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Applicability, Reliability and Validity of the Psychopathy Checklist-Revised in Offenders with Intellectual Disabilities: Some Initial Findings

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As a part of a larger study, the Psychopathy Checklist-Revised (PCL-R) was used to assess psychopathy in 203 individuals from three UK National Health Service settings for offenders with intellectual disabilities (ID): a high security hospital, a medium and low security hospital and a community based service. The PCL-R was rated from file review combined with a clinician interview. Internal consistency and inter-rater reliability were acceptable, and broadly comparable to that reported for other offender populations. The instrument was also associated in largely expected ways with level of security, and with measures of antisocial personality disorder, risk, and current behavioural functioning, providing some preliminary indications of convergent validity. However, further empirical investigation is required before the PCL-R can be used with confidence to make clinical and risk-based decisions in this population.

Psychopathy is a severe personality disorder characterised by a set of affective, interpersonal and behavioral features, which include the selfish, callous and remorseless use of others, deficient affective experience, and an impulsive and irresponsible lifestyle, which may include antisocial behavior (Cleckley, 1976). There is extensive evidence that as a construct psychopathy has utility with adult male offenders (Cooke & Michie, 2001). The most widely used measure of psychopathy is the Psychopathy Checklist-Revised (PCL-R) (Hare, 1991, 2003), a 20-item instrument usually scored on the basis of interview and file information. The PCL-R has demonstrated good internal consistency and inter-rater reliability across diverse populations (e.g., Cooke, Kosson, & Michie, 2001; Vitale, Smith, Brinkley & Newman, 2002). Its validity is also well established. In prison, forensic psychiatric and civil psychiatric populations, PCL-R scores have been shown to predict violent behavior and violent and general recidivism (e.g., Hemphill, Hare, & Wong, 1998; Walters, 2003). As a result, psychopathy is recognised as being a critical factor for risk assessment, and the PCL-R score is included as a component of a number of structured risk assessment frameworks such as the Violence Risk Appraisal Guide (VRAG; Quinsey, Harris, Rice, & Cormier, 1998), and the Historical Clinical Risk–20 (HCR-20; Webster, Douglas, Eaves & Hart, 1997). Assessment of psychopathy using the PCL-R is therefore increasingly considered to be a standard procedure in forensic settings.

Although much recent work has focussed on the PCL-R's generalisability across different populations, to date neither the PCL-R nor the instruments which include it have been validated specifically with offenders who have intellectual disabilities (ID). The term ID[1] refers here to those individuals who have significantly sub-average intellectual functioning combined with adaptive skills deficits, which are broadly the criteria defining Mental Retardation in the main diagnostic classification systems. Partly as

[1] The term Learning Disabilities is also used to denote this group in the UK. The equivalent term is Developmental Delay or Developmental Disabilities in North America.

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a result of the closure of long term intellectual disability hospitals, there are significant numbers of offenders with ID being treated in forensic psychiatric facilities in the UK (McBrien, 2003). These services are required to address the assessment and management of risk in this group of people, and as part of that process assessment of psychopathy may need to be considered.

The Use of the PCL-R in Forensic Populations with ID

Understanding of both normal personality and personality disorder is arguably as important for people with ID as for any other population (Zigler & Burack, 1989; Reid, Lindsay, Law, & Sturmey, 2004), and there is increasing interest in methods of assessment in these areas. For example, operationalised criteria for diagnosis of personality disorders in ID using ICD-10 (Royal College of Psychiatrists, 2001) and DSM-IV (Lindsay, Gabriel, Dana, Young, & Dosen, 2003) have recently been developed, although as yet no research has utilised these guidelines. A recent review (Alexander & Cooray, 2003) has concluded that such diagnosis is a complex and difficult area, that estimates of prevalence of personality disorders vary greatly, and that development of reliable and valid assessment instruments is therefore a priority. As with other disorders of personality, it seems reasonable to hypothesise that psychopathy may occur in this group of people. However, in his classic early work on psychopathy, Cleckley (1976) specified that "superficial charm and good *intelligence*" was one of the key characteristics of the condition, and explicitly distinguished between a patient who was "mentally defective" and one who was psychopathic.[2] Despite this assertion, the findings of most early studies which have investigated the relationship between global intelligence and the PCL-R (e.g., Hart & Hare, 1989; Hart, Forth, & Hare, 1990; Shine & Hobson, 1997) have led Hare (2003) to conclude that the measure is essentially uncorrelated with standard measures of intelligence, although two recent studies have suggested a more complex relationship between verbal intelligence and the various facets of psychopathy (Salekin, Neumann, Leistico & Zalot, 2004; Vittaco, Neumann, & Jackson, 2005). These findings have nevertheless been largely confined to studies of subjects falling within the normal range of IQ, and none have considered those with lower abilities. Unlike Cleckley, the later body of psychopathy literature focused around the PCL-R has acknowledged co-morbidity of psychopathy with other mental disorders (e.g., Tengstrom & Hodgkins, 2002) and recent theoretical papers have emphasised the heterogeneity of, and potentially different etiologies for, psychopathic characteristics (e.g., Brinkley, Newman, Widiger & Lynam, 2004). Notwithstanding Cleckley's descriptor, there thus seems to be no strong theoretical reason to automatically exclude those with intellectual disabilities from psychopathy assessment.

It cannot be assumed, however, that an instrument constructed and validated on samples of offenders with intellectual abilities in the normal range will be either valid or reliable in intellectually disabled populations (Sturmey, Reid & Corbett, 1991). Indeed there are significant methodological and conceptual problems faced by clinicians using the PCL-R as an assessment tool with people with ID, and these have been previously identified as falling into a number of key areas (Morrissey, 2003a). Firstly, because of their intellectual, communicative and adaptive deficits, it is likely that some of the key features of psychopathy may present differently in this population, and the range of behavioral manifestations of the disorder in people with ID are not necessarily encompassed in the item descriptions in the PCL-R manual. Secondly, emotional immaturity or specific developmental disorders such as autism where 'theory of mind' is impaired, are associated with characteristics, such as an inability to empathise, which are also symptomatic of psychopathy. The fact that the psychological and neurobiological processes underlying these characteristics may be different in ID and psychopathy (e.g., Blair et al., 1996) creates a potential area of uncertainty for PCL-R raters.

A third area of difficulty is that the typical psychosocial environment experienced by people with ID limits their opportunities to demonstrate some of the behaviors relevant to the PCL-R. Many

[2] It is notable that Cleckley also excluded psychotic and neurotic patients from his definition of the core disorder, as effectively did Karpman (1948) in labelling psychopathic characteristics in those with these clinical diagnoses as 'symptomatic' or 'secondary' psychopathy.

individuals with ID have experienced long term institutional care, and most have significant restrictions on their lives as a result of their disabilities, which in turn reduce opportunities for employment, social responsibilities, and sexual and cohabiting relationships (Murphy, 1992). It is therefore arguable that 'normal' psychosocial functioning for people with ID should be taken into account when scoring some PCL-R items (e.g., *Parasitic Lifestyle*; *Irresponsibility*; *Lack of Realistic Long Term Goals* etc.).

A further factor common to many ID residential settings is that much behavior which might constitute "offending" in non-disabled populations is construed instead as *challenging behavior*, a widely understood concept in the intellectual disability field (Emerson, 1995). As a consequence, violent and sexually assaultative behavior is not always formally recorded or reported to criminal justice authorities (Clare & Murphy, 1998), a factor which will potentially affect validity of the PCL-R items which are based on recorded charges and convictions.

Finally, there are potential difficulties with the standard PCL-R interview, which is long and detailed, and focuses both on an individual's past history and their current functioning. The comprehension of questions and concepts, the level of concentration and degree of accurate recall of information in people with ID will affect the validity of the information obtained in interview (Finlay & Lyons, 2001). Such problems are likely to increase in line with the degree of ID, and some individuals may not even be able to be interviewed in any meaningful way. These observations point towards a need for greater reliance on collateral and informant information when assessing this client group.

Of course many of the problems described here are not necessarily unique to patients with ID, and may parallel issues which have arisen in assessing psychopathy in people with enduring mental illness (e.g., Tengstrom & Hodgkins, 2002) and young people (Forth, Kosson & Hare, 2003). Nevertheless, in an effort to clarify some of the issues and to facilitate inter-rater reliability by guiding decision making on scoring, we have developed pilot guidelines for using the PCL-R with offenders with ID (Morrissey, 2003b).[3] These were based on a pilot study which scored 32 cases using file and interview (Morrissey 2003a), and were informed by consultation with the original authors of the PCL-R, and other clinicians in the ID field. While the guidelines adhere strictly to the PCL-R manual (Hare, 2003) and preserve the flavour and intent of the items, they make suggestions for ID equivalent behaviors for some items, and include indications for when to consider omitting items. Use of multi-source information (including informant reports) is encouraged where possible, and it is recommended that raters should have experience of working with people with ID, in order to ensure they have a broad clinical understanding of the client group in which the ratings are being made. In their current form the guidelines have been endorsed for research purposes by the scale's author (R.D. Hare, personal communication, February, 2003).

[3] These are available from the first author.

THE PRESENT STUDY

The Wider Study

The need for a clearer understanding as to how various personality disorder and risk measures apply to a forensic ID population recently led to a Home Office funded research study in the UK (Hogue, Mooney, Johnston, Lindsay & Taylor, in press). This broad project has examined a wide range of measures (including the PCL-R) in a sample of 212 patients, in three forensic psychiatric settings catering specifically for offenders with ID: a high security hospital, a hospital with both medium and low secure facilities, and a community forensic psychiatric service. This paper focuses on the PCL-R data collected in the main study, and aimed to evaluate the initial evidence for the applicability, reliability and validity of the instrument for an ID population, and to provide comparative data for this client group.

Reliability and Validity of PCL-R

First, we examined the reliability of the PCL-R in this sample in terms of both internal consistency and inter-rater reliability. Second, evidence of convergent and discriminant validity for the PCL-R in this group was evaluated by examining its relationship with relevant demographic and clinical

measures which were collected in the course of the wider study.[4] On the basis of previous research and theory in adult male offenders (Hare, 2003)[5] there were expected to be significant positive correlations between the PCL-R and concurrent aggressive behaviour, staff ratings of externalising behaviour problems and measures of risk for violence. As DSM-IV Antisocial Personality Disorder (American Psychiatric Association, 1994) is a construct considered to be closely related to psychopathy (e.g., Skilling, Harris, Rice, & Quinsey, 2002) strong positive correlations were predicted between measures of the two disorders. Insignificant correlations were expected between the PCL-R and staff ratings of internalising psychological problems (anxiety, depression and low self esteem), as in general these variables have been found to be uncorrelated (or slightly negatively correlated) with psychopathy (Hare, 2003). Lastly, although in populations with normal intelligence mixed findings have been reported regarding psychopathy and IQ, there was no theoretical reason to suppose that global IQ would be related to psychopathy within an exclusively low ability sample. Accordingly, low correlations were expected between full scale IQ and PCL-R scores.

Comparative Data

Given evidence of adequate reliability and validity, the final aim of the study was to provide descriptive comparative PCL-R data for this sample of intellectually disabled offenders across three National Health Service (NHS) forensic settings. It was expected that mean psychopathy scores would decrease with the level of security, as is typical in populations without disabilities.

METHOD

Sample and Site Characteristics

The main study (see above) has collected assessment information, based on file and clinical informant data, on 212 adult males across three NHS Forensic Intellectual Disability Services in England and Scotland. The high secure sample comprised all patients ($n = 73$) in the intellectual disability service at a high security hospital in Nottinghamshire which is the National Centre for High Secure Learning Disability for England and Wales. The service accepts patients with ID who, if at large, would present a 'grave and immediate danger' to the public. A similar sized sample ($n = 70$) was drawn from a medium and low secure service at a hospital which provides inpatient specialist forensic intellectual disability services to around 160 patients in Northumbria. All the high, medium and low secure patients were detained under the Mental Health Act. The third sample ($n = 69$) was drawn from a community forensic intellectual disability service in Scotland which provides inpatient (open unit), day patient and outpatient assessment and treatment. This sample included a mixture of voluntary patients, patients sectioned under the Scottish MHA and those on probation orders. The three samples are subsequently referred to as 'high', 'medium-low' and 'community' respectively.

The mean age of the whole sample was 37 (range 17–68), with the community sample having a lower mean age than the other samples (34.3), $F(2,210) = 3.75$, $p < .05$. The mean IQ (based on WAIS–R or WAIS III assessment from clinical records) was 66 ($SD = 8.6$; range 43-89),[6] and this did not differ significantly between sites, $F(2,210) = 1.07$, *ns*. A majority of the sample (82%) had a formal ICD-10 diagnosis of mental retardation. The vast majority of the samples (94%) were of White British ethnic origin.

[4] It should be noted that the wider study was not designed specifically to explore the validity of the PCL-R so we were constrained by the validity measures available.

[5] Hare (2003) pp 87-162 provides a detailed review of these validity findings.

[6] We did not employ an IQ cut off, and therefore a small number of patients with IQ's in the low average range were included in the study. In general these patients were diagnosed with pervasive developmental disorders and had significant adaptive deficits which had led to their placement in intellectual disability services.

A total of 51.7% of the sample had been convicted of a violent offence during their lifetime, and 52.2% had been convicted of a sexual offence. Despite being placed in forensic services, as many as 27.8% had no convictions for a criminal offence, and this variable was associated with the level of security, with 43.5 % of the community sample having had no convictions, $\chi 2\ (2, N = 210) = 18.91$, $p < .001$.

Measures

The Psychopathy Checklist—Revised (PCL-R)

The PCL-R comprises 20 items scored 0 (*does not apply*), 1 (*may apply*) and 2 (*definitely applies*). The most recent structural model of the PCL-R described in the PCL-R: 2nd Edition manual (Hare, 2003) was used for analysis purposes. The PCL-R total score is the sum of all 20 items. Factor 1 (interpersonal and affective items) comprises 8 items and Factor 2 (antisocial behavior and lifestyle items) comprises 10 items. Factor 1 is in turn divided into two facets, reflecting the Interpersonal (Facet 1; 4 items) and Affective (Facet 2; 4 items) components of psychopathy. Factor 2 is similarly divided into two further facets, representing the Lifestyle (Facet 3; 5 items) and Antisocial Behavior (Facet 4; 5 items) aspects of psychopathy. Total, factor scores and facet scores were calculated using the standard rules for the number of permitted omitted items.

Criterion Measures

The measures which require further explanation are described briefly below; not all measures were available for all the participants.

DSM-IV Antisocial Personality Disorder (APD). The measure of DSM-IV APD was based on a system of DSM-IV Personality Disorder Consensus Diagnosis (D'Silva & Hogue, 2002). This system combines ratings from file review, clinicians, and observers (nursing staff) for each DSM–IV criterion, to determine whether there was 'definite', 'probable' or no diagnosis. In a few cases the clinician who provided PCL-R information also provided the personality disorder information, although they would have been blind to the final PCL-R score when doing the personality disorder rating and vice versa.

*Concurrent aggression***.** Incidents of aggression were recorded from nursing notes for all participants for a period of 6 months concurrent with the main study and coded using the Mc Arthur Incident Reconciliation Grid (Monahan et al., 2001). As the data collection phase was fairly lengthy, the PCL-R rating could have taken place at any time during this six month period.

Emotional Problem Scales: Behaviour Rating Scale (EPS-BRS) (Prout & Strohmer, 1991). The EPS-BRS is a nurse informant rating scale designed to measure emotional and behavioral problems in individuals with mild intellectual disabilities, although this study was the first to use the measure with offenders with ID (see Hogue et al., 2005). It comprises 135 items, scored 0 (*never*) to 3 (*often*), relating to behaviors observed over the past month. There are 12 subscales, but for the purposes of this paper we focus on the Externalising Problems Scale (which comprises four subscales: verbal aggression, physical aggression, non compliance and hyper-activity) and the Internalising Problems Scale (comprising three subscales: depression, anxiety and low self esteem). The EPS-BRS was completed by members of the nursing team at each site, and was therefore independent of the PCL-R assessment

HCR-20 (Webster et al., 1997). The HCR-20 is a structured clinical judgement instrument which assesses risk of violence using 20 items each rated on a 3-point scale. The historical (H) section includes 10 largely static items (including psychopathy, which was removed for the purposes of this study in order to avoid criterion contamination). The clinical (C) section comprises 5 largely dynamic items, and the risk management section (R) includes 5 items, which in this study were rated on the basis of a move to a community setting.

*VRAG (Quinsey et al., 1998)***.** The VRAG is an actuarial violence risk assessment instrument comprising 12 differentially weighted, largely static items. One item is a weighted PCL-R score, which was again removed for the purposes of this analysis.

Procedure

Assessment was conducted by three researchers (and where appropriate by clinical staff), one based at each site, all of whom were postgraduate level psychologists trained in the PCL-R and the other risk assessments. PCL-R assessment was conducted by review of file and other collateral information,

combined with an interview with a clinical informant (psychologist or psychiatrist) with detailed knowledge of the patient, who also had received PCL-R training. This interview covered the evidence for each PCL-R item. As with the standard method, final scoring for each item was determined by using a combination of the file and informant rating, whichever appeared to be the most reliable. The PCL-R technical manual (Hare, 2003), was supplemented by the coding guidelines for scoring the PCL-R with offenders with ID (Morrissey 2003b). Full PCL-R assessments were available on 203 of the 212 cases in the total sample.

Inter-rater reliability for the PCL-R was assessed following the main study by an independent rater (CM) who was blind to the initial scores. 45 cases (15 at each site) were selected at random from three bands of PCL-R scorers: high (25-40), medium (15-24) and low (0-14), and were re-rated using file information up to the date of the original assessment, and by interviewing the clinician who was consulted in the main study.[7]

RESULTS

Reliability

The internal consistency of the PCL-R in this sample was measured in a numbers of ways. First we used Cronbach's coefficient alpha; the observed alphas and their 95% confidence intervals, are displayed in Table 1. Alpha was .81 for the total score, .82 for Factor 1, and .73 for Factor 2. In addition, alpha for the PCL-R total was calculated for those participants above and below the median IQ split of 66, and alpha was .82 and .81 respectively. All these values are considered 'fair' to 'good' in terms of clinical significance (Cicchetti, 1994). Internal consistency was also considered for the facet scores: for Facet 1 and Facet 2 alpha was .74 and .79 respectively, but coefficients were lower for Facets 3 (.64) and Facet 4 (.62). Alpha coefficients below .7 are generally considered unacceptable for psychometric purposes (Cicchetti, 1994).

[7] In 2 cases the clinician was not available and file only information was utilised.

Mean inter-item correlations (IIC), are also presented in Table 1. For all 20 items the mean IIC was .18 and for Factor 2 it was .22. The mean IIC for Factor 1 was higher at .36, and was highest for Facet 2 at .48.

To provide an additional analysis of internal consistency of the PCL-R total score we also examined corrected item-total correlations (ITC) for each PCL-R item (See Table 2). Two correlations were below .1 (Item 11, *Promiscuous Sexual Behaviour* and Item 17, *Many Short Term Marital Relationships*). With the exception of *Revocation of Conditional Release* (Item 19), all other ITC's were above .3, and the mean for all 20 items was .38, which suggests that most items contributed to the PCL-R total score. The correlation (r) between Factors 1 and 2 was .42, and between the Factor scores and the PCL-R total score was .82 and .81 respectively.

Inter-rater reliability was computed for the 45 re-rated cases in two ways. First the intraclass correlation coefficient (ICC) was calculated using a two-way mixed effects model. The single measure ICC was .89 (95% CI = .83-.93, n = 45) for the PCL-R total score, .84 (95% CI = .72-.92, n = 43) for Factor 1 and .83 (95% CI =.70-.90, n = 42) for Factor 2**.** These coefficients are comparable to those reported for adult male forensic psychiatric samples using the standard method of administration (Hare, 2003). Secondly, agreement of classification of high scorers (PCL-R total of 25 or above) and lower scorers (under 25) was computed using Cohen's kappa (κ), correcting for chance. The κ of .77 (n = 45, p <. 001) suggests reasonably good agreement about the classification of participants into these two groups.

Validity

***DSM-IV APD*.** In total, 17% of the sample were classified as definitely meeting the criteria for APD, a figure which rose to 25% when "possible diagnoses" were included. As predicted, high scorers on the PCL-R (25 or over) were much more likely than low scorers to definitely meet the criteria for APD (50% vs. 13%), $\chi 2$ (1, N = 151) = 20.93, p < .001. When the number of symptoms of APD were treated as a dimensional variable, as predicted there was a strong relationship between the total symptom

Table 1
Internal Consistency (Cronbach's Alpha) and Mean Inter-Item Correlations (IIC): PCL-R Total, Factor and Facet Scores

	No. items	*n*	Alpha (95% CI)	Mean IIC (*r*)
PCL-R Total	20	169	0.81 (.76-.85)	0.18
Factor 1 – Affect/Interpersonal	8	199	0.82 (.78-.86)	0.36
Factor 2 – Social Deviance	10	173	0.73 (.67-.78)	0.22
Facet 1 – Interpersonal	4	201	0.74 (.67-.79)	0.41
Facet 2 – Affective	4	200	0.79 (.74-.83)	0.48
Facet 3 – Lifestyle	5	143	0.64 (.53-.73)	0.26
Facet 4 – Antisocial	5	184	0.62 (.52-.70)	0.25

Note. The computation of the internal consistency correlations requires a score for each item. As noted above, there was a high level of omitted data on Items 9, 15 and 17, so the value of alpha was calculated using two methods: a) only for cases where all items were present (which limited the sample size), and b) assigning the mean sample value of these three items in cases where they were omitted. There were no significant differences between the alpha coefficients obtained. For PCL-R Total and Factor 2, alpha coefficients using method b) are presented, in order to maximise the n. For Facet 3, as the scale would not usually be scored with more than one omitted item, the alpha presented is calculated using method a). The alphas for the scales which do not include Items 9, 15 and 17 (i.e. Factor 1, Facet 1, Facet 2, Facet 4) also use method a).

score and both the total PCL-R score[8] (r = .62, p <.001, n = 151), and Factor 2 score (r = .65, p < .001, n = 151), and a weaker relationship with the Factor 1 score, r = .36, p < .001, n = 151).

Concurrent aggression/externalising behavior. A total of 31% of the sample had at least one physically aggressive incident (against person or property) recorded during the 6 month coding period. PCL-R total scores were weakly but significantly correlated with occurrence of such incidents (coded dichotomously), r = .18, p < .05, n = 203. The relationship was stronger with Factor 2, r = .26, p < .01, n =195, than with Factor 1, r = .05, *ns*, n = 203. However the EPS-BRS Externalising Behaviour Problems Scale (which included staff ratings of recent verbal and physical aggression), was more strongly correlated with the PCL-R total score, r = .45, p < .001, n = 164, Factor 1, r = .40, p < .001, n = 164, and Factor 2, r = .43, p < .001, n = 164.

Risk measures. Correlations between the PCL-R and the risk measures collected in the main study, were all found to be significant and in the expected direction. There was a significant correlation between the VRAG total score (with the PCL-R item removed) and the PCL-R total score, r = .49, p < .001, n = 202), and Factor 2 score, r = .59, p < .001, n = 195, but the relationship with Factor 1 was less strong, r = .28, p < .001, n = 202. There was a positive correlation between the HCR-20 (with the PCL-R item removed) and the PCL-R total score, r = .54, p <.001, n = 182, Factor 2, r = .65, p < .001, n = 182 and to a lesser extent with Factor 1, r = .33, p < .001, n = 182. PCL-R total score was also significantly correlated with the three subscales of the HCR-20: the H scale (also with PCL-R item removed) , r = .45, p < .001, n = 182, the C scale, r = .34, p < .001, n = 182, and the R scale, r = .26, p <. 001, n = 182.

Internalising problems. Contrary to expectations, PCL-R total scores were significantly, although weakly, positively correlated with the Internalising Behaviour Problems scale of the EPS-BRS, r = .18, p < .05, n = 164. Similar correlations were found with Factor 1, r = .18, p < .05, n = 164, and Factor 2,

[8] All correlations are Pearson's product moment coefficients when the variables are continuous and point biserial correlations when the variables are dichotomous. N = 203, unless otherwise stated.

Table 2
Frequencies, Descriptive Statistics and Corrected Item-Total Correlations (r) for Individual PCL-R Items

	Item Description	0 %	1 %	2 %	Omit %	Mean	*SD*	Item-total r
1.	Glibness/superficial charm	63.4	27.7	08.9	00.5	0.46	0.65	0.35
2.	Grandiose sense of self-worth	61.6	27.6	10.8	-	0.49	0.69	0.41
3.	Needs stimulation / prone to boredom	48.8	36.5	14.8	-	0.66	0.72	0.35
4.	Pathological lying	55.9	31.2	12.9	00.5	0.57	0.71	0.47
5.	Conning/manipulative	40.9	38.4	20.7	-	0.80	0.76	0.45
6.	Lack of remorse or guilt	18.2	36.0	45.8	-	1.28	0.75	0.63
7.	Shallow affect	58.2	33.8	08.0	00.9	0.50	0.64	0.30
8.	Callous/lack of empathy.	23.2	39.9	36.9	-	1.14	0.77	0.64
9.	Parasitic lifestyle	59.0	30.6	10.4	28.0	0.51	0.68	0.40
10.	Poor behavioural controls.	25.1	33.5	40.9	00.5	1.17	0.81	0.30
11.	Promiscuous sexual behaviour	37.8	33.3	28.9	00.9	0.91	0.81	0.09
12.	Early behaviour problems	20.3	25.1	54.5	07.5	1.34	0.80	0.34
13.	Lack of realistic, long-term goals	53.1	30.2	16.7	05.2	0.64	0.75	0.42
14.	Impulsivity	26.1	39.9	34.0	-	1.08	0.77	0.38
15.	Irresponsibility.	35.1	47.7	17.2	24.5	0.82	0.70	0.37
16.	Failure to accept responsibility.	20.3	40.1	39.6	00.5	1.19	0.75	0.54
17.	Many short-term marital relationships	92.3	05.1	02.6	58.5	0.10	0.38	0.09
18.	Juvenile delinquency.	46.3	22.4	31.3	00.9	0.85	0.87	0.37
19.	Revocation of conditional release	56.2	14.4	29.4	00.9	0.73	0.89	0.22
20.	Criminal versatility.	68.5	21.7	09.9	-	0.41	0.67	0.40

Note. % of valid cases given for 0, 1, 2 scores. % of all cases given for omitted scores.

$r = .20$, $p < .05$, $n = 164$. However, of the three subscales making up the composite scale, only the Depression scale was significantly correlated with the total PCL-R score, $r = .22$, $p < .01$, $n = 164$.

Intelligence. Full Scale IQ was not correlated with either the PCL-R total score ($r = .05$), Factor 1 ($r = -.01$) or Factor 2 score ($r = .06$) (all ns, $n = 195$).

Descriptive Statistics: Whole Sample

Descriptive statistics for the whole sample are displayed in Table 3. The mean total PCL-R score for the whole sample was 16.02 ($SD = 7.3$), with a median score of 15.8, and a range of 0 to 34. Total scores were approximately normally distributed. The mean Factor 1 (Interpersonal/Affective) score was 6.38 ($SD = 3.8$) and the mean Factor 2 (Antisocial/Lifestyle) score was 8.18 ($SD = 4.2$). Mean facet scores are also displayed in Table 3. The frequencies for individual item scores, including omitted cases, are given in Table 2. Mean scores on PCL-R individual items ranged from 0.10 for Item 17 (*Many Short Term Marital Relationships*) to 1.34 for Item 12 (*Early Behavioral Problems*). There were a high percentage of omitted items on Item 9 (*Parasitic Lifestyle*) (28%), Item 15 (*Irresponsibility*) (24.5%) and Item 17 (*Many Short Term Marital Relationships* (58.5%).

North American studies have traditionally used a PCL-R total cut-off score of 30. However, in

Table 3
Mean PCL-R Total, Factor and Facet scores by Level of Security

		Level of security		
	All	High	Medium-Low	Community
n	203	66	68	69
	M (SD)	M (*SD*)	M (*SD*)	M (*SD*)
PCL-R Total	16.02 (7.3)	18.25 (7.2)**$_a$	15.39 (6.2)	14.50 (7.9)
Factor 1	6.38 (3.8)	6.99 (4.1)	5.75 (3.4)	6.43 (3.9)
Factor 2	8.18 (4.2)	9.69 (4.5)***$_a$	8.31 (3.3)	6.78 (4.3)
Facet 1	2.31 (2.1)	2.49 (2.2)	1.67 (1.9)	2.77 (2.1)**$_c$
Facet 2	4.10 (2.3)	4.70 (2.3)*$_a$	4.00 (2.1)	3.64 (2.4)
Facet 3	3.87 (2.5)	–	3.41 (2.0)	3.32 (2.4)
Facet 4	4.49 (2.5)	5.00 (2.4)**$_a$	5.05 (2.3)**$_b$	3.51 (2.6)

Note. n given is maximum. Where more than the maximum permitted number of items has been omitted on a factor or facet, n will be lower. Mean values are missing where n is too low to calculate reliably. One way analysis of variance, Bonferroni post-hoc test, difference between groups: * p < .05; ** p < .01; *** p < .001; a: high > community; b: medium–low > community; c: community > medium-low.

European studies a cut-off point of 25 or above has generally been employed to determine high scorers on the instrument, largely as a result of cross-cultural item response theory analyses of PCL-R data (Cooke & Michie, 1999). When a PCL-R total cut-off point of 25 was used, 24 (11.8%) of the sample were classified as having high levels of psychopathy. Only 4 cases (2%) scored 30 or above.

Differences Between the Sites

One way analysis of variance, with post-hoc multiple comparisons, was conducted to determine any differences between the three sites (high security, medium-low security and community) on the PCL-R total scores, factor scores and facet scores (see Table 3). For the PCL-R total score, as predicted, there was a significant difference between groups, $F(2, 200) = 5.07$; $p < .01$, with the high security group scoring significantly higher than the community sample and also higher than the medium-low security group, although that difference was not quite significant. The high secure sample also scored higher than the community sample, but not the medium-low secure sample, on Factor 2 (Antisocial/ Lifestyle), $F(2, 192) = 8.15$; $p < .001$. There were no significant differences between the three groups in their Factor 1 (Interpersonal/Affective) scores, $F(2, 200) = 1.8$, *ns*.

There was a significant difference between the groups on Facet 1, $F(2,198) = 5.18$; $p < .01$, with the community sample scoring significantly higher than the medium-low sample. The high secure sample scored significantly higher than the community sample on Facet 2 (Affective), $F(2,197) = 3.79$; $p < .05$. Both the high and medium-low secure site scored significantly higher than the community sample on Facet 4 (Antisocial Behavior), $F(2,181) = 8.07$; $p < .001$.

Because a facet score can only be computed where there is no more than one omitted item, there were insufficient numbers of cases where Facet 3 was computable at the high secure site to examine differences between the groups.

When the PCL-R total score was dichotomised, being a high scorer (PCL-R total of 25 or more) was associated with level of security: 19.7 % of the high security sample, 5.8% of the medium to low security sample and 10.1 % of the community sample were classified as being in the high scoring group, $\chi 2$ (2, N = 203) = 8.12, $p < .05$.

DISCUSSION

To our knowledge this is the first article to report assessment of psychopathy using the PCL-R in a substantial sample of intellectually disabled offenders. More than two hundred cases were assessed in three forensic mental health settings, covering a range of security conditions, and the sample included the whole population of male ID patients detained in high security in England and Wales. A wide spectrum of disability was represented in the sample (an IQ range of 46 points), including a proportion above the IQ cut-off of 70 which traditionally determines ID, but who were nevertheless considered to require ID services. It should be emphasised however that, on average, the sample were functioning in the mild to borderline range of intellectual impairment and, although they were representative of ID patients resident in such forensic settings, it may not be appropriate to generalise the findings of this study to those patients who have moderate to severe disabilities.

The findings of this study suggest that the methodological problems of using the PCL-R as an assessment tool in ID populations can be overcome to some extent by employing the current methodology of interviewing clinicians, and by using scoring guidelines relevant to this group. Our qualitative experience was that file data alone would not have provided sufficient information to code many items, particularly those included in the Interpersonal and Affective facets of the instrument. The clinician interviews were therefore considered to have contributed to the relatively high degree of inter-rater reliability, and to have limited the level of omitted data. Nevertheless, as with other groups, if patient interviews are attainable in addition to clinician ratings we consider this to be preferable, particularly if the assessment is for clinical purposes.

The guidelines for scoring proved to be useful in achieving consistency across cases on typical areas of difficulty. However, we acknowledge that the guidelines themselves may have contributed to the level of omitted data as (in common with the PCL-R manual and related training) they recommend omitting an item in cases where there had been a lengthy period without opportunity to demonstrate relevant behavior. This approach was considered more appropriate than developing hypothetical proxy measures of such behavior at this early stage of validating the instrument with this population. Only 59% of the current ID sample had all items scored, a relatively low proportion compared to that reported for the samples in the PCL-R manual, where the average figure is 85.4% (Hare, 2003).

Three items posed particular scoring difficulties in this population, all of which were predictable from the literature on intellectual disability. There was a large proportion of intentionally omitted cases on *Many Short Term Marital Relationships* (Item 17), particularly in the high secure sample, where opportunity for relationships was more severely restricted and for longer periods. Of those for whom the item was scored, only 2.6% had had sufficient live-in relationships to score a 2, which suggests the item does not discriminate usefully in this population. It is notable that in the PCL Youth Version (PCL:YV; Forth et al., 2003) this item is substituted by *Unstable Interpersonal Relationships*, which broadens the notion of relationship instability to include non-sexual relationships, a definition which may well be more appropriate for an ID population.

Around one quarter of the cases had *Parasitic Lifestyle* (Item 9) and *Irresponsibility* (Item 15) omitted. Both items require evidence in a range of domains, and where people's lifestyles were characterised by limited responsibilities and dependence on others, they proved difficult to score. This was particularly the case where institutionalisation had occurred over a lengthy period. Once again it is possible that proxy indicators, more applicable to residential and hospital settings, could be developed further for future studies.

Reliability

The alpha coefficients for the total score and factor scores are comparable to those reported for some samples described in the PCL-R manual, including the English male offenders sample, where alpha was .84 for the total score and .77 and .81 for the factor scores respectively (Samples B1 and B2; Hare, 2003). The internal consistency of Facet 3 and Facet 4 is lower than that reported by Hare (2003) for the English male offenders sample. However, the indices are comparable to those reported for the standard method of administration (interview and file review) in North American male offenders and male

forensic psychiatric patients. Lower alphas are to be expected for scales with a small number of items; nevertheless we note that the internal consistency of Facets 3 and 4 is lower than for Facets 1 and 2, which are considered by many to represent the core characteristics of the disorder (e.g., Cooke & Michie, 2001).

Given the problems we have outlined with regard to interpretation of item descriptions in the context of typical ID presentation, it might have been expected that inter-rater reliability would be affected. This did not appear to be the case: Hare (2003) reports single rater ICC's of between .86 and .94 for the standard method of administration, compared with the .89 observed in this study. Using the current methodology (i.e., interviewing informants), at the whole scale level there is therefore good agreement between raters. Further analysis of IRR data by IQ has suggested that the agreement may be less good in those cases where IQ was under 60, but the case numbers were too small to draw firm conclusions.[9] Further investigation into these aspects of inter-rater reliability is underway.

Validity

The relationship between the PCL-R and criterion variables was largely as predicted, based on existing theory and empirical findings with male forensic psychiatric patients. We nevertheless recognise the limitations of these findings given that some of the criterion variables were postdicted (e.g., aggressive incidents) and others (e.g., risk measures) could not be entirely independent of the PCL-R scoring process, since the same rater coded both measures.

While correlations with recent aggression were significant, and in the predicted direction, they were lower than those found in many studies with offenders without disabilities (e.g., Walters, 2003), although the tendency for Factor 2 to be more strongly associated with aggressive incidents than Factor 1 is similar to that observed in other studies. A staff rating of verbal and physical aggression and non compliance (EPS-BRS Externalising Problems) in the past month was more strongly positively associated with the PCL-R total score, despite being rated independently of the PCL-R. It is therefore possible that the file based measures of institutional aggression were not as accurate a reflection of externalising behavior as staff ratings on an instrument which has been validated on an ID population.

Although the PCL-R was not designed to assess risk for violence, Hare (2003) presents evidence for the convergent validity of the PCL-R with a number of risk prediction instruments. Correlations with the VRAG were comparable to those reported in non-disabled populations, although the association between Factor 1 and the VRAG was higher in the ID sample than that reported in other studies (e.g., Glover, Nicholson, Hemmati, Bernfeld, & Quinsey, 2002). Similarly correlations of similar magnitude to those reported by Douglas and Webster (1999) between the HCR-20 and the PCL-R were observed in our ID sample. However, it is important to note that as the VRAG and the HCR-20 had not been validated on an ID sample prior to the current study, it is not known at this stage whether these instruments actually predict violence in ID populations, or indeed whether psychopathy does so. For this reason a prospective study of the predictive validity of both the PCL-R and the risk instruments which incorporate it is clearly essential, and this is currently underway as a follow-up to the wider study.

Contrary to expectations, we found a significant positive relationship between the PCL-R total score and staff ratings of Internalising Problems, particularly with symptoms of depression. However, while anxiety and depression have generally been reported to be uncorrelated with the PCL-R (Hare, 2003), some theorists have identified a subtype of psychopathy characterised by negative emotionality (e.g., Blackburn, 1975; Hicks, Markon, Patrick, Kruger, & Newman, 2004). Moreover, Hicks et al., reported that this subtype was characterised by lower cognitive abilities. The current finding with regard to internalising problems is not therefore entirely inconsistent with the literature, and further study should evaluate whether high PCL-R scorers with ID are more likely to reflect this 'emotional' subtype.

In populations with intellectual abilities in the normal range, mixed findings have been reported regarding the relationship between the PCL-R and intelligence. In the current study neither the PCL-R total nor Factors 1 and 2 were correlated with Full Scale IQ, suggesting that the PCL-R is not simply

[9] Full details available on request.

reflecting an aspect of global cognitive abilities within this lower ability group. Unfortunately the study did not have access to separate verbal and performance IQ scores, and it was not therefore possible to investigate the more complex relationship between verbal IQ and the facets of psychopathy identified in recent studies (Salekin et al. 2004; Vittaco et al., 2005) but this is a potential area for future study.

Descriptive PCL-R Data

As expected, PCL-R total scores were higher in the high security sample than in the community sample, although while high secure scores were also typically higher than in the medium–low security sample, the differences were not significant. Nevertheless the fact that the PCL-R (particularly Factor 2) differentiates between ID patients placed in higher security as a result of their perceived dangerousness provides some further evidence of the validity of the instrument in this population.

The PCL-R scores for ID offenders provided by this study can also be provisionally compared with those reported for UK populations without ID. In common with other UK samples, the mean total PCL-R scores in the current study are lower than those for North American forensic psychiatric samples. The ID sample PCL-R total score (M = 16.02, *SD* = 7.3, *n* = 669) is similar to that of the largest representative sample of English prisoners (*M* =16.8, *SD* = 7.5) described in the most recent manual (Sample B1; Hare, 2003), and to a larger UK sample described by Cooke, Michie, Hart, and Clark (2005) (*M* = 16.1, *SD* = 8.3, *n* = 1316). Total scores in the high secure ID sample (*M* = 18.3, *SD* = 7.2, *n* = 66) were also found to be similar to those observed in a sample of personality disordered patients without intellectual disabilities, resident in the same high secure conditions (*M* = 19.2, *SD* = 7.5, *n* = 73) (Hogue et al., in press). The high security ID scores are lower than those reported in a pilot study in the admission ward of the ID Service in the same hospital (Morrissey, 2003a), but this difference is largely explained by the patient characteristics of admissions during the period under study, as compared to the whole ID high secure population which was covered in the current study.

Further Research

Overall our study findings provide some initial, if modest, evidence for the reliability and validity of the PCL-R in its existing form in intellectually disabled offenders, but further empirical research, beyond the scope of the current paper, is necessary. First, the structural equivalence of the instrument needs to be established for this ID sample. Cooke and Michie (2001) have argued that a hierarchical three factor model of psychopathy is most appropriate, both theoretically and on the basis of confirmatory factor analysis (CFA) of several large PCL-R datasets. In this 13 item model, Items 11, 17 and all items in the Antisocial facet (Facet 4) are excluded. The relatively poor reliability findings in relation to these items and facet suggest that the three factor model may have some utility for conceptualising the disorder in people with ID. An examination of the factor structure of the PCL-R in this ID sample, using CFA methods, is therefore required in order to determine which of the various existing models, if any, best fits the data. Second, conventional test theory indices and descriptive data do not provide a strong test of whether individual items and total scores operate equivalently across groups (Cooke et al., 2005). Item Response Theory (IRT) analysis of this dataset will therefore provide a more detailed examination of the functioning of the instrument in relation to relevant comparison groups. Both the CFA and IRT analyses will be reported elsewhere (Cooke & Michie, 2005).

Given that a primary justification for the use of the PCL-R in clinical settings is its predictive power, a third crucial area for empirical investigation is the predictive validity of the PCL-R in offenders with ID in terms of future violence and other outcomes. Fourth, further development of the draft PCL-R ID guidelines may be necessary, particularly in relation to items which have proved difficult to code in the current study. Offenders with developmental delay have many similarities to adolescents, and it is therefore no coincidence that the adaptations to the PCL-R made to create the PCL:YV relate to many of the items which are difficult to apply to ID offenders. The guidelines we have developed predate publication of the PCL:YV and consideration should therefore be given to whether some item definitions in the PCL:YV could inform the ID

guidelines. Finally, some of our findings suggest that, in line with the emerging literature on the heterogeneity of psychopathy (Brinkley et al., 2004; Hicks et al., 2004), psychopathy may manifest itself differently in intellectually disabled populations, and more detailed qualitative comparisons of high PCL-R scorers in this and other groups would be of interest.

The further analyses and studies we have identified as being necessary are currently being undertaken. A high PCL-R score can have diverse implications for an individual; until all the relevant research has been completed, the PCL-R should be used with caution, both for clinical decision making and as an element of risk prediction in offenders with intellectual disabilities.

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