in the forensic hospital or community. The findings will also be of assistance to police, the Crown Prosecution Service and courts, because of the implications for considering diverting people with intellectual disabilities out of the prison service.

Ethics statement and statement of good practice

Ethics approval for this project was given by the University of Liverpool ethics committee and the NHS Research Ethics Committee. The project involved volunteer participants who were given full information about the project and the confidentiality of their information, prior to their participation. Feedback was given to the participants after the tests. As far as can be ascertained by the researchers, there were no adverse consequences for any participant.

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References

- Alborz A., McNally R. & Glendinning C. (2005) Access to health care for people with learning disabilities in the UK: mapping the issues and reviewing the evidence. *J Health Serv Res Policy*, **10**: 173–82.
- American Association on Mental Retardation (2002) *Mental retardation. Definition, classification, and systems of supports*. Washington, DC: American Association on Mental Retardation.
- Bean P. & Nemitz T. (1995) *Out of depth and out of sight*, Mencap, Midlands Centre for Criminology. Loughborough, University of Loughborough.
- Carey S., Harrold M., Mulrooney M. & Murphy M. (2000) *A survey of the level of learning disability among the prison population in Ireland*. Dublin, Irish Department of Justice, Equality and Law Reform: 1–24.
- Councell R. & Simes J. (2002) *Projections of long term trends in the prison population to 2009*. London, Research, Development and Statistics Directorate, Home Office.
- Davies R. (2001) UK prison doctors warn that prison health care is falling apart. *Lancet*, **357**: 1273.
- Hayes S. (1993) *People with an intellectual disability and the criminal justice system: appearances before local courts*. Research Report 4. Sydney, New South Wales Law Reform Commission.
- Hayes S.C. (1996) *People with an intellectual disability and the criminal justice system: two rural courts*. Sydney, New South Wales Law Reform Commission: 1–66.
- Hayes S.C. (2000) *Hayes Ability Screening Index (HASI) manual*. Sydney, Department of Behavioural Sciences in Medicine, University of Sydney.
- Hayes S.C. (2005) Diagnosing intellectual disability in a forensic sample; gender and age effects on the relationship between cognitive and adaptive functioning. *J Intellect Dev Disabil*, **30**: 106–12.
- Holland T., Clare I.C.H. & Mukhopadhyay T. (2002) Prevalence of ‘criminal offending’ by men and women with intellectual disability and the characteristics of ‘offenders’: implications for research and service development. *J Intellect Disabil Res*, **46**: 6.
- Hollis V., Cross I. & Olowe T. (2003) *Prison population brief*. London, Home Office.
- Home Office (2005) *Statistics on race and the criminal justice system – 2004*. London, Home Office.
- Klimecki M.R., Jenkinson J. & Wilson L. (1994) A study of recidivism among offenders with an intellectual disability. *Aust N Z J Dev Disabil*, **19**: 209–19.
- Lindsay W.R. (2002) Integration of recent reviews on offenders with intellectual disabilities. *J Appl Res Intellect Disabil*, **15**: 111.
- Lindsay W.R. & Holland A. (2000) Changing services for offenders with intellectual disability. *J Intellect Disabil Res*, **44**: 367–8.
- Lyall I., Holland A. & Collins S. (1995) Incidence of persons with a learning disability detained in police custody. A needs assessment for service development. *Med Sci Law*, **35**: 61–71.
- Mason J. & Murphy G. (2002) Intellectual disability amongst people on probation: prevalence and outcome. *J Intellect Disabil Res*, **46**: 230–8.
- Murphy G., Harnett H. & Holland A.J. (1995) A survey of intellectual disabilities amongst men on remand in prison. *Ment Handicap Res*, **8**: 81–98.

- New South Wales Law Reform Commission (1996) *People with an intellectual disability and the criminal justice system*. Report No. 80. Sydney, NSW Law Reform Commission.
- Palmer C. & Hart M. (1996) *A PACE in the right direction?* Sheffield, Institute for the Study of the Legal Profession, University of Sheffield.
- Petersilia J. (2000) *Doing justice? The criminal justice system and offenders with developmental disabilities*. Irvine, University of California.
- Research Development and Statistics Directorate (2005) *Sentencing statistics 2003*. London, Home Office, 05/05 RDS NOMS.
- Simpson M. & Hogg J. (2001) Patterns of offending among people with intellectual disability: a systematic review. Part 1: methodology and prevalence data. *J Intellect Disabil Res*, **45**: 384–96.
- Sparrow S., Balla D. & Cicchetti D. (1984) *Vineland Adaptive Behavior Scales Interview Edition Survey Form manual*. Circle Pines, MN, American Guidance Service.
- Taylor P. J., Leese M., Williams D., Butwell M., Daly R. & Larkin E. (1998) Mental disorder and violence. A special (high security) hospital study. *Br J Psychiatry*, **172**: 218–26.
- Wechsler D. (1999) *Wechsler Adult Intelligence Scale – 3rd UK Edition (WAIS®-IIIUK)*. Oxford, Harcourt Assessment.

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