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The Assessment of Risk of General Recidivism in Offenders with an Intellectual Disability

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A thesis submitted in fulfilment of the requirements for the degree of Doctor of Clinical  
Psychology / Doctor of Philosophy

School of Psychology

Faculty of Science

University of Sydney

2015

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### **Certification by Candidate**

This thesis is submitted to the University of Sydney in fulfilment of the requirements for the Degree of Doctor of Clinical Psychology / Doctor of Philosophy. The work presented in this thesis is my own and to the best of my knowledge original, except where acknowledged. The work contained in this thesis has not been submitted for a higher degree to any other university or institution. All of the material contained in this thesis was carried out during my PhD candidature at the University of Sydney under the supervision of Alex Blaszczyński.

C. Matthew J. Frize

Date: 23.06.2015



## Acknowledgements

This thesis would have been impossible without the support of a large number of people. Firstly I would like to thank Doug Boer and Frank Lambrick for their support in the early development of this thesis and for inviting me into the group of esteemed clinicians that make up the ARMIDILO family. I am also indebted to Alex Blaszczyński for agreeing to supervise me in this thesis and for his invaluable feedback, patience and flexibility in meeting my needs. I would also like to thank Jackie Fitzgerald and the staff of the NSW Bureau of Crime Statistics and Research for providing data for this thesis and giving me access to their instruments.

I owe much of this thesis to many people within the NSW Department of Family and Community Service's Community Justice Program. I would like to thank Kelly Fishburn, Wayne Zahra and their teams in supporting the implementation of this project over such a protracted period. I would also like to give a big thank you to Christian Cabrera for his constant assistance and for working so hard to ensure data were collected and managed appropriately. I also could not have done this without the support of my supervisors at CJP, Natalie Mamone and particularly Katrina Hyland, who not only gave me time but much emotional support. Of course I am greatly indebted to the staff and clients of the CJP whom this thesis centred around.

Whilst many friends have been there for me over this journey, I would particularly like to thank my friends at Sydney University who have provided both a social outlet and level of support around the details of this thesis. I would also like to thank my many close friends who kept me sane: Sally; Vicky; Joel; Coralie; Lauren; Dave; Cat; Barry; Geoff; Bennett and Nathan.

Finally I would to thank my family. I am lucky to have such supportive, unconditionally loving and compassionate parents and brother. The longer I work in this area the more I realise how incredibly fortunate I have been.

## Abstract

The last decade has seen growing evidence for the validity and reliability of physical and sexual violence risk assessment tools for use with people with an Intellectual Disability who have a history of offending. Despite this growth, there has yet to have been a tool that accurately predicts reoffending across the broad range of offence types over the short term. This thesis addressed this gap by examining the reliability, ecological validity and predictive validity of the *Assessment of Risk and Manageability of Individuals with Developmental and Intellectual Limitations who Offend – Generally* (ARMIDILO-G). The ARMIDILO-G, along with the Historical Clinical Risk – 20 (HCR-20), Level of Service Inventory – Revised (LSI-R), Current Risk of Violence (CuRV), Group Risk Assessment Model (GRAM) and Psychopathy Checklist Revised (PCL-R) were administered to 139 people with an Intellectual Disability who have a history of offending and were being supported by a NSW community based forensic disability service. Whilst found reliable, the factor structure of the ARMIDILO-G raised question as to the separation of risk and protective items. Exploration of the tool’s ecological validity did however highlight the advantages of separating out risk and protective items. Predictive validity of instruments was measured prospectively at three and six months based on official criminal charges, convictions and custodial episodes. Little difference was found in the predictive validity of tools using an actuarial approach using Receiver Operating Characteristic curve analysis, survival curves and differential odds ratios. The GRAM, a four item tool examining static factors, performed the best out of all actuarial measures. The GRAM reliably predicted reoffending across general, theft and violent offences. The ARMIDILO-G using a structured professional judgment (SPJ) approach also demonstrated strong predictive validity for general, violent, public order and theft offences. It was unclear, however, whether the ARMIDILO-G’s

performance using a SPJ approach was owing to the qualities of the tool or assessor. The accuracy of both the GRAM and ARMIDILO-G using a SPJ approach meant no conclusion could be made as to whether SPJ or actuarial approaches, or whether static or dynamic variables, are more effective in predicting reoffending over short periods of time for offenders with an Intellectual Disability. All tools, however, tended to perform more poorly amongst Aboriginal participants. This research provided insight into the accuracy of a range of offender risk assessment tools under a range of circumstances, but also added to the literature regarding the influence of protective and environmental variables in assessing and managing risk of recidivism by those with an Intellectual Disability who have a history of offending.

*Keywords:* Intellectual Disability, Risk Assessment, Violence, Offender, Criminal, Theft

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## **Chapter 1:**

### **Introduction to the Study**

The last forty years has seen shifts of attitude towards the use of risk assessment tools in determining the probability of offender recidivism. In 1978, an American Psychological Association taskforce on psychology in the criminal justice system concluded "...the validity of psychological predictions of dangerous behaviour... is extremely poor, so poor that one could oppose their use on the strictly empirical grounds that psychologists are not professionally competent to make such judgments" (American Psychological Association, 1978, p. 1110).

Since this profound statement, a proliferation of research has occurred in the area of offender risk assessment (Krauss & Scurich, 2013). Research has led to improvements in predicting recidivism amongst many offences and offender populations (e.g., Bonta, 2002; Grove & Meehl, 1996; Stone, 2002). Harris and Tough (2004) went so far as to suggest the failure to consider using risk assessment tools to predict recidivism as being "...ethically suspect" (2004, p. 239). However, support for risk assessment tools has recently been tempered with concerns regarding: (a) the extent to which they are helpful in real world contexts (Wand & Large, 2013); (b) the manner in which they are evaluated (Mossman, 2013; Singh, Desmarais, & Van Dorn, 2013; Singh & Fazel, 2010); (c) the way in which they are being utilised (Krauss & Scurich, 2013; Mercado & Ogloff, 2007); and (d) the potential differences in validity between populations and offence types for different tools (Singh, Grann, & Fazel, 2011).

The literature has subsequently turned to consider which assessment processes and tools are more valid and reliable under which circumstances (Douglas, Cox, & Webster, 1999). In a comprehensive review of the literature, Singh et al. (2011) concluded that violence risk tools targeted to specific outcome and population tended to result in improved predictive validity.



One population that requires attention with respect to the prediction and management of recidivism are those with an Intellectual Disability (ID). Prevalence rates of those with an ID in the criminal justice system have been reported to vary depending on jurisdiction and level of criminal justice contact (Herrington, 2009; Vanny, Levy, Greenberg, & Hayes, 2009). Recent data suggest those with, compared to those without an ID in Australia are up to four times more likely to be in custody and ten times more likely to be court defendants (McCausland, Baldry, Johnson, & Cohen, 2013). Furthermore, those with an ID are known to display higher levels of interpersonal violence than those without an ID (Benson & Brooks, 2008).

Over the last decade, work has progressed towards better understanding risk of recidivism and how to assess it in those with an ID. This has included a number of studies exploring the predictive validity of established physical (e.g. Historical Clinical Risk - 20 and Violence Risk Appraisal Guide; Verbrugge, Goodman-Delahunty, & Frize, 2011) and sexual (e.g. Sexual Violence Risk - 20 and ARMIDILO-S; Blacker, Beech, Wilcox, & Boer, 2011) violence risk measures. These studies have generally provided support for the use of risk assessment tools, with some studies showing better predictive validity for those with, than for those without an ID (e.g., Gray, Fitzgerald, Taylor, MacCulloch, & Snowden, 2007).

### **Problem Statement**

The promising findings for risk assessment tools applied to those with an ID have generally been limited to physical and sexual violence, rather than the broad range of offences (such as theft). The implications of research have also been restricted by a number of methodological limitations, such as insufficient demographic and offence histories of the sample being investigated. Furthermore, a purpose-designed risk of general recidivism tool for those

with an ID has yet to be validated. This is despite the evidence that tools specific to populations tend to demonstrate better predictive validity (Singh et al., 2011).

A further problem is that current risk assessment tools tend to predict recidivism over the long term (e.g. five to ten years for the Static-99; Harris, Hanson, & Thornton, 2003). Such time frames are often considered unhelpful in community ID services, where risk management in the immediate situation is priority (Wand & Large, 2013). Tools have also focused on prediction, rather than the management of offending. This gap between assessment and treatment of risk calls for the availability of tools that facilitate risk management. Risk management necessitates consideration of the context in which the offender lives and its impact on risk. It also requires sensitivity to short-term changes, which allows for decreased restriction when risk is low so goal directed behaviour and improved quality of life can be prioritised.

The process of risk assessment for those with an ID has also been identified as potentially unhelpful. Johnston (2002) suggests the risk assessment process potentially challenges the contemporary philosophy of promoting social inclusion and least restrictive intervention for those with an ID. This is because inherent in the process is the identification of risk factors for future offending. While a large number of risk factors generally indicate risk for recidivism, even very low risk offenders are likely to hold some risk factors (e.g., being male). Risk assessment may therefore reinforce perceived risk, even if the individual has a vast range of protective factors, as risk factors are made salient. Given the difficulties of social inclusion for people with an ID even without a history of offending, a challenge is to have a process of risk assessment and management that is in line with current philosophies of supporting people with an ID.

## **Aims**

In light of the above discussion, the purpose of this research was to describe and validate a general risk of reoffending tool developed for those with an ID - the *Assessment of Risk and Manageability for Individuals with Developmental and Intellectual Limitations who Offend - Generally* (ARMIDILO-G). This research examined the extent to which protective and environmental factors of the ARMIDILO-G improved prediction of recidivism over and above the risk factors found in most offender risk assessment tools. This research also sought to evaluate how well the ARMIDILO-G predicted recidivism for different types of offences over the short-term compared to other well-established risk of recidivism measures. In addition, this research sought to add to the empirical literature by systematically reviewing and examining the quality of research on the predictive validity of risk assessment tools for those with an ID.

## **Hypotheses**

Subsequent to the above, it is hypothesised:

1. The ARMIDILO-G will predict recidivism over the short-term better than risk assessment tools which have been developed for those without an ID;
2. The ARMIDILO-G will predict general recidivism over the short-term better than violence risk assessment tools developed to assess those with an ID (the Current Risk of Violence; CuRV);
3. Client items will act as better predictors of recidivism than environmental items on the ARMIDILO-G;
4. A combination of the protective and risk items on the ARMIDILO-G will predict recidivism better than when its risk items are used alone;

5. Structured professional judgement methods will predict general recidivism better than actuarial methods of risk assessment;
6. The ARMIDILO-G will predict time to reoffend better than other risk assessment tools for offenders with an ID;
7. The ARMIDILO-G will predict seriousness of offending better than other risk assessment tools for offenders with an ID; and
8. The theoretical structure of the ARMIDILO-G will be supported through the way in which it is scored.

### **Significance of the Study**

This study will not only provide a better understanding of the merits and deficits of the ARMIDILO-G as a risk assessment tool for assessing short term risk of general recidivism, but will provide a better understanding generally of the factors that increase and decrease risk of recidivism for those with an ID. This may provide direction on how and when risk assessments should be conducted for those in the community, an issue that has rarely been addressed in the general offender literature (Skeem & Monahan, 2011). In addition, the examination of environmental variables will provide greater understanding of the role of context (in particular the service context) in the assessment of general risk of recidivism. By examining dynamic variables, it will also provide further information on variables that should be targeted for intervention to reduce risk of future offending by those with an ID. Finally, through comparing the ARMIDILO-G to other measures of risk of recidivism, it is expected to help distinguish the differences in risk and targets of intervention for those with an ID compared to the general offender population.

## **Structure of the Thesis**

Chapter 2 will explore key terms and issues surrounding the assessment of risk of recidivism by people with an ID who have offended. This includes exploring how ID and offending have been defined and applied in the literature. The complexities associated with these definitions then provide a context for discussing the relationship between ID and the criminal justice system. This chapter then goes on to examine different ways in which risk has been assessed and discusses pertinent issues in offender risk assessment.

Chapter 3 will expand on the discussion from the previous chapter and explore, in detail, the application and evaluation of risk assessments for offenders with an ID through a systematic review of the empirical literature. It will pay particular attention to findings of predictive validity for different tools and will examine the methodology that has been employed in studying this topic.

Chapter 4 describes and provides rationale for the ARMIDILO-G. This chapter identifies the ARMIDILO-G as having strong ecological validity for the assessment of risk of general recidivism amongst offenders with an ID. In particular, the tool is identified as addressing real world needs of clinicians by not only examining short-term risk, but considering contextual and protective variables, and assisting in the management of risk.

Chapter 5 examines the construct validity and reliability of the ARMIDILO-G and its environmental, client based, risk and protective elements. Factor analysis was conducted to determine the validity of the theoretical structure of the tool and to assess whether risk and protective factors are mutually exclusive or sit at opposite ends of the one continuum. In addition, this chapter provides a breakdown of demographic, psychosocial history, and offence

characteristics of participants in the study – clients of New South Wales’s (NSW) community forensic ID service.

Chapter 6 examines the ARMIDILO-G’s ability to predict recorded charges and convictions for a variety of offences using a prospective method over three and six months. Both actuarial and structured professional judgement (SPJ) approaches to scoring the ARMIDILO-G were used. The predictive validity of the Level of Service Inventory – Revised (LSI-R; Andrews & Bonta, 2001), the Historical Clinical Risk Management 20 (HCR-20; Webster, Douglas, Eaves, & Hart, 1997), the Current Risk of Violence (CuRV; Lofthouse & Lindsay, 2012) and the Group Risk Assessment Model (GRAM; Smith & Jones, 2008) were also examined for participants and compared to the ARMIDILO-G to determine concurrent validity.

Finally, Chapter 7 provides a summary of the findings, including their implications for the forensic ID sector. It also explores some of the limitations and challenges of the research and opportunities for further research.

## **Chapter 2:**

### **Literature Review**

The examination of offender risk assessment in offenders with an ID requires exploration and understanding of a range of issues pertinent to: a) those with an ID in the criminal justice system, and b) concepts and approaches to risk assessment. This chapter will examine both these issues in detail as well as their interaction.

#### **Intellectual Disability and the Criminal Justice System**

ID has long been suggested as a predictor of offending behaviour. In 1934, Steinbach stated: “The consensus is that mental retardation is one of the most constant factors responsible for antisocial behaviour” (p. 691). Despite Steinbach’s confidence in the causal relationship between ID and criminality, a further 80 years of research has identified a complex relationship.

A range of issues has precluded the emergence of clear trends or predictors of offending in people with an ID (Lindsay & Taylor, 2005), despite an increasing interest in the topic over the last 30 years (Lindsay, Sturmey, & Taylor, 2004c). Issues include a) the definition of ID, b) the definition of offending behaviour, c) the way people with an ID are managed in the criminal justice system, and d) the prevalence of ID across the criminal justice system. These issues are explored in turn below.

#### **Defining Intellectual Disability**

Intellectual Disability, also referred to as: *mental deficiency; mental handicap; mental retardation; learning disability; and intellectual developmental disorder*, is a cluster of syndromes characterised by very low intelligence and adaptive functioning deficits (American Psychiatric Association, 2013). At present, the prevalence of ID is estimated at approximately

1% of the population (American Psychiatric Association, 2013). The publication of the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5; American Psychiatric Association, 2013) has seen the condition change from being labelled as mental retardation to intellectual disability.

The change in name represents both social and political motivations (Salvador-Carulla & Bertelli, 2007). *Mental retardation* has long been considered a pejorative term, linked with policies of social exclusion and institutionalisation. The term *intellectual disability*, on the other hand, is argued to be functionally orientated, pointing to the need for intervention and support (Harris, 2013). *Disability*, rather than *disease* or *disorder* is thought to provide a more positive prognosis, inferring a lack of deficit, provided the individual is given adequate support. The disease model, however, has its proponents, because identification as a health condition maintains the condition's status in the International Classification of Diseases and Related Health Problems (Salvador-Carulla et al., 2011, p. 176). This status is considered important if ID is to be considered a serious issue worthy of financial, social and academic investment across the world.

Despite the arguments for it being a disorder, the DSM-5's focus on disability is evident in the new diagnostic criteria for ID. The DSM-5 defines ID as "...a disorder with onset during the developmental period that includes both intellectual and adaptive functioning deficits in conceptual, social, and practical domains" (American Psychiatric Association, 2013, p. 33). It identifies deficits in intellectual and adaptive functioning as needing confirmation through both clinical assessment and individualised, standardised testing of intelligence and adaptive functioning. Like the previous version, the DSM-5 requires the individual to have an IQ approximately two standard deviations below the mean, (including a margin of error of



measurement). Unlike the previous version, however, the DSM-5 notes IQ measures are approximations of real life, thus recommending examination of an individual's daily problem solving and clinical judgment to interpret IQ scores. Adaptive functioning according to the DSM-5 refers to "...how well a person meets community standards of personal independence and social responsibility, in comparison to others of similar age and sociocultural background" (American Psychiatric Association, 2013, p. 33). It also identifies adaptive functioning as consisting of three reasoning domains: social (e.g., communication and social judgement), conceptual (i.e., academic activities such as reading and maths reasoning), and practical (e.g., personal care and money management).

### **Diagnosing Intellectual Disability in the Criminal Justice System**

Incarcerated individuals are restricted from demonstrating many skills necessary for evaluation of adaptive functioning and therefore receiving a diagnosis of ID. There is some evidence to suggest that the inability to effectively assess for ID in custody has led to an under-diagnosis in custodial environments (Hayes, 2002). Whilst it is too early to evaluate the effect of the changes to the DSM, it is possible the change may make it easier to diagnose ID in correctional environments. This is because interpersonal offences (such as physical and sexual violence) could be used as evidence of a social functioning deficit (Simpson & Hogg, 2001). Previously, this behaviour alone would not be adequate to meet adaptive functioning deficit criteria. Instead, additional deficits (such as in personal hygiene or domestic tasks) would need to be identified. Accepting the offending behaviour as an indicator of an adaptive functioning deficit may thereby facilitate a diagnosis of ID when combined with a low IQ, or a cognitive profile on an IQ assessment where a full-scale IQ score cannot be determined.

Diagnosis of ID in a custodial environment is further assisted by the DSM-5 criteria due to the increased emphasis it places on clinical assessment. This is because clinical assessment is recommended as valid for diagnosing ID in situations where standardised tools might not (e.g., adaptive functioning measures in correctional settings). It is for these reasons, and the concepts of disability as opposed to disorder mentioned earlier that this thesis adopts the DSM-5 definition of ID.

### **Challenges of Researching Intellectual Disability and the Criminal Justice System**

The complexity in the diagnosis of ID makes it unsurprising that researching offenders with an ID has been a major challenge (Keith & McCray, 2002; McBrien, 2003). Other challenges that have compounded the issue of researching this area have included:

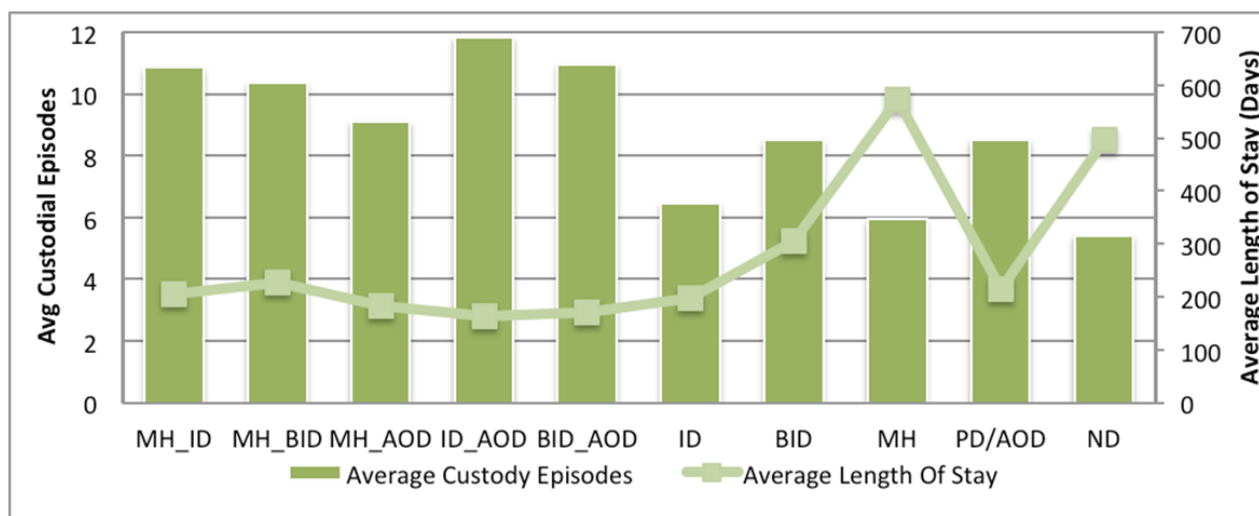
1. *The different supports (e.g., treatment), laws, and legal processes (e.g., diversionary options) available in different jurisdictions to manage offenders with an ID* (McBrien, 2003). Different processes greatly affect prevalence at different points in the criminal justice system and can subsequently affect who remains in the community and thus, who is likely to reoffend (Vanny, Levy, & Hayes, 2008). For example, Lund (1990) found a doubling in the rate of conviction for sexual offences by people with an ID following de-institutionalisation in Denmark.
2. *Prevailing attitudes towards the criminal behaviour of people with an ID*. For example, Lyall, Holland, and Collins (1995) found support staff in institutions frequently did not consider many behaviours expressed by those with ID as offending despite meeting criteria for an offence.
3. *The heterogeneous nature of offenders and offending*. Prevalence and recidivism are affected by the types of crimes committed (Lindsay & Taylor, 2005). Considering

types of offences is important as offenders with an ID might be less likely to commit some forms of crime, (e.g., fraud), resulting in higher relative rates and visibility of other crimes (e.g., physical assault). Furthermore, different ethnic or socio-demographic groups may show different representation in the criminal justice system across jurisdictions. For example, Australian Aboriginal people are significantly over-represented in the Australian criminal justice system (Snowball & Weatherburn, 2006; Weatherburn, Snowball, & Hunter, 2006).

### **Prevalence of Intellectual Disability in the Criminal Justice System**

With the challenges of conducting research, it follows that the prevalence of ID in the criminal justice system has been difficult to ascertain. Early reviews identified international prevalence ranging from 0.5% to 55% (Menolascino, 1974). Recent research has not been any more conclusive, with prevalence ranging between 0.9 and 20% in Canadian, Australian, UK and Norwegian studies (Baldry, Clarence, Dowse, & Trollor, 2013; Crocker, Côté, Toupin, & St-Onge, 2007; Herrington, 2009; Søndena, Rasmussen, Palmstierna, & Nøttestad, 2008). Prevalence appears to be affected by jurisdiction, point in the criminal justice system (e.g., court versus custody) and age (Allerton, Kenny, Champion, & Butler, 2003; Kroll et al., 2002). For example, in Australia, much higher rates have been found amongst those in local courts (36%) compared to correctional centres (8%) (McCausland et al., 2013). A particularly high prevalence has been found amongst young offenders. A UK study examining the mental health needs of juvenile offenders in secure care found 27% had an IQ below 70 on the WISC-III (Kroll et al., 2002), whilst Allerton, Kenny, Champion, and Butler (2003) found 17% of juveniles had an IQ below 70 in NSW juvenile correctional centres.

Baldry and colleagues (Baldry et al., 2013; Baldry, Dowse, & Clarence, 2012; Baldry, Dowse, Clarence, & Snoyman, 2011) also identified the lower prevalence of those with an ID in custody relative to court. While the availability of diversionary options may be partly responsible, Baldry and colleagues suggested it might also be related to the length of sentences adjudicated. They identified that compared to those without cognitive disabilities, people with an ID tended to spend less time in custody per conviction (Figure 1). They also identified that those with an ID tended to have significantly more periods of incarceration per year. This finding was even stronger for those with an ID who also had a mental disorder (Baldry et al., 2013). They suggested the consequence of this was short periods in the community, preventing community reintegration, and brief custodial sentences, preventing benefit from therapeutic programs. This in turn was highlighted as further evidence for the challenge of managing risk of recidivism of those with an ID in the community.



*Figure 1.* Average number of custody episodes compared to length of stay in custody for offenders with mental and cognitive disability in NSW 2000-2008 (Baldry et al., 2012). MH = mental health disorder; ID = intellectual disability; BID = borderline.

### **Challenging Versus Offending Behaviour in People with an Intellectual Disability**

Interpreting behaviour as either challenging or offending can mean the difference between incarceration and the provision of additional supports in the community. It is therefore important to understand the difference between what constitutes challenging versus offending behaviour if risk of recidivism is to be effectively assessed.

***Challenging Behaviour.*** Regardless of the precise prevalence of ID in the criminal justice system, it is clear that those with an ID are more likely to exhibit behaviours consistent with offending behaviour in the community. This behaviour is generally referred to as *challenging behaviour* (Emerson, 1995). Emerson (2001) defines challenging behaviour as "...culturally abnormal behaviour(s) of such intensity, frequency or duration that the physical safety of the person or others is placed in serious jeopardy, or behaviour which is likely to seriously limit or deny access to the use of ordinary community facilities" (p. 3).

Prevalence estimates of challenging behaviour in those with an ID vary widely according to population and location. There is strong evidence, however, that those with an ID express high levels of aggressive, destructive and self-harming challenging behaviours (Allen & Davies, 2007). Crocker et al. (2006) found over 50% of people with an ID receiving services in Quebec exhibited physically aggressive behaviour over a one-year period. Similarly, a review by Benson and Brooks (2008) reported 50% of those with an ID known to services displayed some form of aggressive behaviour, with a smaller proportion displaying significant forms of violence. A more conservative, but still high level of challenging behaviour was identified by Emerson et al. (2001) who found challenging behaviour expressed by 15% of those in UK ID services. This included 7% displaying aggression and 5% displaying destructive behaviour. This compares to a violent crime rate of 0.8% in the Australian population (Australian Institute of Criminology,

2012). This rate, however, is expected to under-report the equivalent rate for those without an ID given reported offences arguably represent only the most severe forms of challenging behaviour.

***Offending Behaviour.*** The definition of *offending behaviour* varies greatly. The literature has regularly defined offending in terms of conviction, charge, arrest, police contact or identified behaviour (Singh et al., 2011). McBrien (2003), in a review of research on those with an ID in the criminal justice system, found prevalence of offending amongst those with an ID varied drastically according to definitions of ID and offending. With a higher incidence of aggressive behaviours than those without an ID, yet lower prevalence in custody, the definition of offending used for ID offenders is likely to drastically affect the outcomes of risk assessment research.

Possibly the most influential theory in understanding general offending has been the *personal, interpersonal, and community-reinforcement theory of criminal conduct (PIC-R)* proposed by Andrews, Bonta and colleagues (Andrews, Bonta, & Hoge, 1990; Andrews, Bonta, & Wormith, 2006; Andrews & Bonta, 2010). The PIC-R is described as a general personality and cognitive social learning approach. It recognises behaviour (be it offending or otherwise) as under antecedent and consequent control and reliant on cognitive and social learning processes an individual develops over time.

Whilst acknowledging legal, social and psychological definitions, Andrews and Bonta (2010) define offending behaviour as: "... antisocial acts that place the actor at risk of becoming a focus of the attention of criminal justice professionals within the juvenile and/or adult justice systems" (Andrews & Bonta, 2010, p. 12). Seemingly circular, this definition highlights offending as a socially bound concept. Important to the current discussion, Andrews and Bonta (2010) categorise it as part of a more general class of *problem behaviour*. They suggest the

essence of problem behaviours (or deviant acts): "...is that their occurrence places the actor at risk of being targeted for interventions by figures of authority, control, regulation, and assistance" (p. 11). This concept of problem behaviour is consistent with the idea of *challenging behaviour* described above. Both definitions highlight that behaviour is only problematic or challenging according to the context (for example, even killing a person is not considered a crime within warfare). Specifically, the above definition suggests offending behaviour is a type of challenging behaviour that is likely to limit the person's access to ordinary community facilities at risk of getting a response by the criminal justice system.

The overlap between offending and challenging behaviour has been challenged by Doyle (2004), who proposed offending and challenging behaviour as separate types of behaviour. Doyle (2004) raised concern that serious sexual behaviour may not be addressed appropriately or safely if construed as challenging behaviour. However, a dichotomy based on severity of behaviour and required intervention as put by Doyle appears dubious since many people are convicted for behaviours that have a relatively low impact and similarly many people who display challenging behaviour pose a significant risk to themselves and others. Furthermore, there is no evidence to suggest behaviours labelled as challenging require a different intervention to those labelled offending.

Acknowledging offending behaviour as a sub-type of challenging behaviour implies there exists a continuum of challenging behaviour, with reported incidents of behaviour that have not warranted police intervention at one end, and custodial sentences at the other. Accepting a continuum broadens the definition of offending and potentially creates more complexity in its analysis (particularly in understanding the processes that determine why police might or might not become involved). Despite this problem, a continuum of challenging behaviour provides

opportunity for research in offending behaviour to be considered relevant in assessing and treating challenging behaviour in those with an ID, and vice versa.

Accepting this continuum of behaviour, however, does not come without concerns. Johnston (2002) highlights the potential danger of inadvertently labelling those with an ID who display challenging behaviour as offenders subsequent to the use of offender tools and processes. Using an offender risk assessment tool, even if the person comes up as a very low risk, implies the person is an offender. The consequence of mislabelling those with challenging behaviours as offenders is that unreasonable restrictions could be applied and services blocked or withdrawn out of fear or belief they will not benefit the individual.

The advantage, however, of seeing challenging and offending behaviour on the one continuum is that an understanding of the mechanisms behind different degrees of behaviour could be used to help assess, understand and most importantly treat behaviours of different severity (whether that be challenging or offending in nature). The difficulty is in making sure only those features that assist in managing risk and providing rehabilitation are transferred, and not the negative stereotypes associated with either group. This issue is particularly important in the area of offender risk assessment given the implications such processes have for restricting freedom and impacting on human rights.

## **Offender Risk Assessment Tools and Processes**

### **Definition and Function of Risk Assessment**

*Function of Risk Assessment.* The concept, process and function of offender risk assessment has evolved since its criticism of the late 1970s (American Psychological Association, 1978). Early studies exploring the prediction of recidivism were concerned with



predictions of *dangerousness* (Steadman et al., 1993). These studies were critiqued for being poorly conceptualised, as they measured dichotomous and ambiguous outcomes related to legal decisions concerning an offender's release from custody (Douglas, 2004). Steadman et al. (1993) with reference to Monahan (1981), subsequently reformulated the task as risk assessment in an attempt to acknowledge it as a public health concern, given the effect violence has on the health of society. This reformulation gave way to seeing risk assessment as a decision-making concept aimed at maximising public safety as opposed to being a legal phenomenon (Douglas, 2001, p12). Implicit in the public safety concept of risk assessment is that risk of reoffending presents as a matter of degree and is thus a continuous, rather than dichotomous variable. The result of this paradigm shift has been the application of risk assessment in courts, correctional services, hospitals and offender rehabilitation services to aid decisions about the outcomes for offenders in issues of release, sentencing and entry to rehabilitation services (Lowenkamp, Latessa, & Holsinger, 2006; Witt, 2000).

Risk assessments also provide information as to the risk an individual possesses relative to others who have been assessed. Comparing offenders on a risk assessment tool can help determine which offender should be prioritised for treatment or who should receive the greater intensity of intervention (Andrews & Dowden, 2006). The importance and responsibility of risk assessments for prediction has increased with the introduction of preventative detention legislation for many types of offenders in different jurisdictions (Mercado & Ogloff, 2007).

***The Relationship Between Risk Assessment and Management.*** Following up his influential and highly critical review of the risk assessment literature in 1981, Monahan (1984) suggested a new paradigm of risk assessment was needed. Part of the paradigm incorporated not one off, but ongoing re-assessment. He suggested that risk was contextual and therefore

changeable (or *dynamic*) over time. It followed then that if risk was dynamic, risk assessment tools should include variables that were also dynamic. Until that time, unchangeable (*static*) factors had primarily been used.

Intrinsic to the idea that risk is dynamic is that it has the potential to be managed through manipulation of relevant variables. A number of commentators have argued that the purpose of offender risk assessment is not *prediction*, but rather *prevention* of future offending behaviour (Douglas et al., 1999; Hart, 1998; Heilbrun, 1997). Reed (1997) argues that the process of risk assessment includes not just the prediction of offending, but an obligation to manage that risk. Furthermore, the use of validated risk assessment tools to identify targets for intervention has been suggested as essential for the rehabilitation of offenders (Andrews & Dowden, 2006). It has been argued that the management of offending behaviour is aided by monitoring changes in scores on tools (Grevatt, Thomas-Peter, & Hughes, 2004).

While manipulation of dynamic risk factors might aid risk management, the fact that many tools with strong predictive validity only include static (unchangeable) factors (e.g., the Static-99; Harris et al., 2003) highlights that risk management is not intrinsic to risk assessment. Rather, the purpose of a risk assessment can simply be to identify who is likely to offend first or whether the individual has a reasonable likelihood of reoffending. Some have argued that inclusion of dynamic risk factors for the sake of considering treatment targets may decrease predictive validity, given they are not necessarily the items with the strongest predictive power (Baird, 2009).

The extent to which dynamic risk factors contribute towards prediction of offender risk, however, is still open to debate. One of the most well researched violence risk assessment tools, the Historical Clinical Risk Management 20 (HCR-20; Webster et al., 1997) contains both

dynamic and static factor sub-scales. Research on it has produced contrasting findings, showing both dynamic variables (e.g., Grevatt et al., 2004; Strand, Belfrage, Fransson, & Levander, 1999) and historical (static) variables (e.g., Stribling, 2004) having the stronger predictive power.

Skeem and Monahan (2011) suggest that risk assessment and risk management are two separate, but associated functions. They identify risk assessment as necessary, but not sufficient for risk management. This is partly due to the identification of a risk factor being inadequate to inform the assessor how it should be managed. Rather, it is how the results of the assessment are used that determines if the risk is adequately managed. In this way, a risk assessment tool may, by way of its items and structure, promote risk management.

Heilbrun (1997) suggests it is valid that a risk assessment tool be developed for either prediction or management. He argues the appropriateness of the model chosen depends on the nature of the “post-assessment control” (p. 352). For a management approach, there must be ongoing ability and authority to monitor and direct compliance, so dynamic factors can be manipulated. Heilbrun proposes a risk management process as most appropriate when continued court jurisdiction over the individual exists. If no such authority exists, Heilbrun suggests the decision is better conceptualised as a one off prediction, as there will be no chance of modification in light of further information.

Those with an ID are often supported in the community, by either disability or correctional services through legal or guardianship orders. Ongoing support highlights the availability of influences to modify variables that might mitigate risk. This includes manipulating environmental factors (such as limiting access to victims), or supporting internal factors (such as assisting with emotion regulation in high-risk situations). Therefore, whilst risk

assessment does not necessitate risk management, the issues in supporting people with an ID who offend lend weight to assessment processes that incorporate risk management.

***Target Variables of Risk Assessments.*** An added complexity in defining and using offender risk assessment tools is defining the variable being predicted. As aforementioned, offending has been classified in terms of conviction, charge, arrest, police contact or institutional incident (Singh et al., 2011). Each target has merit depending on the context and question being asked by a clinician, researcher or court. Furthermore, features of the offence, jurisdiction and offender influence each target differently.

Douglas (2002) identifies, albeit with reference to violence, that risk is a multifaceted concept. The majority of risk assessment research, however, has examined risk in relation to the likelihood of reoffending. Risk can be described in terms of its nature, likelihood, imminence, frequency, seriousness and duration. Each facet represents an important consideration regarding risk. For example, whilst someone with a history of shoplifting might present with a higher *likelihood* of reoffending relative to a sex offender (e.g., 80% versus 20%), the community and possibly therefore a parole authority may perceive the *severity* of the sex offender's behaviour as more of a concern and deem him or her a greater risk. Subsequently, each of these features should be considered reasonable targets in risk assessment, if not a combination of them if a clear picture of risk is to be established.

***Definition of Risk Assessment.*** Following the above discussion, this thesis defines offender risk assessment as: *the process of gathering information about a person and their environment, and using it to forecast the nature, likelihood, frequency, seriousness, imminence and/or duration of behaviour which can cause the actor to be a focus of the attention of criminal*

*justice professionals*. Importantly, this definition does not identify the reason for the assessment (as proposed by Hart & Logan, 2011), nor how such an assessment might occur.

### **Clinical versus Mechanical Approaches to Risk Assessment**

The multi-faceted nature of offending, and therefore risk assessment, provides rationale for the large range of risk assessment processes and tools that have been developed over the past half-century. A meta-review by Singh and Fazel (2010) identified that 126 risk assessment tools have been empirically investigated in 2,232 studies. They identified 40 previous meta-analyses examining the validity and reliability of offender risk assessments across the USA, Europe, United Kingdom, Australia, and New Zealand. Most common have been measures assessing risk of general offending, and physical and sexual violence.

***Unstructured Clinical Judgement.*** Andrews, Bonta, and Wormith (2006) describe an evolution of risk assessment processes. Historically, clinicians (primarily psychiatrists and psychologists) utilised unstructured professional judgement (Hart & Logan, 2011). Clinical judgement methods have been described as relying “...on human judgment that is based on informal contemplation and, sometimes, discussion with others (e.g., case conferences)” (Grove & Meehl, 1996, p. 293). Clinical judgement relies on the opinion of the assessor to decide which factors are important and how the data are weighted and combined to determine the nature and level of risk (Grove, Zald, Lebow, Snitz, & Nelson, 2000). Advantages of this method are that it incorporates unique characteristics associated with the assessed individual and environment, and takes into consideration the experience of the clinician.

***Mechanical Approaches.*** Unstructured clinical judgement has been contrasted with mechanical processes which Grove and Meehl (1996, p. 293) define as “...a formal, algorithmic

procedure (e.g., equation) to reach [a] decision". They can take the form of actuarial, statistical or algorithmic predictions using items that have been identified *a priori* (Grove et al., 2000).

Andrews, Bonta, and Wormith (2006) indicate that mechanical processes have progressed from second generation measures based on static factors unrelated to intervention, through to third generation measures that also include dynamic factors which influence intervention (*criminogenic needs*) and have theoretical basis, finally to fourth generation measures that also consider case management.

Mechanical processes have been suggested to outperform clinical judgment owing to common biases present in clinical judgment. Biases include assessors not accounting for the base rates of offences, focusing on salient risk or protective factors, and failing to apply optimal weighting of risk factors (Meehl, 1954). These biases have been shown to apply to professionals and lay assessors alike. For example, Green and Baglioni (1997) found judges and psychiatrists performing no better than lay assessors in making predictions of future offending by those being released from a maximum security hospital.

A meta-analysis by Mossman (1994) found that whilst clinical judgment was better than chance, mechanical methods predicted violent recidivism significantly better. This finding has been upheld for general, physical violence, and sexual violence risk assessment tools (Aegisdottir et al., 2006; Grove et al., 2000; Hanson & Morton-Bourgon, 2009).

### **Actuarial versus Structured Professional Judgment Tools**

A large body of research has examined which offender risk assessment tools and processes produce the greatest validity and reliability for specific populations and offence types. An ongoing debate has been whether *actuarial* or *structured professional judgement* (SPJ)

mechanical approaches to risk assessment are more valid and reliable (Douglas, Ogloff, & Hart, 2003; Falzer, 2013).

***Actuarial Approaches to Risk Assessment.*** Actuarial (also referred to as non-discretionary or statistical) approaches utilise items based on statistically validated relationships between measurable predictor and outcomes variables, whereby weightings or scores are assigned to variables according to the characteristics of the person being assessed (Litwack, 2001). These scores are then added according to an algorithm or explicit rules to produce a score that relates to a relative measure of likelihood for recidivism (either a risk band, probability ratio or percentage chance of recidivism) based on a norming sample. These measures are highly structured and based on large samples, often relying on static, historical data of samples of offenders (Doyle & Dolan, 2007).

Advantages of actuarial approaches are that they provide objectivity and structure to assessments of risk (Mills, 2005). This objectivity can facilitate comparison between multiple offenders or of the one offender over time. The majority of tools utilise small numbers of easily accessible items (such as demographic details or offending history). Subsequently, assessments are often easy and quick to conduct. Additionally, actuarial assessment tools can be completed by those without strong clinical backgrounds provided a) they have been taught how to administer the measure, b) the information is available, and c) the items require minimal clinical interpretation (unlike constructs such as personality). This means such tools can often be implemented in services at minimal cost.

Despite strong advantages, actuarial tools have been criticised for failing to adequately take into consideration unique individual factors in the assessment of risk. Grove and Meehl refer to this as the “broken leg case” (1996, p. 307). They use the example of a professor that has

an 83% chance of seeing a movie on a Friday, but is unlikely to do so if he has a broken leg - making the probability score worthless. Actuarial measures do not acknowledge issues that, whilst not likely to be common in large samples, are likely to greatly influence risk at the individual level. Grove and Meehl (1996), however, note that whilst an important concern, such unique considerations are likely to be infrequent, as they would otherwise be picked up in the statistical analysis (e.g., health concerns might be identified as a protective factor).

The application of actuarial approaches is also only valid when used on populations similar to that of the original sample (Gottfredson & Moriarty, 2006). This is because actuarial measures compare characteristics of the individual being assessed to those with the same characteristics in the norming sample, assuming other recidivism related characteristics remain constant. The influence of the norming sample means differences between offender populations pose challenges in the application of actuarial measures. An example of this is Australian Aboriginal people, who demonstrate significant over-representation in the Australian criminal justice system (Snowball & Weatherburn, 2006). The over-representation of Aboriginal people is such a major issue that it has been considered a key static risk factor for recidivism in Australian studies (Smith & Jones, 2008).

Despite the challenges ethnicity may pose in conducting valid risk assessment, most widely used risk assessment tools display fair to good predictive validity across jurisdictions using similar methodology (Singh et al., 2013). This finding is supported by theories such as the PIC-R provided by Andrews and Bonta (2010) which suggest the causes of offending tend to be consistent across different cultures. This view has also been somewhat supported by meta-analysis (Bonta, Law, & Hanson, 1998).



Another criticism of most actuarial measures is their poor utility in aiding risk management (Falzer, 2013). Tools such as the STATIC-99 (Harris et al., 2003) and Violence Risk Appraisal Guide (VRAG; Quinsey, Harris, Rice, & Cormier, 1998), whilst displaying good predictive validity, include no dynamic variables, inhibiting the identification of targets for intervention. They are also not sensitive to changes in risk over short periods of time or across environments. This limits their use to purposes of prediction and not necessarily prevention, other than when used to prioritise individuals for treatment.

Mills (2005) emphasises that a reliance on static factors is not a critique of all actuarial measures. Tools such as the Level of Service Inventory – Revised (LSI-R; Andrews & Bonta, 2001) incorporate dynamic factors whilst others such as the STABLE 2000 (Hanson & Harris, 2000a) consist solely of dynamic factors. The Level of Service – Revised (LSI-R; Andrews & Bonta, 2001) also includes a *clinical override*, allowing an administrator to override the actuarially determined prediction on consideration of clinical information. Referred to as an *adjusted actuarial* approach, this approach has been argued to have advantages over a pure actuarial approach as it incorporates the advantages of clinical judgement (Otto, 2000). Quinsey et al. (1998), however, identify the approach as less reliable than purely actuarial approaches and is open to the same biases and issues of unstructured clinical judgement.

***Structured Professional Judgement Approaches to Risk Assessment.*** Structured professional judgement (SPJ), often referred to as guided or structured clinical judgement, consensus guideline or clinical practice parameter approaches (Hart & Logan, 2011), differ from actuarial approaches in two ways. Firstly, they utilise empirically or consensus (as opposed to actuarially) derived risk factors (Douglas et al., 1999). The SPJ process has been argued to lend itself to understanding causal factors for the behaviour of the individual being assessed, since the

empirical literature tends to explore more than correlational associations (Hart & Logan, 2011). Secondly, unlike actuarial approaches, SPJ tools do not prescribe how items should be added. Instead, they provide guidelines or “*aide memoire[s]*” (Webster et al., 1997, p. 5) for considering an individual’s risk of reoffending. Thus, the judgement of the clinician is used to determine how the various factors weigh and aggregate to produce risk categories (e.g., low, medium or high) (Rettenberger & Hucker, 2011). SPJ tools also allow for unique considerations, such as the *broken leg case* referred to earlier.

The flexibility of these tools and reliance on clinical concepts requires greater reliance on the clinician’s knowledge of the client and the empirical evidence related to the assessed behaviour (e.g., sexual violence) in determining the level of risk (Strand et al., 1999). This flexibility is argued to promote practical application to the case at hand, but ensures it is still reliant on empirical information. It is also common for these tools to focus on dynamic variables, lending them to managing rather than purely predicting risk (Doyle & Dolan, 2007). By having an *a priori* list of variables, SPJ tools allow for a level of structure otherwise unavailable to unstructured clinical judgement. For these reasons, SPJ approaches have been argued as falling between unstructured professional judgement and actuarial processes, and as attempting to bridge the gap between science and practice (Douglas et al., 1999).

Problems with the SPJ approach are that measures tend to be exposed to the same biases as unstructured professional judgment (Harris & Rice, 2007). Furthermore, with a reliance on clinical judgment comes the need for implementation by highly trained staff. With generally more items in SPJ tools, they arguably also take longer to complete than actuarial tools owing to the time taken to obtain information. Practically speaking, this means greater financial cost to implement.

***The Relationship Between Actuarial and SPJ Approaches.*** There are strong proponents for both actuarial and SPJ processes (Hanson & Morton-Bourgon, 2009; Hart & Cooke, 2013). Quinsey et al. (1998) went so far as to argue that: “[w]hat we are advising is not the addition of actuarial methods to existing practice, but rather the complete replacement of existing practice with actuarial methods” (p. 171). With strong cases for both, there have been suggestions that SPJ and actuarial methods should be incorporated into the formulation of risk through a convergent (Samuels, O’Driscoll, & Bazaley, 2005; Singer, Boer, & Rettenberger, 2013) or a two-step process (Monahan et al., 2006). Others have argued combining the two is impossible given the theoretical difference between actuarial and SPJ approaches (Falzer, 2013). Harris and Rice (2007) state: “[t]he idea that actuarial methods can somehow be blended with clinical intuition is a logical non sequitur; forensic decision makers must inevitably choose between them” (p. 1652).

Skeem and Monahan (2011) suggest actuarial and SPJ approaches are not diametrically opposed. Instead, they identify that actuarial instruments regularly incorporate differing levels of clinical judgement in their application. Many tools require the use of clinical judgement to identify risk factors. This is particularly the case when items are dynamic, can be scored along a continuum, or relate to emotional, cognitive or behavioural facets such as psychopathy or mental illness (e.g., VRAG; Quinsey, Harris, Rice, & Cormier, 2006). Other tools, such as the LSI-R (Andrews & Bonta, 2001), also provide for the use of a *clinical override* to account for unique considerations such as the aforementioned broken leg case.

Douglas (2004) identifies that SPJ approaches have tended to argue their validity using an actuarial approach. Many studies to date have utilised SPJ tools in an actuarial manner to produce overall scores that are then compared to follow-up rates of recidivism (Cooke, Michie,

& Ryan, 2001; Dernevik, 1998). Studies that test predictive validity in the manner that the tools recommend (i.e., incorporating clinical judgement) are rare (Douglas & Ogloff, 2003).

## **The Predictive Validity of Risk Assessment Tools**

### **Receiver Operating Characteristic Curves**

A key measure of a risk assessment's effectiveness is the extent to which it can predict recidivism. The method that has been recommended to determine the predictive accuracy of risk assessments has been the area under of the curve (AUC) statistic of the Receiver Operating Characteristic curve (ROC) (Rice & Harris, 1995). Stemming from psychoacoustic research and signal detection in World War II, the statistic plots the sensitivity and specificity for each cutting point of the instrument, such that it graphs its discriminatory capacity (Falzer, 2013). In this way, the AUC compares the true positive to the false positive rate for each score on the instrument. The area below the line, created by plotting the scores, is referred to as the area under the curve (AUC). It represents the extent to which the tool accurately predicts recidivism and non-recidivism. A straight line represents 50% of the area, indicating the tool is no better than chance at predicting recidivism (Hanley & McNeil, 1982).

An advantage of this statistic beyond the fact it considers false positives to the same extent as true positives, is that unlike many other statistics, it is not sensitive to base rates for reoffending (Harris & Rice, 2007). This can be helpful if the base rate for an offence is not known amongst a population (as is often the case for offences committed by those with an ID).

### **The Predictive Validity of Risk Assessments Using ROC Curve Analysis**

While some studies have argued actuarial tools provide stronger predictive validity over SPJ approaches (Hanson & Morton-Bourgon, 2009; Hilton, Harris, & Rice, 2006), a number of

reviews have suggested no clear difference exists (Catchpole & Gretton, 2003; Litwack, 2001). Hart, Michie, and Cooke (2007), in examining the predictive validity of actuarial risk assessments, suggested the margins of error of actuarial tools were too great to be able to make a judgment about individual scores. They concluded that actuarial tools therefore explained group processes and risk, but could not be used to predict an individual's risk. This conclusion was challenged by Harris and Rice (2007), who argued that such error rates are not too large, with actuarial measures even further improved when base rates of recidivism are known and optimal selection ratios utilised.

Despite the debate, a thorough systematic review examining the predictive validity of violence risk assessment tools by Singh, Grann and Fazel (2011) found that both actuarial and SPJ measures showed good predictive validity, with neither proving significantly better in predicting risk of recidivism. Median AUCs for the most common risk assessments ranged from 0.66 to 0.78. Table 1 provides details of each measure with median AUC, sample size and number of samples used. Similar results were found in examining tools used to predict risk of sexual recidivism (Tully, Chou, & Browne, 2013).

Table 1

*Median area under the curve produced by nine risk assessment tools ranked in order of strength (Singh et al., 2011)*

Tool	Sample Size	Number of Samples	Median AUC	Interquartile Range
SVR-20	380	3	0.78	0.71 - 0.83
SORAG	1599	6	0.75	0.69 - 0.79
VRAG	2445	10	0.74	0.74 - 0.81
SAVRY	915	8	0.71	0.69 - 0.73
HCR-20	1320	8	0.70	0.64 - 0.76
SARA	102	1	0.70	-
STATIC-99	8246	12	0.70	0.62 - 0.72
LSI-R	856	3	0.67	0.55 - 0.73
PCL-R	2645	10	0.66	0.54 - 0.68

Note. SVR-20 = Sexual Violence Risk 20 (SVR-20; Boer, Hart, Kropp, & Webster, 1997); SORAG = Sex Offender Risk Appraisal Guide (Quinsey et al., 1998); VRAG = Violence Risk Appraisal Guide (Quinsey et al., 1998); SAVRY = Structured Assessment of Violence Risk in Youth (Borum, Bartel, & Forth, 2003); HCR-20 = Historical Clinical Risk 20 (Webster et al., 1997); SARA = Spousal Assault Risk Assessment (Kropp, Hart, Webster, & Eaves, 1999); LSI-R = Level of Service Inventory – Revised (Andrews & Bonta, 2001); and PCL-R = Psychopathy Checklist Revised (Hare, 1991).

### **Challenges to Receiver Operating Characteristic Curves**

Whilst the AUC is the effect estimate of choice in measuring predictive validity for a given risk assessment, Singh, Grann and Fazel (2011) identified that it was ineffective when comparing risk assessment measures, owing to interquartile ranges of the measures assessed overlapping, making comparison impossible. Mossman (2013) has also questioned the utility of ROC curves in assessing the validity of offender risk assessment tools given the statistic does not

provide details about sensitivity-specificity trade-off. Similarly, Mills (2005) identified, through application of the LSI-R and VRAG, weaknesses in using the AUC when the tools are used on samples which have a different rate of reoffending from the initial norming sample.

### **Alternative Analysis of the Predictive Validity of Risk Assessment Tools**

To counter the difficulties of AUC and compare risk assessment tools in their predictive validity, Singh, Grann and Fazel (2011) used a combination of median AUCS, positive predictive power, negative predictive power, and pooled diagnostic odds ratios. Using this combination, the Structured Assessment of Violence Risk in Youth (SAVRY; Borum et al., 2003) showed the highest and most consistent predictive validity of tools assessed. When comparing tools that performed well to those that performed poorly, a key performance factor appeared to be how specific the tool was to a population or offence type. Those tools that performed poorly did not assess the risk of a specific offence type, with the LSI-R being a general recidivism risk tool and the Psychopathy Checklist – Revised (PCL-R; Hare, 1991) being a personality measure not designed to assess risk of re-offending. The SAVRY, in contrast, is a very specific tool, targeting risk of physical violence by juveniles.

In addition, when the SAVRY was removed, the systematic review found assessments were most predictive for those of Caucasian background and those of older age. Furthermore, the odds ratios identified significantly different performance within the measures between studies. Singh and Fazel (2010) suggested heterogeneity of offences and offenders were a significant source of this variability highlighting the need to examine the effect of various offender and offence characteristics in the predictive utility of offender risk assessments. This finding raises the potential for ID as a variable that may influence the validity of offender risk assessment tools.

## **Conclusion**

The last thirty years has seen considerable developments in the field of offender risk assessment. Developments have led to the dominance of actuarial and SPJ approaches, with a focus on prediction over and above risk management. Recent reviews have indicated little difference between the approaches in their ability to predict risk, albeit with some differences between tools based on offender characteristics. Those offenders with an ID are a small but vulnerable group within the criminal justice system. They are also a difficult group to research given challenges of diagnosis. It is therefore unsurprising that only a small amount of research has been conducted to examine the validity of risk assessment tools amongst this population. A lack of focus on those with an ID is despite such disability potentially having a significant influence on the performance of risk assessment tools for this population. The following chapter subsequently provides a systematic review of the predictive validity of offender risk assessment tools on people with an ID who have offended.



## **Chapter 3:**

### **A Systematic Review on the Validity of Offender Risk Assessment Processes for Use with Offenders with a Cognitive Impairment**

This chapter aims to systematically review the effectiveness of tools used to predict recidivism in people with a cognitive impairment (CI) who have a history of offending. CI is used in place of ID in this chapter in recognition that most research has included participants with an IQ significantly below average (an IQ below 70-80) without other criteria to meet the full diagnosis of ID. It also reflects the range of terms used in the literature (including mental retardation, intellectual disability, learning disability and developmental disability).

#### **Risk Assessment for those with an Cognitive Impairment who Offend**

An increasing interest in the application of offender risk assessment processes for those with a CI has occurred over the last decade. To date, the research examining the effectiveness of risk assessment tools for those with a CI and the methodology employed in these studies has not been systematically reviewed.

The previous chapter highlighted that those with a CI pose significant challenges to researchers and clinicians trying to assess and manage risk of reoffending in the community. The growth in interest of those with a CI in the criminal justice system has been suggested to follow from the increased exposure of those with a CI to the criminal justice system subsequent to deinstitutionalisation (Lund, 1990). This is reflected by the growth of research on the topic over the last twenty years (Boer et al., 2011).

Relatively little has been done to examine which offender risk assessment tools are valid and can be reliably used for people with a CI who have offended despite increasing research on this population. Only a small number of selective literature reviews over the last fifteen years have examined the feasibility, validity and reliability of offender risk assessment tools for this population.

Halstead (1997), whilst noting a lack of research and the need to address risk of reoffending, suggested those with a CI were likely to be underestimated in their level of dangerousness owing to difficulty in obtaining histories and obtaining views of individuals. Despite pressure through policy to apply mechanical risk assessments for those with an CI, Taylor and Halstead (2001) noted a gulf existed between research / government policy and clinical practice in risk assessment application. They suggested clinicians in the field of CI tended to rely on clinical judgement and distrusted risk assessment instruments owing to the ambiguous nature of concepts such as *risk* and *risk assessment*, the limited utility of measures examining primarily static factors in individual cases, and the lack of tools developed specifically for this population. In response, Taylor and Halstead (2001) proposed a structured framework for considering risk based on theories of offending that was not reliant on established risk assessment tools.

A similar sentiment was shared by Johnston (2002) who, in a review of the topic, concluded there was little direct evidence for the application of risk assessment tools to those with a CI and instead identified a number of barriers for their use. These included the unclear relationship between offending and challenging behaviour, the need for normalisation of risk taking by those with a disability, and the need to focus on management of offending behaviours as opposed to the prediction of reoffending by those with a CI. Despite these challenges,

Johnston noted a shift in the literature towards a more dynamic appreciation of risk and its management, which was likely to benefit the support of those with a CI.

Similar issues about the use of risk assessment tools were raised in examining the assessment of violent (Taylor, 2002) and sexual (Lindsay, 2002) behaviour. Lambrick (2003) suggested some of the issues were owing to the challenges of diagnosing and identifying base rates of offending for those with a CI, and the differences between this group and the general offender population, including the presence of support staff for those with a CI. In a similar sentiment, Boer, Tough, and Haaven, (2004) proposed the need to attend to environmental factors given the influence of ecological variables on those with a CI. By 2004, Lindsay and Beail (2004), whilst providing unique strengths and weaknesses for the application of various forms of risk assessment, highlighted that at that time there was not one validated tool for those with a CI. Despite a lack of validated tools, Harris and Tough (2004) suggested that a failure to consider the use of risk assessments was "...ethically suspect" (p23) and proposed the use of the STABLE-2000 and RRASOR for assessing risk of sexual recidivism based on practical considerations.

Keeling, Beech, and Rose (2006) reviewed the assessment of sexual offenders with an ID, examining not just risk, but the assessment of needs and responsivity issues as well. They highlighted that whilst one predictive validity study had been completed at that time (on the STATIC-99 and RRASOR), there was a need for both the validation of currently available tools and the development of purpose built tools for those with an ID, given the potential for this population to maintain unique risk and protective factors. The authors also identified recent research regarding an ID specific tool - the Dynamic Risk Assessment and Management System (DRAMS; Lindsay et al., 2004b). The DRAMS is a short term dynamic risk tool to be used by disability support staff. Identified as working alongside other risk measures, the DRAMS was

developed to assist staff in determining whether a person with a CI is of too great a risk to attend programs or activities on any given day, allowing for prevention of behaviour. Another purpose made tool that has been the focus of recent research is the Assessment of Risk and Manageability of Individuals with Developmental and Intellectual Limitations who Offend – Sexually (ARMIDILO-S; Boer et al., 2011). The ARMIDILO-S is a SPJ tool that considers both acute and stable dynamic environmental and individual risk factors associated with sexual behaviour. In addition, this tool examines protective factors in recognition of a) the dangers of labelling a person with a CI as an offender and b) the role protective factors play in management of risk. It is an adaptation of this tool upon which the current thesis is based.

Tools developed for the non-offending ID population include the Assessment of Interpersonal Risk (AIR; Preacher & MacCallum, 2003). The AIR is an actuarially scored measure examining five behavioural domains: aggression, property damage, emotional, sexual and developmental. Unlike most tools, it examines the interaction between the likelihood and severity of offending and is aimed at determining the risk between two individuals with a CI within a service.

A number of guidelines have also been developed to assist clinicians apply risk assessment tools and processes for the general offender population to those with a CI. This includes work by Morrissey and colleagues regarding the PCL-R (Morrissey, 2003; Morrissey et al., 2010; Morrissey et al., 2007a; Morrissey et al., 2005) and Boer and colleagues (Boer, Frize, Pappas, Morrissey, & Lindsay, 2010b, 2010) regarding the Historical Clinical Risk 20 (HCR-20; Webster et al., 1997) and the Sexual Violence Risk 20 (SVR-20; Boer, Hart, Kropp, & Webster, 1997). These guidelines provide direction for clinicians on how items in these risk assessments might be interpreted and scored for those with a CI.

A small number of studies examining the predictive validity of risk assessments for those with a CI have subsequently been conducted. Lindsay, Hastings, and Beech (2011) selectively reviewed this literature and reported increasing interest in the topic, with the publication of studies examining the predictive validity of common risk assessment tools for physical violence. Since then, a number of studies have been conducted examining the application of a range of tools on those with a CI for different offence types. In addition to risk assessment tools, studies have examined tools measuring psychopathy (Morrissey et al., 2007a), quality of life (Marks, 2011), anger (Novaco & Taylor, 2004a) and impulsivity (Kells, 2011), following hypotheses that such constructs might be related to risk of reoffending in those with a CI. Despite this research, the validity of risk assessment processes for those with a CI has not been systematically reviewed. Furthermore, despite the many challenges in the methodology of examining risk assessment processes, this issue has not been explored in detail for those with a CI.

In light of these issues, the aims of this study were to determine: (a) the extent to which mechanical approaches to offender risk assessment are valid and reliable for the prediction of recidivism amongst offenders with a CI; (b) under which conditions risk assessment tools and processes are valid for those with an CI and; (c) the appropriateness of the methodology of studies to date. From this, it is hoped that recommendations can be made about improving the methodology of future studies to ensure research conducted in this area is valid and produces greatest benefit.

## **Method**

### **Review Protocol**

The 27 item Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist was used to ensure a consistent reporting of results (Moher, Liberati, Tetzlaff, & Altman, 2009). A systematic review protocol was also developed to capture information for the PRISMA checklist in order to ensure the review was conducted in a structured and objective manner (Appendix A).

### **Search Strategy**

A systematic search for published and unpublished work was conducted of the following electronic databases:

- OVID: PsycINFO (1806 to June week 3 2012);
- OVID: MEDLINE (1946 to June week 2 2012);
- OVID: EMBASE (1974 to June 26 2012);
- Web of Knowledge (search conducted on 27.06.12);
- Google Scholar (search conducted on 27.06.12);
- DART (search conducted 29.06.12) and
- JSTOR: (search conducted on 27.06.12).

Additional studies were identified through a search of reference lists of studies meeting the inclusion criteria. In addition, studies were also found through websites related to offending behaviour and ID. These included the American Association on Intellectual and Developmental Disabilities ([www.aaid.org](http://www.aaid.org)), the Forensic Network (<http://www.forensicnetwork.scot.nhs.uk>), the New South Wales Department of Ageing, Disability and Homecare intranet (

intranet.nsw.gov.au) and, the United Kingdom's National Health Service's website (www.nhs.uk).

### **Search Terms**

A list of search terms related to *risk assessment*, *intellectual disability* and *offending behaviour* were used in each of the databases. A complete list of terms is provided in Figure 2. All terms were inputted into each database. All subject headings were auto-exploded in databases to increase the chance that appropriate studies were identified.

Wildcards were used where databases could only accept a limited number of search terms. Wildcards were chosen based on terms that produced the largest number of hits for each subject category in PsychINFO, Medline and Embase. A list of these wildcards is included in Figure 2. Details of how wildcards were used in various databases are listed in Appendix A.

### **Study Selection**

Studies from all years and languages were considered for inclusion. Google Translate was used to translate non-English references and abstracts. All studies identified in the search strategy were subject to the following inclusion / exclusion criteria (see Appendix B):

- *Population* – Participants identified as having significantly low IQ or equivalent diagnosis (e.g., intellectual disability, cognitive impairment, mental retardation, learning disability or developmental disability) who had a history of displaying offending behaviour. Offending behaviour could be an arrest, charge or conviction, or alternatively be described as offending behaviour without criminal justice contact (including challenging behaviour).
- *Exposure* - A list of predictors determined a priori were used as a measure to compare to the incidence of reoffending. The measures could be: a) a risk assessment tool; b) one

that examined a behavioural (e.g., impulsivity) or mental (e.g., quality of life) construct, or c) a list of generated predictors.

- *Outcome* – Data describing reconviction, charge, warning or recorded behaviour that could lead to a criminal charge. Change of level of security was also included to ensure coverage of the predictive utility of approaches.
- *Study type* – Cohort or case control studies, systematic reviews or literature reviews.
- *Setting* - No restrictions (community, prisons, hospitals etc.).
- *Exclusions* – Commentaries, opinion papers, studies examining self-harm behaviour.

Figure 3 displays the process of study selection for the systematic review. Where multiple publications of the same study were found, the publication with greater detail was used (e.g., PhD theses were chosen over journal publication). Two thousand and eleven abstracts were identified through the search strategy. The author (MF) reviewed all titles and abstracts to determine relevance according to the inclusion and exclusion criteria. Reasons for exclusion are provided in Box A. An independent assessor (RM) assessed a random selection of 5% (98) of abstracts to ensure inter-rater reliability; a 100% agreement rate was obtained.



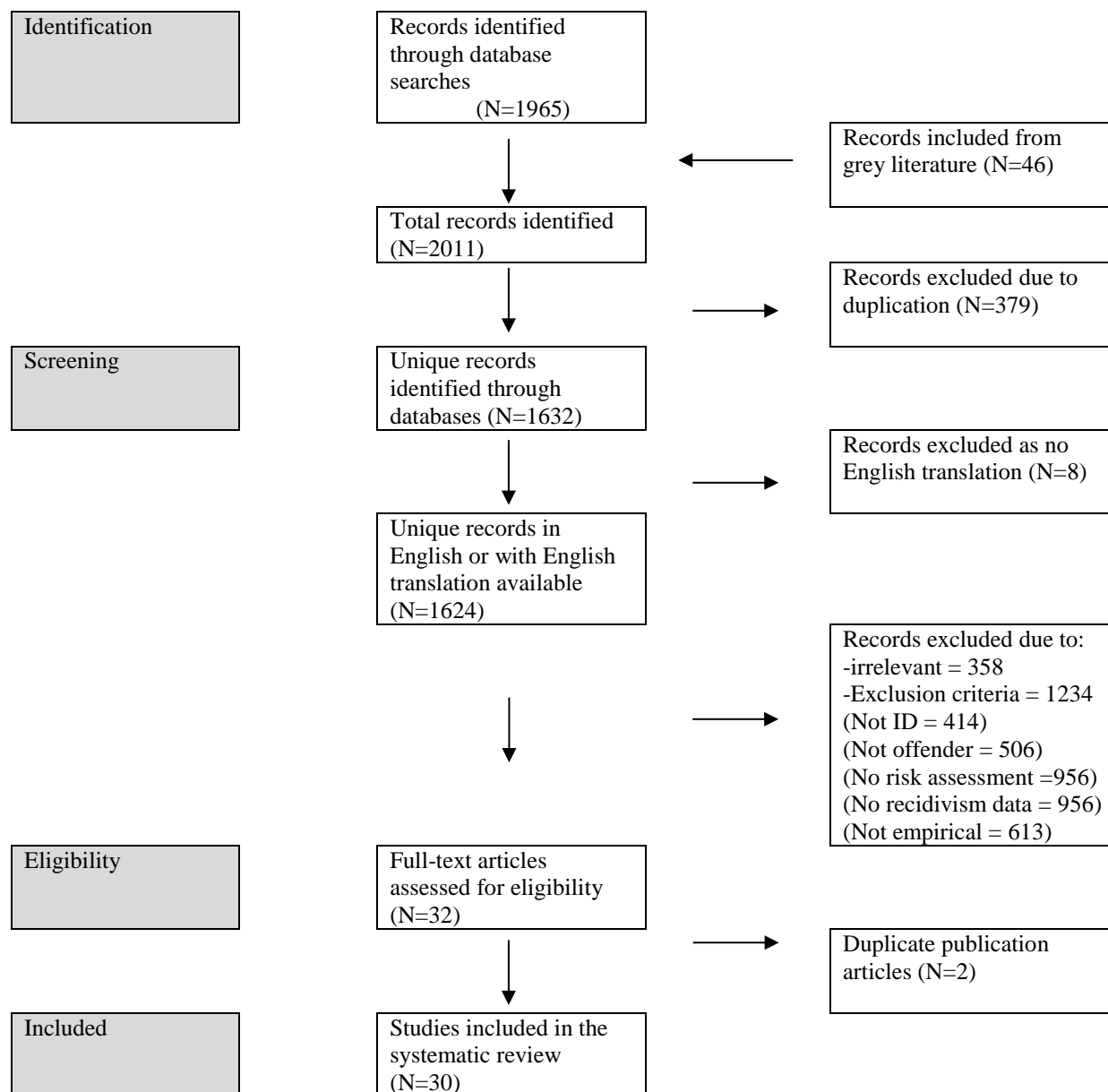
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Figure 2. List of search terms and highest frequency wildcards used in electronic databases.

### **Quality Assessment**

The quality of each included study was investigated for potential bias using an assessment adapted from the Critical Appraisal Skills Program Cohort Study Checklist (CASP, 2013). This comprised a pro-forma of 24 items. Questions omitted from the original checklist were whether missing participants were included in follow up statistics, and whether participants were blind to results. Each item was scored on a three-point scale, 2 (presence of the criteria), 1 (partial presence), and 0 (absence of the criteria or insufficient information). Scores were summed to produce a *quality score*, with a higher score indicating better quality. This was divided into five areas of bias: selection, performance, detection, attrition, and statistical.

An additional *missing score* was calculated to determine the amount of information missing. A higher score meant greater information was missing. Where the study was reporting on a larger study, information was considered missing if it was not reported in the publication or was not available through the referenced study.



*Figure 3.* Results of a systematic search conducted to identify studies examining the reliability and validity of mechanical processes to assess the risk of reoffending by people with an intellectual disability.

## Results

### Description of Studies

The full search yielded 2,011 publications. Three hundred and seventy-nine duplicates were removed. Eight were removed, as they could not be translated into English and were not anticipated to meet inclusion criteria. A further 358 publications were removed as they were irrelevant and 1,234 were removed as they did not meet at least one of the inclusion / exclusion criteria (see Figure 3 for details). Two were removed owing to duplicate publication of data. The remaining 30 studies were included in the review.

### Characteristics of Included Studies

Demographic characteristics of these studies are provided in Table 2. From a total of 2,573 participants, the average number of participants per study was 88.72 ( $SD = 85.62$ ), ranging between 5 and 422. All studies were treated as independent, although over-lap of participants was questioned in nine studies (Boer et al., 2010a; Gray et al., 2007; Gray et al., 2004; Gray, Taylor, & Snowden, 2011; Lindsay, Elliot, & Astell, 2004a; Lindsay et al., 2008; Morrissey et al., 2007a; Morrissey et al., 2005; Morrissey, Mooney, Hogue, Lindsay, & Taylor, 2007b).

Twenty-three studies were carried out in the UK, three in the USA, two in Canada, one in Sweden and one in Australia. Different criminal codes, sentencing options and plea-bargaining strategies may have resulted in differences in reported reoffending between jurisdictions. This may have resulted in under-reporting, as many jurisdictions have diversionary options away from the criminal justice system for those with a CI. Ten studies (32.26%) took place in a medium to high secure forensic disability or mental health setting. Fifteen studies (48.39%) took place in the community, and four (12.90%) took place across a range of community and secure settings.

With the exception of those in treatment settings (9.68%), no detail on interventions delivered before or during the follow up period was provided.

A majority of studies involved participants placed into services under mental health or similar legislation due to history of offending behaviour (56.67%). Generally, these studies did not provide details on the proportion that were detained due to conviction as opposed to a finding of being unfit to stand trial, not guilty by mental illness, or risk of offending. Only two studies involved participants who were not classed as offenders and five studies made it clear that participants had been convicted. An additional two studies involved participants from psychiatric settings.

Average age for the participants where reported was 33.01 years ( $n = 24$ ;  $SD = 7.56$ ). On average, studies incorporated 90.48% ( $SD = 16.37$ ) male participants and 60% ( $n = 18$ ) used male participants only. In studies that included females, males accounted for 73.33% ( $SD = 17.21$ ) of participants. The majority of studies did not refer to ethnicity (70%). Studies that reported ethnicity comprised 78.28% ( $SD = 10.59$ ) Caucasians.

The average IQ was 65.60 ( $SD = 2.92$ ) of the 12 studies that reported such data. This placed subjects in the upper mild range of ID, on average and was consistent with the six studies where ranges were reported, which identified the modal range as a mild ID. Eight studies (26.67%) reported all subjects had an IQ below 70 and eight studies specifically identified some participants as being in the borderline range of ID. Eleven studies (36.67%) reported how CI was diagnosed and with which instruments. No studies reported on other diagnostic criteria of Intellectual Disability (i.e., that IQ was below 70 before 18 years or that there were identified adaptive functioning deficits). Terminology also varied across studies, 19 studies referred to 'Intellectual Disability', four studies referred to 'Developmental Disability', three studies

referred to 'Learning Disability', two studies referred exclusively to the term 'Mental Retardation', and one referred to 'Special Needs'. One study was not specific to those with a CI. Gray et al. (2004) examined the predictive validity of a number of tools for those with a mental disorder, incorporating those with a CI. It is likely that this same sample was incorporated into the studies by Gray et al. (2007) and Gray et al. (2011). This, however, cannot be confirmed owing to insufficient information reported.

Studies generally did not provide details on the offending history of participants. Seven studies (23.33%) specifically examined those with a history of sexual offending and two studies specifically examined those with a history of violent offending (6.67%). These studies, however, did not provide details as to the nature of any other offending history. Studies relating to sex offenders, however, were more likely to go into detail on the nature of the offences and victims. Only one study focused on those with a history of arson and no studies exclusively focused on other offence types (e.g., theft).

Green, Gray, and Willner (2002) compared people with a CI with a history of problematic sexual behaviour and compared those who were and were not convicted of a sexual offence to identity predictor variables.

Studies varied greatly in their dependent outcome variable. Studies examined violent, sexual or general conviction, behavioural incident, level of security, and suspected offence. Subsequently, the recidivism rates of participants varied significantly between studies. Even when examining convictions, general recidivism ranged between 10-92% for studies that had a follow up of at least a year ( $n = 9$ ;  $M = 34.66$ ;  $SD = 31.16$ ). Average follow up was 28.19 months ( $n = 19$ ;  $SD = 28.57$ ) excluding those assessing the DRAMS, (which examined short-term risk)

and studies that reported only minimum follow up and not average follow up periods (Gray et al., 2007; Lindsay et al., 2004a).

Fifty percent of studies reported on the prevalence of some co-morbid disorders amongst participants. Only three studies described the history of substance use amongst participants. Prevalence of mental disorder varied greatly when reported, ranging 33-96%. Most commonly, psychotic, personality and mood disorders were described. The prevalence of psychotic disorders varied between 10-44% whilst the prevalence of Personality Disorder was 9-59%. Only three studies (10%) described prevalence of other developmental disorders, despite studies being focused on ID.

Table 2

*Demographic features of studies meeting inclusion criteria*

Publication	Origin	N	Age (mean)	IQ (mean)	Offender Type	Ethnicity (% Caucasian)	Setting	Co-Morbidity
Adamson (2010)	UK	30	16.07	60.38	Juveniles	U	Medium Secure ID Inpatient Unit	U
Blacker (2009)	UK	88	35	69 <sup>^</sup>	Sex Offenders	U	Sex offender treatment Program	U
Camilleri and Quinsey (2011)	USA	51	18-40	Under 9 <sup>th</sup> %	Violent Psychiatric	U	Acute civil inpatient	U
Gatti, Tremblay, and Vitaro (2009)	UK	5	34-68	U	Non-offender	U	Intensive challenging behaviour unit	U
Fitzgerald, Gray, Taylor, and Snowden (2011)	UK	85	31.54	mild (mode)	General Offender or at risk	84.8	Community discharged from medium secure unit	66% comorbid; 23% mental illness 24% PD 7% other
Gray et al. (2004)	UK	33	30.8*	U	General offender or at risk	84.4	Community discharged from medium secure unit	U
Gray et al. (2007)	UK	145	31.54	83% mild 12% mod 3% severe <1% unspec	General offender or at risk	U	Community discharged from medium secure psych unit	66%
Gray et al. (2011)	UK	115	37.7 *	U	General offender or at risk	69.2	Community discharged from medium secure unit	U

Table 2 (cont)

*Demographic features of studies meeting inclusion criteria*

Publication	Origin	N	Age (mean)	IQ (mean)	Offender Type	Ethnicity (% Caucasian)	Setting	Co-Morbidity
Green et al. (2002)	UK	46	35.7	U	Sex convicted & not	U	Community disability support team	U
Griffin and Vettor (2012)	UK	46	15.3	52% mild 22% mod 4% severe 22% unspec.	Sex convicted & not	76	Community Private treatment	U
Kells (2011)	UK	47	31.5	70.55	General offender or at risk	U	Medium secure ID forensic Unit	U
Kelly, Goodwill, Keene, and Thrift (2009)	UK	20	U	U	Arson conviction	U	Medium secure ID forensic service	U
Langstrom, Grann, Ruchkin, Sjostedt, and Fazel (2009)	Sw	422	18	U	Autistic violent convictions	72.7 (native)	Community discharged from regular hospital	44 psychosis 15 depression 7 substance use 9 PD
Lindsay et al. (2004a)	UK	52	35.6	64.3	Sex convicted	U	Community discharged from treatment program	U
Lindsay et al. (2004b)	UK	5	39.4	63.8	General offences	U	Secure inpatient unit	U
Lindsay et al. (2008)	UK	212	37.37	66.01	General offender or at risk	U	Low to high security forensic ID units	Mental illness 25.94%
Lindsay et al. (2010a)	UK	197	33*	U	General offender or at risk	U	Range of forensic ID services (high to low and community)	21 = MI 7 = bipolar 10 = depress 11 = PD 9 = autism 22 = ADHD
Marks (2011)	UK	28	41.1	65.64	offender or at risk	89	Community discharged from medium secure forensic ID unit	18 = MI 11 = PD 28 = other 43 = none
McGrath, Livingston, and Falk (2007)	USA	87	34.4	61.9	Sex convicted & not	U	Community ID service (2/3 24hr care)	U
McMillan, Hastings, and Coldwell (2004)	UK	124	33.1	90% mild 9% mod	General offender or at risk	92.1	Forensic ID hospital	U
Morrissey et al. (2005)	UK	203	37	66	General offender or at risk	U	Range of forensic ID services (high to medium and community)	U
Morrissey et al. (2007a)	UK	60	38	66.2	General offender or at risk	80	Forensic ID high security hospital	55 = PD 29 = MI 8 = mood



Table 2 (cont)

*Demographic features of studies meeting inclusion criteria*

Publication	Origin	N	Age (mean)	IQ (mean)	Offender Type	Ethnicity (% Caucasian)	Setting	Co-Morbidity
Morrissey et al. (2007b)	UK	73	37	66	General offender or at risk	U	Forensic ID high security hospital	55 = PD 29 = MI 8 = mood
Novaco and Taylor (2004a)	UK	129	33.2	67.5	General offender or at risk	U	Medium to low security forensic ID hospital	11 = MI 16 = mood 19 = PD 4 = chromos 2 = Asperger's 2 = tourettes
Quinsey, Book, and Skilling (2004)	Can	58	40.61	U	General offender or at risk	U	Community discharged from secure forensic ID hospital	59 = PD 36 = paraphilia 11 = MI 9 = mood 2% = substance
Reese (2009)	USA	104	18-82	U	Non-offender	69	Community ID challenging behaviour group homes	96% comorbid
Stephoe, Lindsay, Murphy, and Young (2008)	UK	23	38.4	64.6	General offender or at risk	U	ID forensic high security	35 = autism 30 = MI
Tough (2001)	Can	76	43.8	67% mild 15% mod	Sex offending behaviour	U	Community behaviour management service	33% comorbid
Verbrugge et al. (2011)	Aus	59	24.68	68% mild	Violent conviction	60	Community forensic ID service	22 = MI 59 = substance
Wilcox, Beech, Markall, and Blacker (2009)	UK	27	U	U	Sex offender	U	Community treatment in probation service	U

*Note.* U = Unreported; PD = Personality Disorder; MI = Psychotic disorder; Aus = Australia; Sw = Sweden; Can = Canada; UK = United Kingdom.

\* Based on sample where those with an intellectual disability were only a sub-group.

^ Calculated for only a portion of the participants with an intellectual disability

### **Risk Assessment Characteristics**

Thirty-one risk assessment tools were examined across the 30 studies. A summary of the findings regarding these measures is provided in Table 3.

Four studies utilised a list of unique factors (e.g., number of previous offences, McMillan et al., 2004) rather than examine an established measure. These lists were categorised as actuarial approaches given the additive manner in which items were combined and compared to

the dependent variable. Offence related measures not specifically designed for risk assessment were also examined. These measures included self-report and informant based measures of anger, impulsivity, psychopathy, emotional problems and quality of life. Of the 20 risk assessment tools, 11 were structured professional judgment and 9 were actuarial.

The HCR-20 (Webster et al., 1997) including the supplement adapted for those with an ID (Boer et al., 2010b) was the most evaluated tool, examined in eight studies. The Violence Risk Appraisal Guide (VRAG; Quinsey et al., 2006) and versions of the PCL-R (including the short version) (Hare, 1991) were examined in six studies and the STATIC-99 (Harris et al., 2003) in four studies.

Twenty-nine studies included a follow-up period. Twelve follow-up studies utilised a prospective methodology, 16 utilised a retrospective methodology and one did not report method of follow-up. No study that used a prospective methodology indicated whether treating teams had access to the risk assessments.

Table 3

*Risk Assessment Outcomes of Studies Meeting Inclusion Criteria*

Publication	Measure	Measure Type	Study Type	Follow up (mths)	Outcome Measure	Recid. Rate (%)	Inter-rater	AUC (SE) General	AUC (SE) Violence/Sex	Other Statistic
Adamson (2010)	SAVRY	SPJ	Pro	3	Behaviour	0.5	0.82	0.86		-
Blacker (2009)	RRASOR RM2000 SVR ARMIDILO (stable) (acute)	Act Act SPJ SPJ	Retro	105.6	Behaviour	0.25	-		0.47 0.63 0.75 0.86 0.75	-
Camilleri and Quinsey (2011)	VRAG	Act	Pro	5	Violent behaviour	-	-	0.70		-
Fitzgerald et al. (2011)	OGRS	Act	Pro	24	Convictions	15.3	0.96	0.9	0.85 (v)	-

Table 3 (cont)

*Risk Assessment Outcomes of Studies Meeting Inclusion Criteria*

Publication	Measure	Measure Type	Study Type	Follow up (mths)	Outcome Measure	Recid. Rate (%)	Inter-rater	AUC (SE) General	AUC (SE) Violence/Sex	Other Statistic
Gatti et al. (2009)	AIR	SPJ	Pro	8	Violent behaviour	-	-	-	-	-
Gray et al. (2004)	PCL:SV HCR OGRS	Person SPJ Act	Pro	24 (min)	Convictions	36.5	0.98 0.80 1.00	0.71 0.61 0.85	-	-
Gray et al. (2007)	PCL:SV HCR VRAG	Person SPJ Act	Retro	24 (min)	General or violent conviction	9.7	0.89-0.95 0.80-0.88 0.95	0.76 (.07) 0.81 (.05) 0.74 (.07)	0.73 (.09) v 0.79 (.08) v 0.73 (.09) v	-
Gray et al. (2011)	HCR	SPJ	Retro	24 (min)	General or violent conviction	14 (g) 7 (v)	0.80	0.80 (.06)	0.80 (.07) v	-
Green et al. (2002)	SACJ	Act	Retro	-	Sexually inappropriate behaviour	-	-	-	-	MW U=206; p=0.39
Griffin and Vettor (2012)	AIM AIM2	SPJ SPJ	Retro	6	Sexually inappropriate behaviour	20	-	-	0.78 (.08) s 0.79 (.01) s	-
Kells (2011)	I7 I7R HCR PCL-R	Impulse Impulse SPJ Person	Pro	3	Physically aggressive behaviour	78.7 (ve) 44.7 (ph) 25.5 (sig)	0.90	0.63ve 0.57 0.70 0.70	0.53ph 0.54h 0.48ph 0.45h 0.83ph 0.69h 0.83ph 0.69	-
Kelly et al. (2009)	Jackson's pathological arsonist criteria	Arson criteria	Retro	-	Convictions	-	-	-	-	$\chi^2(1)=7.2^{**}$ (inability effect social change) $\chi^2(1)=5.05^*$ (child experience fire)
Langstrom et al. (2009)	File data	Act	Retro	-	Convictions	7.35 (first offence)	-	-	-	OR 37.4 (substance use) OR 6.88 (personality disorder) OR 4.31 (psychiatric comorbidity)
Lindsay et al. (2004a)	File data	Act	Retro	12 (min)	Convictions	34	-	-	-	Recidivism: $R^2=0.528$ , $f(9,37)=4.593^{***}$ Suspicion: $R^2=0.742$ , $f(13,25)=5.522^{***}$
Lindsay et al. (2004ba)	DRAMS	Act	Retro	3	Behaviour	-	0.45	-	-	$F(1,4)=64.222^{**}$
Lindsay et al. (2008)	VRAG HCR RM2000-V RM2000-S STATIC-99 SDRS EPS(e) EPS(i)	Act SPJ Act Act Act Act Act	Retro	12	Behaviour	-	0.92 .83-.92 0.91 0.92 0.97 0.89 - -	0.71 v 0.72 v 0.62 v 0.61 s 0.71 s 0.72 v 0.75 v 0.73 v	-	-

Table 3 (cont)

*Risk Assessment Outcomes of Studies Meeting Inclusion Criteria*

Publication	Measure	Measure Type	Study Type	Follow up (mths)	Outcome Measure	Recid. Rate (%)	Inter-rater	AUC (SE) General	AUC (SE) Violence/Sex	Other Statistic
Lindsay et al. (2010a)	VRAG Static 99	Act	Pro	-	Security setting	-	92.2 97.2	-	-	F(6,174)=2.97** F(6,76)=3.13**
Marks (2011)	QoLQ	QoL	Retro	51.24	Convictions	43	0.41-1	-	-	MW U=94.00, p=0.95, r=-0.02
McGrath et al. (2007)	TIPS-ID	SPJ	Retro	6	RRASOR Supervision level Paraphilia diagnosis Treatment progress	-	0.81 - - -	- - - -	- - - -	F(2,84)=1.40, p=.25 t(85)=2.81** t(85)=2.95** t(2,69)=9.98**
McMillan et al. (2004)	Frequency of behaviour	Act	Retro	12	Violent behaviour	46.8	-	-	.74 (clinical) .77 (act)	-
Morrissey et al. (2005)	PCL-R	Person	Correl	6	AS PD Diagnosis Violent/ externalising behaviour Externalising Behaviour Problem Scale VRAG HCR-20 Internalising Problem Behaviour Scale	31	0.81 - - -	- - - -	- - - -	$\chi^2(1,151)=20.93***$ r=.18* (n=203) r=-.45*** (n=164) r=.49*** (n=202) r=.54*** (n=182) r=.18* (n=164)
Morrissey et al. (2007a)	PCL-R HCR EPS	SPJ	Pro	12	Violent behaviour	76.7	0.80 - -	- - -	0.54 v 0.68 v 0.77 v	-
Morrissey et al. (2007b)	PCL-R HCR	SPJ	Pro	24	(+/-) service progress	11 (negative progress)	-	0.80 (-) 0.49 (-)	0.73 (+) 0.69 (+)	-
Novaco and Taylor (2004a)	WARS NAS PI STAXI	Obsv. Self Self Self	Retro	44.4	Assaultive behaviour	-	-	0.28 0.20 - -	- - - -	r=.28 (n=127) r=.4 (n=110) r=.20 (n=114) (n=112) state anger r=.03 trait anger r=.34 in r=.12 out r=.33 control r=-.33 expression r=.37
Quinsey et al. (2004)	VRAG PIC PRFS	Act Act Act	Pro	16	Behaviour	67% (47% hands on)	0.89 0.87 0.88	-	0.69 v or s	-
Reese (2009)	Supports Intensity Scale	SPJ	Pro	2-3	Behaviour	-	-	-	-	R <sup>2</sup> =.09, F(5,99)=2.52*

Table 3 (cont)

*Risk Assessment Outcomes of Studies Meeting Inclusion Criteria*

Publication	Measure	Measure Type	Study Type	Follow up (mths)	Outcome Measure	Recid. Rate (%)	Inter-rater	AUC (SE) General	AUC (SE) Violence/Sex	Other Statistic
Step toe et al. (2008)	DRAMS	SPJ	Pro	2 days	Behaviour	-	0.46	0.73	-	-
Tough (2001)	RRASOR STATIC-99	Act Act	Pro	60	Behaviour	16% 5% (convicted)	u	- -	- -	t (2, 73)=0.691 t(2, 73)=2.752**
Verbrugge et al. (2011)	HCR HCR:ID VRAG	SPJ SPJ Act	Retro	44	Convictions	92	0.80 0.80 0.79	0.94 0.97 0.92	0.80 v 0.80 v 0.79 v	-
Wilcox et al. (2009)	Static RM-2000 RRASOR	Act Act Act	Retro	76	Convictions	30	- - -	- - -	0.64 s 0.58 s 0.42 s	-

*Note.* SPJ = structured professional judgment; Act = actuarial; Retro = retrospective; Pro = prospective; Obsv = staff observed; Self = self-report measure; Correl = correlational; v = violent; s = sexual; min = minimum; ve = verbal aggression; ph = physical aggression; h = high risk aggression; OR = unadjusted odds ratio; QoL = quality of life; ASPD = Antisocial Personality Disorder;  
\* p<.05; \*\* p<.01; \*\*\* p<.001

### Risk Assessment Outcomes

Sixteen studies examined the inter-rater reliability of measures. Only two measures, the DRAMS (Lindsay et al., 2004b) and the Quality of Life Questionnaire (QoLQ; Schalock & Keith, 1993) showed poor inter-rater reliability. All other measures had an inter-class correlation co-efficient above 0.70, with an average inter-class correlation coefficient of 0.88.

Eighteen studies (60%) utilised Receiver Operating Characteristic curves to examine the predictive validity of measures, using either conviction or behavioural incident as the dependent variable. The range and mean AUC statistic for each tool evaluated is provided in Table 4.

A number of studies also examined concurrent validity of measures by comparing scores or risk categories on the risk assessment tools to either offence history, scores on other measures, treatment progress, or levels of security.

All risk assessment tools that assessed risk of general recidivism had AUCs over 0.7. This was also the case for those that assessed violent recidivism, with the exception of the Risk Matrix-2000 (violence) (RM-2000; Blacker, 2009; Lindsay et al., 2008). There was more variability for those that assessed risk of sexual recidivism, with the RRASOR and RM-2000 (sexual) being particularly low (Wilcox et al., 2009). Meanwhile, the ARMIDILO-S performed particularly well (Blacker, 2009). It should also be noted that measures that were not designed to assess risk generally did poorer than those designed specifically for this purpose. This included measures of: self and staff reported anger such as the Novaco Anger Scale (NAS) and the Ward Anger Rating Scale (WARS; Novaco & Taylor, 2004a); impulsivity (Kells, 2011); and quality of life (Marks, 2011). Risk assessments tools also reliably predicted level of security (Lindsay et al., 2010b), treatment progress (McGrath et al., 2007), service progress (Morrissey et al., 2007b) and institutional aggression (Morrissey et al., 2007a) with medium to strong effect size.

### **Quality Assessment**

Inter-rater reliability of the quality assessment using the PRISMA criteria was computed for 20% ( $n = 6$ ) of the studies. An independent rater (RM) re-scored the studies blind to the author's scores. An intraclass coefficient correlation (ICC) was calculated using a two-way mixed effects model. The single measure ICC was .95 (95%  $CI = .91-.98$ ,  $n = 29$ ), reflecting good inter-rater reliability.

A summary of the quality assessment for each study using the PRISMA criteria is provided in Table 5. The primary selection bias was a lack of detail provided around demographic and prognostic factors distributed amongst groups. In particular, there was limited detail about the extent to which participants met criteria for a diagnosis of ID. There was also a lack of detail about how participants were recruited from study sites (since these were primarily

convenient samples obtained from services). Importantly, many studies, whilst referring to offenders, failed to define what this meant. Few studies extrapolated the legal status of participants. Instead, frequently defining them as “offenders” or “non-offenders” or as those “at risk of offending”.

Table 4

*Predictive validity and inter-rater reliability for risk assessment tools for intellectually disabled offenders*

Measure	ICC		AUC					
	mean (n)	range	General		Violence		Sexual	
			mean (n)	range	mean (n)	range	mean (n)	range
HCR-20	.84	.80-.95	.78 (6)	.61-.94	.76 (7)	.69-.83	-	-
HCR-20 (ID)	.8	-	.97	-	.80	-	-	-
VRAG	.86 (4)	.79-.92	.79 (3)	.70-.92	.73 (3)	.69-.79	.69	-
PCL:SV	.95	.92-.98	.74 (2)	.71-.76	.73	-	-	-
PCL-R	.81	.80-.81	.70	-	.69 (2)	.54-.83	-	-
SAVRY	.82	-	.86	-	-	-	-	-
DRAMS	.46 (2)	.45-.46	.73	-	-	-	-	-
WARS	-	-	.28	-	-	--	-	-
NAS	-	-	.20	-	-	-	-	-
OGRS	.96	-	.90	-	.85	-	-	-
RM2000v	.91	-	-	-	.62	-	-	-
EPS	-	-	-	-	.77	-	-	-
EPS (e)	-	-	-	-	.75	-	-	-
EPS (i)	-	-	-	-	.73	-	-	-
I7	-	-	-	-	.53	-	-	-
I7R	-	-	-	-	.48	-	-	-
SDRS	.89	-	-	-	.72	-	-	-
Static 99	.97 (2)	-	-	-	-	-	.68 (2)	.64-.71
RM2000s	.92	-	-	-	-	-	.61 (2)	.58-.63
RRASOR	-	-	-	-	-	-	.45 (2)	.42-.47
ARMIDILO (acute)	-	-	-	-	-	-	.86	-
ARMIDILO (stable)	-	-	-	-	-	-	.75	-
SVR	-	-	-	-	-	-	.75	-
AIM	-	-	-	-	-	-	.78	-
AIM2	-	-	-	-	-	-	.79	-
QoLQ	-	.41-1	-	-	-	-	-	-
TIPS-ID	.81	-	-	-	-	-	-	-
PIC	.87	-	-	-	-	-	-	-
PRFS	.88	-	-	-	-	-	-	-

Note. n = number of studies

With respect to performance bias, 90% ( $n = 27$ ) of studies failed to provide detail around the nature and scope of treatment provided to participants and whether there was a difference in the level of care between participants. The remaining three studies recruited samples from treatment groups, albeit minimal information was provided on the nature of the treatment provided.

It was common for retrospective studies to not report on whether those completing risk assessments had access to recidivism data at time of assessment (62.5%). This was particularly the case where the dependent variable was reported as being behavioural incidents (83.3%) as opposed to convictions (37.5%). Furthermore, 31.3% of studies that examined behavioural incidents failed to define the term. There was also no reference in prospective studies as to whether treating teams had access to risk assessment outcomes in the follow up period.

With respect to attrition bias, length of time to follow up and the detail of the follow up were generally good, with 90.1% of studies examining convictions and 75% of studies examining behavioural incidents reporting adequate follow up periods. In just under half of the studies (46.7%), however, reoffending of participants were not followed up for an equal amount of time. Frequently, there was little detail about the specific outcomes and whether participants were convicted, charged or warned for behaviour.

AUC statistics were used in 60% of studies. Whilst this may appear low, many studies did not allow for follow up and instead used comparison groups. Some studies did not strictly examine the occurrence of re-offending and instead examined concurrent validity by looking at other factors proximal to offending. Only five studies failed to use Receiver Operating Characteristic curves when appropriate (16.7%). Unfortunately, only five studies reported a power analysis. Also, no studies specifically reported sensitivity or specificity of measures and



only two studies reported diagnostic odds ratios, the only other risk estimate that is not base rate dependent.

Table 5

*Assessment of research quality of reviewed studies*

<b>Publication</b>	<b>Selection Bias</b>	<b>Performance Bias</b>	<b>Detection Bias</b>	<b>Attrition Bias</b>	<b>Statistical Analysis</b>	<b>Total Score</b>	<b>Missing</b>
<i>Maximum Score</i>	<i>16</i>	<i>4</i>	<i>14</i>	<i>12</i>	<i>2</i>	<i>48</i>	<i>-</i>
Adamson (2010)	8	4	14	6	2	34	7
Blacker (2009)	15	4	10	10	2	41	3
Camilleri and Quinsey (2011)	12	4	12	6	2	36	6
Fitzgerald et al. (2011)	14	4	14	12	2	46	0
Gatti et al. (2009)	10	4	11	12	0	37	6
Gray et al. (2004)	10	4	14	8	2	38	4
Gray et al. (2007)	12	4	14	8	2	40	1
Gray et al. (2011)	7	4	14	9	2	36	5
Green et al. (2002)	8	3	10	8	1	30	4
Griffin and Vettor (2012)	15	4	9	10	2	40	2
Kells (2011)	11	4	14	11	2	42	2
Kelly et al. (2009)	8	4	10	10	2	34	5
Langstrom et al. (2009)	16	4	14	12	2	48	0
Lindsay et al. (2004a)	14	3	13	5	2	37	2
Lindsay et al. (2004ba)	16	2	12	6	2	42	2
Lindsay et al. (2008)	16	2	11	10	2	40	1
Lindsay et al. (2010a)	13	2	12	9	2	35	2
Marks (2011)	15	4	8	7	1	35	3
McGrath et al. (2007)	14	4	9	10	2	39	1
McMillan et al. (2004)	15	4	13	11	2	45	0
Morrissey et al. (2005)	16	2	13	10	1	42	0
Morrissey et al. (2007a)	16	4	14	10	2	46	1
Morrissey et al. (2007b)	16	4	14	10	2	46	1
Novaco and Taylor (2004b)	16	4	10	7	1	38	2
Quinsey et al. (2004)	16	4	12	8	2	42	1
Reese (2009)	12	4	14	4	1	35	3
Step toe et al. (2008)	12	4	11	7	2	36	4
Tough (2001)	16	4	10	8	0	38	2
Verbrugge et al. (2011)	16	4	14	8	2	44	1
Wilcox et al. (2009)	11	4	10	8	2	35	5

## Discussion

This systematic review found that whilst only occurring in the last decade, there has been a strong growth of studies examining the validity and reliability of offender risk assessment tools and processes for those with a CI. In aggregate, these studies provide preliminary support for the validity and reliability of offender risk assessment tools for those with a CI. According to Rice and Harris's (2005) definition of an AUC with a large effect size, all studies that used either a general or violence risk assessment tool to predict general recidivism had a large effect size. Only one measure that examined physical violence (the violence scale of the RM2000) had an AUC below this threshold, albeit still with a medium effect size. These findings were also consistent with those found by Singh et al. (2011) for the general offender population, where median AUCs for risk assessment measures ranged .67-.74 for violence and general risk assessment measures.

Measures that examined risk of sexual violence provided poorer predictive validity, with four measures (VRAG, RRASOR, RM2000s and the STATIC-99) having less than a strong effect size. However, all measures other than the RRASOR had an AUC above .61. Once again, this was consistent with findings for the general offender population, with a systematic review examining sexual violence risk assessment measures by Tully, Chou, and Browne (2013) finding AUCs ranging between .63 to .75 and Fazel, Singh, Doll, and Grann (2012) finding physical violence risk assessment tools outperforming those for sexual violence.

For sexual violence risk assessment tools, SPJ measures produced stronger effect sizes, whilst actuarial tools produced a medium or lower effect size, contrasting with findings for the general offender population (Tully et al., 2013). This may be owing to the ability of such measures to take into consideration specific disability issues. For example, those with a

disability may be diverted from the criminal justice system rather than convicted, with most actuarial measures having at least one item related to previous convictions, those with a disability may score lower on this item relative to those without a disability, despite expressing the same behavioural history. SPJ tools, however, can be more flexible on this point, allowing for consideration of a broader range of behaviour. Boer, Frize, Pappas, Morrissey, and Lindsay (2010) described this in the supplement for the SVR-20 for those with a CI. Unfortunately, with such a small number of studies, this could not be tested. Therefore the difference between SPJ and actuarial approaches may relate to other demographic or offence related features of participants or common methodological bias. The strength of SPJ approaches, however, did not extend to those examining general offending or physical violence, with actuarial and SPJ tools performing as well as each other. This suggests that as yet, there is no particular process of mechanical risk assessment that performs better for those with a CI.

Measures that were designed for purposes other than risk assessment tended to do poorer than those designed for that purpose. This included measures of impulsivity (Eysenck Impulsivity Questionnaire; Eysenck, 1993), quality of life (Quality of Life Questionnaire; Evans & Cope, 1989) and self-report measures of anger such as the Ward Anger Rating Scale (Novaco & Monahan, 1994) and Novaco Anger Scale (Mills, Kroner, & Forth, 1998). Whilst it might be disappointing that such measures may not be supported for use as offender risk assessments, it does provide discriminant validity for the use of offender risk assessment measures to assess risk of reoffending. Personality assessments exploring the presence of psychopathy, (the Psychopathy Checklist Revised and Short Version), were the exception to non-risk assessment tools, in that they performed well and in a manner similar to that found in the general population (Brown, Brown, & Dibiasio, 2013).

A common feature of studies reviewed, but uncommon in the general literature, was the frequency at which behaviour as opposed to conviction was the outcome variable. Results suggest that whilst most measures were able to predict both convictions and behaviour with sufficient accuracy, they tended to do somewhat better at predicting conviction. This is unsurprising, particularly of actuarial measures given their development for that purpose. There was exception for the sex offender assessments, where those exploring behaviour performed better. This may have been mediated by the use SPJ tools, which did better at predicting sexual recidivism.

A key finding from the systematic review by Singh et al. (2011) was that measures specific to populations or offence type performed better. The results herein are consistent with this finding; tools that were either adapted or were developed specifically for those with an ID (the HCR-20 with the ID supplement and the ARMIDILO) providing the highest AUC for both sexual and physical violence.

Despite this review providing optimism for the use of offender risk assessments for those with an ID, the range of methodological issues presented by included studies should temper this optimism. Beyond issues common in the general research on the validity of offender risk assessments, those related to people with a CI posed a number of additional issues that severely hampers the generalisability and confidence of results. In particular was the extent of the selection bias. Not recorded in the quality assessment, but critical in considering the implications of results, was the relatively small number of studies and participants used per study. Compared to the systematic review by Singh et al. (2011) which incorporated 25,980 participants, averaging 382 per study, the current review incorporated 2,573 participants, averaging 89 per study. It is unknown what proportion of the total population of offenders with a

CI this represented as it was not stated and studies generally did not provide details as to how representative participants were to the population.

Additional selection bias was caused by the unclear definition of CI used. Very few studies exclusively included those with a diagnosed ID. A majority of studies included those with a borderline ID and no studies described the adaptive functioning deficits of participants. This means that the majority of research to date has been on those with a mild to borderline cognitive impairment, rather than on those with a diagnosis of intellectual disability. With 76.67% of studies conducted in the UK and many having the same lead authors, it is also likely that many of the same participants were used across studies. Even if unique participants were used, the limited geographic range of studies and infrequent reporting of ethnicity (30%) raises question as to the generalisability of results given the importance of ethnicity in some jurisdictions (e.g., Australia; Snowball & Weatherburn, 2006). The generalisation of results was also hampered by the likely heterogeneous nature of groups, given the range in recidivism rates and difference in mental health diagnosis between studies. Range in recidivism rates is likely owing to differing definitions of recidivism used and heterogeneity of offences, offender characteristics, and settings of studies (e.g., in treatment, secure and community settings). Reason for variance, however, is difficult to determine given a lack of detail around the criminal history and nature of recidivism of participants. This is a significant omission given the evidence that risk assessment tools are influenced by the heterogeneity of offences and offenders (Singh et al., 2011). A lack of description of the service and treatment settings provided to participants was a particular issue for these studies given the influence of support services on those with a CI and the influence of treatment on rates of recidivism. This is evidenced by the latest version of the STATIC-99 including separate sets of norms for those who have received treatment, given the

moderating effect it has on recidivism (Hart & Cooke, 2013). Despite a range of issues in sampling, there were some common features with participants used in the general offender risk assessment literature, including average age and gender representation (Indig, McEntyre, Page, & Ross, 2010).

Issues consistent with studies examining the general offender population include a lack of detail about whether the researchers and clinicians were blind to outcomes. Researchers being able to view recidivism data in retrospective studies can obviously bias risk assessment scores. Equally, clinicians' awareness of risk assessment scores can potentially lower subsequent offending behaviour of higher risk offenders by using the tools to manage offending. Alternatively, clinicians may increase the risk of lower risk offenders by treatment providers paying less attention to them due to perceived low risk.

The same issues surrounding statistical processes in studies examining general offenders were also evident in the reviewed studies. Not only did a number of studies not use Receiver Operating Characteristic curves where appropriate, but almost all studies did not provide additional statistics (such as odds ratios) making comparison between studies difficult (Singh et al., 2011).

The methodological issues identified highlight the need for future research to be more careful in defining terms, diagnoses and characteristics of participants to ensure accurate reporting. Follow-up methodology requires greater explanation and control over factors that are likely to inadvertently influence recidivism (such as differential treatment between groups). Since withholding treatment would be unethical, this research calls for the inclusion of convenient samples who are either awaiting treatment or have been unable to receive it, given most offenders with a CI are generally not in receipt of intervention once released from custody.

A way these issues can be addressed is through cooperative research across jurisdictions to ensure adequate participants for sufficient power for analyses, whilst maintaining rigorous criteria in defining terms.

A potential weakness of this study is that it examined studies reporting to use samples that included those with an ID, rather than those that strictly assessed for the diagnosis. Doing so, however, would have dramatically reduced the number of studies reported upon. This highlights the need for future studies to have strict criteria around diagnosis. An additional weakness of the study was that no effort was made to contact authors to obtain additional details of studies (e.g., in order to determine diagnostic odds ratios). This would have provided greater detail around the studies and have improved the quality of the comparison of the risk assessment tools.

Both a strength and weakness of the study was the decision to include studies that looked at non-convicted participants. This was done in order to assess the validity of measures that assess risk of behaviour that is consistent with offending. Inclusion of tools such as the AIR was done given the close relationship between challenging and offending behaviour (Doyle, 2004). Furthermore, studies were included that did not address predictive validity, but examined concurrent and discriminant validity. Whilst this somewhat complicated the review, it provided a detailed analysis of the research to date examining the validity of processes and tools that have been used for purpose of risk assessment for those with a CI.

In conclusion, there has been a growth of research over the past decade on the validity and reliability of offender risk assessment tools for those with a CI. Initial findings are promising for actuarial and SPJ offender risk assessment tools. Findings should be considered with caution, however, owing to the small number of studies completed, and range of

methodological flaws within them. Additionally, the preliminary support for their use is primarily in male offenders with upper mild to borderline ID in receipt of services who are male. The small number of females included in studies suggests insufficient information to determine whether risk assessment tools are valid for this sub-population. Despite the cautious optimism expressed herein, the dramatic influence offender risk assessment tools have in determining the limitation of human rights (including preventative detention) raises question as to their current role in public policy. The lack of an evidence base for alternatives to risk assessment instruments provides strong argument that tools, which have shown adequate predictive validity across multiple studies and jurisdictions, should be incorporated into considering risk. The variability in predictive validity findings and the ethical issues raised by Johnston (2002) suggests, however, their application should be monitored and reviewed on an ongoing basis. Use of risk assessment tools as part of a multi-modal assessment may mitigate some of the identified risks.

The challenge now is to validate these measures outside the UK with large numbers of offenders with an ID who are not receiving services. The findings for tools designed or adapted for those with a CI is promising and requires further attention. A lack of work on measures that look at offence types other than violent and sexual offending means new measures are required to fill the gaps in assessing risk of arson and theft. It will also be important to specify demographic and offence characteristics of these samples so that a greater understanding of risk factors can be obtained. Finally, the issues and challenges identified herein should be considered in addition to those that have recently been described for the general offender risk assessment literature. Predictive validity is only one consideration in the use of risk assessment tools. How they are used and how results are interpreted and utilised are arguably more important questions for public policy yet to be addressed. People with a CI are a vulnerable population in the criminal



justice system and it is imperative that further research is conducted to better understand not just who will offend, but how that risk can be mediated.

## Chapter 4:

### The Ecological Validity of the ARMIDILO-G for People with an ID who Offend

#### The ARMIDILO-G

Chapter 3 provided preliminary support for applying offender risk assessment tools to those with an ID. In particular, support was provided for the application of tools developed or modified specifically for the population. This outcome reflected previous findings that risk assessment tools tended to demonstrate better predictive validity when applied to specific populations and offences (Singh et al., 2011).

A tool that demonstrated strong predictive validity for sex offenders with an ID was the ARMIDILO-S (Boer et al., 2011). The ARMIDILO-S is a SPJ tool designed to assess and manage risk of sexual recidivism of offenders with an ID. In addition to its focus on those with an ID, the ARMIDILO-S provides a number of unique features relative to other SPJ risk assessment tools. This includes: a) the examination of both individual and environmental variables; b) the examination of both risk and protective variables; c) its exclusive emphasis on dynamic factors; and d) its distinction between acute and stable factors.

Another important finding from Chapter 3 was that no gold standard tool to assess general risk of recidivism in those with an ID has been developed despite increased attention on offender risk assessment for those with an ID. Reflecting upon the strengths of the ARMIDILO-S, a general version of the tool was developed to address this gap - the *Assessment of Risk and Manageability of Individuals with Developmental and Intellectual Limitations who Offend: General Version* (ARMIDILO-G; Boer et al., 2010a) (Appendix D).

Like the ARMIDILO-S, the ARMIDILO-G is a SPJ tool that examines dynamic risk and protective features of an individual and their environment. The ARMIDILO-G contains a *client domain* of 17 composites and an *environment domain* of nine composites. Each of the 26 composites comprises a risk and a protective item (totalling 52 items). The division between client, environment, risk and protective features equates to four sub-domains: *client risk, client protective, environment risk, and environment protective*.

Incorporating many of the same variables as the ARMIDILO-S, the ARMIDILO-G also incorporates variables identified in the PIC-R theory (Andrews & Bonta, 2010). Inclusion of the additional variables is in recognition of the strong empirical support for what Andrews and Bonta (2010) refer to as the “central eight criminogenic needs” (p. 499) in the prediction and management of risk of general recidivism. The consideration of goals and self-efficacy are also included given the attention the Good Lives Model (GLM) has received in recent years and the theory’s emphasis on goal directed behaviour (Ward & Gannon, 2006).

Unlike the ARMIDILO-S, the ARMIDILO-G does not separate out acute and stable items. This reflects the lack of evidence as to which items are more and less stable over time and the need for a comprehensive assessment that addresses all relevant dynamic variables. Table 6 provides comparison of the risk / protective composites between the ARMIDILO-S and ARMIDILO-G, as well as rationale for items used within the ARMIDILO-G.

Table 6

*Risk / Protective Composites in the ARMIDILO-S and ARMIDILO-G and Rationale for**ARMIDILO-G Composites*

Risk / Protective Composite	ARMIDILO-S			ARMIDILO-G	
	Stable Items	Acute Items	Total	Presence	Rationale
<b>Client Composites</b>					
Supervision Compliance	Yes	Yes	Yes	Yes	ARMIDILO-S
Treatment Compliance	Yes	Yes	Yes	Yes	ARMIDILO-S
Emotional Coping	Yes	Yes	Yes	Yes	ARMIDILO-S
Preoccupation	(sexual)	(sexual)	Yes	(inappropriate)	ARMIDILO-S
Attitudes	(deviant)	-	Yes	(anti-social)	ARMIDILO-S
Offence Management	Yes	-	Yes	Yes	ARMIDILO-S
Relationships	Yes	-	Yes	Yes	ARMIDILO-S
Impulsivity	Yes	-	Yes	Yes	ARMIDILO-S
Substance Abuse	Yes	-	Yes	Yes	ARMIDILO-S
Mental Health	Yes	-	Yes	Yes	ARMIDILO-S
Goals	-	-	-	Yes	GLM
Self-Efficacy	-	-	-	Yes	GLM
Employment	-	-	-	Yes	PIC-R
Education	-	-	-	Yes	PIC-R
Leisure Activities	-	-	-	Yes	PIC-R
Finance	-	-	-	Yes	PIC-R
Behaviour	-	-	-	Yes	PIC-R
Unique Considerations <sup>a</sup>	Yes	Yes	Yes	-	-
Victim Related Behaviour	-	Yes	Yes	- <sup>b</sup>	-
Changes in use of coping strategies	-	Yes	Yes	- <sup>c</sup>	-
<b>Environment Composites</b>					
Attitudes towards the client	Yes	-	Yes	Yes	ARMIDILO-S
Staff Communication	Yes	-	Yes	Yes	ARMIDILO-S
Client knowledge by supports	Yes	-	Yes	Yes	ARMIDILO-S
Consistency of supervision	Yes	-	Yes	Yes	ARMIDILO-S
Access to alcohol and drugs	(client item)	-	(client item)	Yes	ARMIDILO-S
Unique considerations <sup>a</sup>	Yes	Yes	Yes	-	ARMIDILO-S
Changes in social relationships	-	Yes	Yes	Yes	ARMIDILO-S
Changes in monitoring	-	Yes	Yes	(Access to services)	ARMIDILO-S
Situational changes	-	Yes	Yes	Yes	ARMIDILO-S
Changes in victim access	-	Yes	Yes	Yes	ARMIDILO-S

Note. GLM = Composite comes from the Good Lives Model. RNR = Composite reflects the PIC-R theory.

<sup>a</sup> The availability of 'unique considerations' in the ARMIDILO-S allows the tool to potentially consider any of the items in the ARMIDILO-G that do not form part of the ARMIDILO-S.

<sup>b</sup> Victim related behaviour in the ARMIDILO-G is considered within the 'Preoccupation', 'Offence Management' and 'Access to Victims / Means' risk and protective items.

<sup>c</sup> Changes in use of coping strategies in the ARMIDILO-G is considered within the 'Treatment Compliance' composite and the 'Offence Management' protective item.

## **Ecological Validity**

Whilst the ARMIDILO-G's predictive validity has yet to be tested, it and the ARMIDILO-S show evidence of other forms of validity critical when deciding which risk assessment tool should be used to assess risk of recidivism of those with an ID. Apart from showing face validity, both tools have a number of unique features that improve their real world application – also known as its *ecological validity*. Ecological validity, a sub-type of external validity, examines how much the research environment influences behaviour. In psychological research, it asks to what extent a test assesses, via a proxy task, an attribute of an individual in the real world (Boer, 2009). This can mean the extent to which risk assessments are applied, whether recommendations on how to reduce risk are followed, whether tools are easily implemented, and whether their use results in reductions to recidivism. With slow developments to the current predictive validity of risk assessment measures, efforts in the field are increasingly focusing on how to improve ecological validity (Wong & Gordon, 2006). The issue of ecological validity has been of particular interest to those in supporting offenders with an ID given a) the challenges of supporting this population in the community, and b) the need to balance risk and rights of offenders with an ID owing to their vulnerability to abuse (Boer, 2009; Boer & Blacker, 2010).

## **Improving Ecological Validity of Risk Assessments**

Much has been done to improve the ecological validity of offender risk assessment tools since Monahan's (1981) critique. Population and assessment context characteristics, however, dictate which features are necessary in a tool for it to show adequate ecological validity. The unique needs and circumstances of those with an ID suggest that tools to assess this population

require specific features to ensure ecological validity (Boer & Blacker, 2010). In particular, tools need to assist the assessment and management of offenders in community settings. As already mentioned, those with an ID express high levels of challenging behaviour and over-representation at courts. They are also a population that tend to be under guardianship, legal or mental health orders. This context meets the post-assessment control requirements described by Heilbrun (1997) for a risk management as opposed to prediction model.

The ARMIDILO-S and more recently, the ARMIDILO-G, have been developed to consider risk management by consisting of dynamic variables (including acute variables that allow for the consideration of imminent risk). The consideration of risk management provides the ARMIDILO tools strong ecological validity. The ARMIDILO-G also has stronger ecological validity than most common general offender risk assessment tools due to the inclusion of items that consider protective factors, the environment and variables common in PIC-R based tools. Given the critical nature of these issues, each will be addressed in detail below.

## **Risk Management**

### **The Risk Management Process**

A frequently quoted definition of risk management (e.g., Douglas et al., 1999) is "...the process of systematically focusing on methods of reducing both the severity and frequency of recognized adverse clinical risks for each individual patient" (Snowden, 1997, p33). As mentioned, the role of a risk assessment is to predict, but not always to manage risk. It is suspected, however, that a tool that both predicts and assists in the management of risk is more likely to be used, as the results can later be used for management purposes even if it was originally used for prediction. Doyle and Dolan (2007) propose a five-stage risk management

process that includes a) collation of case information, b) identification of risk factors, c) identification of protective factors, d) risk formulation, and e) development of a risk management plan. Hart and Logan (2011) add scenario planning as an additional aspect of risk management. Baird and Stocks (2013) also recognise the importance of scenario planning, as well as providing feedback on the risk management plan to stakeholders and the individual being assessed. The ability for an assessment tool to perform, or at least facilitate these steps is likely to promote the tool's ecological validity.

### **Information Collation and Identification of Risk Factors**

Like other actuarial and SJP approaches, the ARMIDILO-G places great emphasis on the first two steps of the risk management process by indicating how information might be collected, providing a template for collation, identifying items, and describing how risk / protective variables may present in an assessed individual. Tools like the ARMIDILO-G have, however, been criticised for potential bias caused by including items that are vague clinical constructs and placing reliance on the clinician's judgment in scoring (Mills, 2005). SPJ approaches have, however, demonstrated adequate inter-rater reliability (e.g., Douglas, 2001). Furthermore, many actuarial measures rely on complex clinical constructs (such as psychopathy) which still require a level of complex analysis that equally increases risk of these biases (Litwack, 2001).

The ARMIDILO-G supports the collation and identification of risk factors in those with an ID in two ways. Firstly, the ARMIDILO-G, whilst incorporating items common to other tools, describes how facets might appear in a person with an ID. An example is that whilst financial difficulty is an important risk of recidivism, for those with an ID an added consideration related to finance is the role and functioning of public trustees or guardians in an

individual's financial management. Frustration in accessing available finances might promote aggression or theft, whilst too much access may promote increased substance use.

Secondly, the ARMIDILO-G includes items suspected of being risk factors for a person with an ID that might not be for a person without a disability. Examples include environmental items examining attitudes and knowledge of support staff. While a general offender may have individuals supporting them, this is not likely to be of the same nature or degree as disability support staff, as they often provide continuous support in home and in the community.

### **Formulation**

Unlike the *linear* approach taken by actuarial tools (i.e., the more risk factors, the greater the risk), SPJ tools, like the ARMIDILO-G, have been described as taking a *typographical* approach (Doyle & Logan, 2012). This means it is not the number, but nature, structure and function of factors and how they relate to contextual factors that are most important in considering overall risk. SPJ tools do this by promoting *risk formulation*. Doyle and Logan (2012) define a risk formulation as "...an organizational framework for producing a narrative description that explains the underlying mechanism involved in the generation of harmful behaviour and for proposing hypotheses regarding action to facilitate change (that is, harm prevention or managed risk)" (p. 413).

Risk formulation is expected to assist risk management by helping a clinician understand the function underlying offending and the factors that might influence when and how it might occur. One way the ARMIDILO-G assists formulation is by placing an emphasis on identifying critical items (Boer et al., 2004). These are items suspected to play a significant role in risk for the individual being assessed, either through causal processes, or through interaction with a number of dynamic risk variables. For example, for one person, drug and alcohol abuse might



be a critical factor as it influences a range of additional risk factors, such as engagement with anti-social peers and a lack of meaningful day activity, whereas for another person, drug and alcohol use might be present but not influence those other factors.

The ARMIDILO-G manual also assists formulation by providing information on items and how they have shown a relationship with recidivism (particularly for those with an ID) in the literature. This information helps inform a clinician about how risk and protective factors might interact, thereby giving additional explanatory power to the subsequent formulation.

### **Scenario Planning**

Whilst not as explicit as tools like the HCR-20 3<sup>rd</sup> Edition (Douglas, Hart, Webster, & Belfrage, 2013), the ARMIDILO-G also promotes the use of scenario planning. Scenario planning has been defined as: "... a process of positing several informed, plausible and imagined alternative future environments in which decisions about the future may be played out, for the purpose of changing current thinking, improving decision making, enhancing human and organization learning and improving performance" (Chermack & Lynham, 2002, p. 366 in Hart & Logan, 2011). Scenario planning promotes a clinician's thinking about risk in contextual terms, addressing the nature, likelihood, and severity of the behaviour, in the context of triggers and setting events that promote or prevent the behaviour. The ARMIDILO-G supports scenario planning through a) its focus on dynamic variables that are proximal to the behaviour, and b) inclusion of environmental variables. The broad range of dynamic variables allows a clinician to examine a wide range of factors that can be manipulated to affect the scenarios in which the behaviour might occur.

## **Risk Management Planning and Implementation**

Risk management planning can be defined as the organisation and implementation of interventions to address dynamic risk factors identified in a risk assessment. The ARMIDILO-G supports risk management planning and therefore risk management through its reliance on the SPJ approach. Hart and Logan (2011) suggest the SPJ approach stands alongside three other theories of offending, and therefore approaches to offender risk management. These are a) the Good Lives Model of Offender Rehabilitation (GLM; Ward & Gannon, 2006; Ward & Stewart, 2003b), b) Offence Paralleling Behaviour (OPB; Daffern, Jones, & Shine, 2010), and c) the PIC-R theory and its Risk, Needs and Responsivity (RNR) principles (Andrews et al., 1990; Andrews & Bonta, 2010).

While outside the scope of this chapter to compare the merits of these theories, each places different emphasis on which factors to address and in which order. In particular, the GLM emphasises the need to consider an offender's underlying personal goals and determine how the offending behaviour is being used as a poor attempt to achieve them. In direct contrast, the RNR principles suggest these factors should not be deemed primary targets for intervention, but instead serve as factors to assist motivation in addressing the central eight criminogenic needs. Meanwhile the OPB theory proposes an amnesic approach and is interested in the nature of the behaviour over time. Its focus is in exploring the offender's behaviour that has been similar (parallel) to the initial offence in order to develop understanding regarding that behaviour.

Arguably, unlike the other three, the SPJ approach does not equate to a theory as defined by Ward and Maruna (2007). This is because it does not explain how risk variables relate, but instead recognises each variable as possibly having differing effects depending on the individual and situation. Unlike the PIC-R theory, the SPJ approach also has not been empirically tested as

a rehabilitation theory. The SPJ approach does, however, have important strengths. By not being a rigid theory, the SPJ approach can be flexible and allow for the other three theories to be applied in the formulation, scenario planning or management planning stages. This flexibility adds to the SPJ's ecological validity, as the identified risk can be explained and managed through the different lens depending on the model(s) preferred by the clinician.

In addition to the usual benefits of SPJ tools, the ARMIDILO-G also incorporates features of both the GLM and PIC-R offender rehabilitation models. It includes all central eight criminogenic needs identified by Andrews and Bonta (2010). It also examines the offender's goals and their self-efficacy, factors critical within the GLM (with goals being the first composite explored in the tool).

### **The Ability to Manage Risk**

Whilst the ARMIDILO-G provides a number of unique advantages to promote risk management, the question remains as to whether risk assessment tools and processes can affect future risk of recidivism. Troquete et al. (2013), using a randomised controlled design, examined the effect a SPJ risk management approach had on forensic patient recidivism. Unfortunately, they found those who received a risk assessment had a non-significant higher rate of recidivism compared to those who did not receive a risk assessment. Wand and Large (2013) suggested these results and the issues surrounding the AUC statistic indicate risk assessment tools do not show real world validity. They reinforced this by giving examples of other research where a risk assessment approach was implemented that either: a) failed to reduce recidivism rates, or b) reduced recidivism but the research contained significant methodological flaws (Abderhalden et al., 2008; Kling, Yassi, Smailes, Lovato, & Koehoorn, 2011; van de Sande et al., 2011). Daffern et al. (2009) in a similar study examined the ability of the Dynamic Appraisal of Situational

Aggression to reduce institutional violence. Unexpectedly, no difference in aggression occurred when comparing baseline to two different risk assessment processes (risk assessment completion with and without follow up recommendations). The lack of support for risk management, however, was possibly affected by methodological flaws of the studies. For example, the failure to impact on aggression may have been owing to the insufficient evidence of predictive validity of tools used. There is no certainty, however, that a reduction of violence would have occurred if more empirically supported measures had been used. There was also the possibility that it was not the assessment, but the risk management process following the assessment phase that failed in the reduction of recidivism.

While the effect of specific risk assessment tools in managing risk remains in question, the work of Andrews, Bonta and colleagues (Andrews et al., 1990; Andrews et al., 2006; Andrews & Bonta, 2010) have provided support for application of risk assessment processes in managing risk. This evidence base has been achieved through their RNR principles and model of correctional assessment and rehabilitative programming (Andrews & Bonta, 2010).

The RNR model has been described (albeit by the authors) as the “...the prominent theoretical position in criminology” (Andrews et al., 2006, p. 9). Based on meta-analytic study, this model proposes priority and intensity of intervention to be directed at offenders who pose the highest risk (the *risk principle*). To do this, the model suggests that valid risk assessment tools must be utilised. Intervention should then target those dynamic risk factors shown to most influence risk of recidivism (referred to as *criminogenic needs*) to the exclusion of other non-criminogenic targets such as health needs (the *needs principle*). This should be done using cognitive-behavioural, social learning and skills based interventions with consideration of the learning needs and style required by the individual offender (the *responsivity principle*).

A number of risk assessment tools have been developed that target criminogenic needs and are based on the RNR model. These include the LSI-R (Andrews & Bonta, 2001) and Youth Level of Service / Case Management Inventory (YLS/CMI; Hoge & Andrews, 2006), along with their adaptations (Girard & Wormith, 2004). A recent meta-analysis of 128 studies with a combined sample of 137,931 offenders found that the LSI-R demonstrated moderate to good predictive validity (Olver, Stockdale, & Wormith, 2014). Andrews and Dowden (2006), in an earlier review, found adequate predictive validity, with an average AUC of .71 ( $r = .36$ ).

Andrews and Bonta (2010) suggest the most important application of the LSI-R, however, has been its ability to direct supervision to higher risk offenders. In a meta-analysis of the application of the risk principle, Andrews and Dowden (2006) found modest support based on 374 effect sizes. This was argued to provide evidence that the application of RNR based risk assessment tools aided the management of risk by ensuring intervention was directed to those who most benefited. In addition, Andrews and Bonta (2010) found evidence through meta-analysis that as corrective services comply with more elements of the RNR principles, recidivism is further reduced. Albeit promising, it is uncertain to what extent this was owing to the application of risk assessment measures.

In conclusion, whilst the ARMIDILO-G incorporates many features that promote its use in the management of offending, question still exists about the ability of risk assessment tools to reduce ongoing risk of recidivism.

## **The Context of Risk**

### **The Legacy of the Dangerousness Model**

Monahan (1984) recommended that if violence risk assessment tools were to become effective, they would need to be based on studies that relied on statistical methods and would need to consider situational and environmental influences on violence and not just personal characteristics. While the field of offender risk assessment has become dominated by predictive validity statistics, there has been a dearth of research examining situational or environmental influences.

Douglas (2001) argues that the focus on individual factors stems from risk assessments historically being concerned with one-time assessment of “dangerousness” and release from custody, as opposed to community management. Mulvey and Lidz (1995) suggest the deinstitutionalisation movement has been partly responsible for the shift of attention towards community management.

Mulvey and Lidz (1995) argue that current risk assessment processes have adopted many artefacts of the dangerousness model. Referred to as the “cue-utilization model of judgement” (p. 132), they suggest the development of risk assessment measures have developed out of primarily secure clinical settings, examining cues from information available at hand – namely case notes and interviews with patients. The legal philosophy of personal responsibility that led offenders to being placed in custodial environments also implies focus on the individual. Furthermore, those in secure settings often have long offence histories with multiple offences conducted in different environments. This variability promotes examination of the offender’s personal characteristics to the exclusion of context. Assessment across different offenders thereby results in identification of common individual characteristics, with context perceived as

either irrelevant or only significant as a trigger. Unfortunately, whilst focus on the individual can help identify psychological or medical interventions, it limits recommendation around the context in which the person should be placed. This is an even greater challenge for clinicians and administrators who may be required to then manage the person within the community where contextual factors can change frequently.

Despite a focus on an individual's features, there is recognition within the literature that contextual and situational factors have been underestimated in risk assessment (Steinert, 2002). Some have even acknowledged the importance of situational factors within the definition of risk assessment itself, with Borum (1999) defining it as: "...probabilistic estimates of a continuous variable (e.g., violence) based on both person-based and *situational variables*" (p, 595 in Rogers, 2000, italics added).

### **Contextual Factors in Managing those with an ID**

Unlike the criminal justice domain, the field of ID has long considered contextual variables in assessing and managing risk (albeit of challenging behaviour). *Applied behaviour analysis* is regarded the intervention of choice for those with an ID who display challenging behaviour (Carr, 1999). It is concerned with understanding the function of the behaviour followed by the manipulation of antecedents and consequences of the behaviour to modify its likelihood, duration, frequency and severity (LaVigna & Donnellan, 1986). Applied behaviour analysis places great emphasis on ecological control in order to manipulate those variables thought to control challenging behaviour given the anticipated ineffectiveness of cognitive strategies for many people with an ID (Carr, 1994). In the review by Didden, Duker, and Korzilius (1997), behavioural interventions were found to be effective in managing externally destructive behaviour (including violence) in those with an ID. Intervention included managing

the environment before and after the behaviour occurred. Despite the positive outcomes for those with an ID, no similar studies have been conducted on offender populations.

It is for the above reasons that both the ARMIDILO-S and ARMIDILO-G place great emphasis on environmental items. Unlike many other tools, they separate out client and environment domains. The environment section covers a range of both offender rehabilitation and disability issues. In particular, the environment domain addresses service issues commonly considered in applied behaviour analysis as well as contextual aspects related to the PIC-R theory.

### **The PIC-R Theory and Contextual Variables**

Few tools emphasise the role of the environment, although a number of theories place emphasis on the role of context in the process of offending. Most notably, the PIC-R theory (Andrews & Bonta, 2010) recognises proximal contextual factors and perceived rewards and benefits as the most critical factors influencing risk of recidivism (Andrews & Bonta, 2010). The rationale is that a person could have exceptionally high risk, but without access to victims and opportunity, offending will not occur.

Despite acknowledging proximal contextual factors as critical, the PIC-R proposes a number of intermediate contextual variables as being critical for intervention. This includes interaction with anti-social peers, lack of meaningful day activity and negative marital and family relationships. Apart from meta-analytic results, the reason for these targets is that they are the easiest to address. The immediate proximal factors have been argued to be too proximal to be prevented through formal intervention and are often unique to the individual and situation (Andrews & Bonta, 2010). In practice, however, the ability to manage proximal contextual factors is dependent on the level and nature of supports, controls and level of supervision



provided to the offender. With an increasing shift towards community supervision in many jurisdictions (Day, Howells, & Rickwood, 2004), there is increasing recognition that supervision options can be developed to manage more proximal contextual factors (NSW Law Reform Commission, 2013). From the perspective of ecological validity, this places increasing onus on risk assessment tools to therefore consider the context of risk.

The availability of support staff to supervise a person with an ID in the community permits both proximal and the more intermediate contextual factors described in the PIC-R to be addressed. For this reason and the evidence for the PIC-R theory, proximal and intermediate contextual factors identified in the PIC-R are addressed in the ARMIDILO-G. Intermediate factors include the presence of anti-social relationships and access to drugs and alcohol, whilst proximal factors include access to victims and the means to offend.

### **The Service Environment as a Contextual Factor**

A key aspect of the individual's context that has only received minimal attention in risk assessment research has been that of the rehabilitation service environment. The service environment is considered critical for assessment and intervention efforts given the significant role it can have in an offender's behaviour.

Examination of the service environment occurs in applied behaviour analysis through *mediator analysis*. Mediator analysis refers to the examination of those in the environment who might assist or prevent the implementation of the intervention plan – referred to by Allen (1999) as “anyone with the reinforcers” (p. 326). This concept recognises the influence on intervention of those around the person being assessed. Allen (1999) suggests there are only two factors that mediators require to ensure behaviour is managed - a) control over powerful enough reinforcers, and, b) whether they had the capacity to use these contingently. To do this, however, the

mediators need adequate knowledge and appropriate attitudes towards the client and intervention, a level of coordination and team work amongst the mediators to ensure contextual variables are managed consistently, and systems in place to ensure the plan is implemented (Allen, 1999).

The ARMIDILO-G acknowledges the influence of mediators by including variables that examine a) staff knowledge of the client and intervention, b) whether staff have appropriate attitudes towards the client and intervention, c) the effectiveness of staff communication and d) the consistency of staffing.

A focus on the service environment is a major aspect of what Andrews et al. (2006) refer to as the fourth generation of risk assessment. They highlight that previous forms of risk assessment tools failed to support the intervention and re-assessment process integral to effective rehabilitation. This includes whether criminogenic needs are being addressed, an appropriate evidence based intervention is being used (*general responsivity*), the program meets the client's specific learning style, and the program targets motivators that will keep the individual engaged (*specific responsivity*). Furthermore, previous generations of risk assessment failed to keep check of staff processes to ensure they were receiving adequate supervision to prevent drift from RNR principles.

Tools reflecting principles of the fourth generation of risk assessment include the Level of Service / Case Management Inventory (LS/CMI; Andrews, Bonta, & Wormith, 2004), the Youth Level of Service / Case Management Inventory (Hoge & Andrews, 2006) and the Offender Intake Assessment (Motiuk, 1997). With risk items largely consistent with the LSI-R, they have been found to display similar predictive validity (Andrews et al., 2004; Hilterman,

Nicholls, & van Nieuwenhuizen, 2013). The validity of the unique aspects of fourth generation tools (i.e. responsivity issues), however, has yet been evaluated.

The ARMIDILO-G incorporates the fourth generation of risk assessment tools by including variables that assess whether ID support services have facilitated access to programs and interventions. The tool also examines fourth generation elements such as staff knowledge, attitudes, communication and consistency also reflect fourth generation risk assessment features as described above.

### **The Imminence of Risk**

The influence of context on risk of reoffending highlights the dynamic nature of risk. A consequence is that as time passes, an environment is increasingly likely to change, making an assessment less reliable. This concept raises the importance of time as a construct to be factored into assessment. Monahan (1984) identified imminent / short-term risk as a critical issue in the development of future risk assessment tools. Understanding the imminence of risk is particularly important when considering management of risk, as knowing who is likely to reoffend soonest can help prioritise individuals for intervention (Andrews & Dowden, 2006). Furthermore, examining imminent risk helps identify which factors in the immediate vicinity should be manipulated. From a practical point of view, the question has been raised as to the utility of knowing whether someone will reoffend a decade from now (as is the case with actuarial tools such as the STATIC-99), as opposed to a shorter time frame in which a person is more likely to be supervised (Hart et al., 2007).

### **The Assessment of Imminence of Risk**

Research examining imminent risk has developed relatively recently despite the importance of the topic. The lack of research has been argued to be partly because studies based on ‘dangerousness’ have assumed risk is a feature of a person’s disposition, making time to reoffend of low importance (Steadman et al., 1993). Additionally, serious offences tend to have a low base rate for recidivism, meaning long follow up times are necessary to adequately identify recidivism rates and get sufficient statistical power to identify reliable predictors (Hanson & Morton-Bourgon, 2004; Holmes, 2012).

Hanson and Harris (2000b) suggest the study of imminent risk lends itself to the examination of dynamic, as opposed to static factors, given static factors influence over the long term. Douglas and Skeem (2005) describe the relationship between static and dynamic variables through a *risk status* and *risk state* framework. They suggest the majority of risk assessment tools and research to date have focused on risk status - defined as the interindividual variability of risk based largely on static factors. They suggest that if risk is to be managed, then risk state should be targeted. They define risk state as “...an individual’s propensity to become involved in violence at a given time, based on particular changes in biological, psychological and social variables in his or her life” (p. 349). Risk status focuses upon intraindividual factors determined by both static variables and the status of dynamic risk variables. They also note that the most critical dynamic variables are those causal factors that can be targeted through intervention.

Chu, Thomas, Ogloff, and Daffern (2013b) provide a summary of studies examining the predictive accuracy of static and dynamic risk tools / sub-scales over a period of less than six months. Whilst results have been mixed, there has been some support for the use of dynamic variables in short term prediction. For example, the clinical sub-scale of the HCR-20 has been

found to predict violence in secure settings, albeit with moderate predictive power (Grevatt et al., 2004; McNeil, Gregory, Lam, Binder, & Sullivan, 2003). A number of more recent studies, however, have provided evidence for the risk status / state framework and the relative strength of dynamic variables in predicting shorter term risk. For example, using the HCR-20, Gray, Taylor, and Snowden (2008) found the static items were more predictive of reoffending from six months to five years, whilst Chu and colleagues found the dynamic items were more predictive of inpatient aggression at 24 hours (Chu, Daffern, & Ogloff, 2013a) and at one and six months (Chu et al., 2013b).

Doyle and Logan (2012) identify that despite the publication of guidelines for the short-term management of violence in in-patient settings (National Institute for Clinical Excellence, 2005), there is no gold standard tool. They do, however, identify a number of tools addressing short-term risk of violence used in secure hospital settings have recently been published and validated. These include the Violence Screen Checklist (McNeil & Binder, 1994); Brøset Violence Checklist (Almvik & Woods, 2003); and the Dynamic Appraisal of Situational Aggression (Ogloff & Daffern, 2006). Others developed for community settings include the Violence Risk – 10 (Hartvig, Roaldset, Moger, Østberg, & Bjørkly, 2011) and the Classification of Violence Risk (Monahan et al., 2006). All tools emphasise the use of dynamic variables and all but the Classification of Violence Risk are SPJ tools despite it being a topic that does not exclude actuarial approaches from being used.

One challenge in developing tools has been identifying what constitutes short-term risk. Hanson and Harris (2000b) distinguish between acute and stable dynamic risk factors. Stable factors are dynamic, but likely to remain constant over a period of months or years, whilst acute factors can change hourly or daily. They identify that whilst static factors appear to have the

strongest predictive power for sexual recidivism over the long term, stable dynamic factors are best seen as targets for intervention. Hanson and Harris (2000b) argue that acute dynamic factors are related to the timing of reoffending and have little relationship with long-term risk. This partially explains why dynamic factors may be useful in short term prediction but lose power over longer periods of time. A challenge, however, is distinguishing between stable versus acute variables, as some dynamic variables may remain stable for a long period or change quickly (e.g., being delusional or aggressive). Douglas and Skeem (2005) suggest that given the paucity of research on the topic, the distinction between acute and stable dynamic variables remains "...a hypothetical, yet useful concept" (p. 351).

It has been argued, however, that the influence of acute factors in the management of risk is dependent on the extent to which these factors can be manipulated (Boer et al., 2004). Where the environment supports manipulation of context (e.g., by removing triggers) and disposition (e.g., staff calming a client down), acute factors could arguably be management, if not treatment targets if they could be managed over the longer term.

Acute factors are therefore likely to be of particular interest to those responsible for managing risk within the immediate context. This is of particular relevance in forensic ID services given the intense level of support often provided to those in secure and community settings (Clegg, 2008; Webber et al., 2010). Despite the potential importance of acute factors, they tend not to be included in the majority of common risk assessment tools (Doyle & Logan, 2012). Their omission potentially limits risk assessment tools' use in supporting risk management in the immediate situation and therefore challenges their ecological validity.

### **Imminent Risk and Intellectual Disability**

The issue of imminent risk has been explored in those with an ID possibly to a level comparable to the general offender population. A number of tools have been developed to assist staff identify clients at risk of displaying offending or challenging behaviour. This is unsurprising given the prevalence of challenging behaviour in those with an ID and supports being provided in the community (Emerson et al., 2001). Tools developed to examine short term risk in those with an ID (whether or not classified as an offender) that have been validated include the Support Intensity Scale (Reese, 2009), the Dynamic Risk Assessment and Management System (Lindsay et al., 2004b) and the ARMIDILO-S (Boer et al., 2011). The previous chapter identified that the ARMIDILO-S has displayed good predictive validity for those with an ID who have sexually offended (Blacker et al., 2011), whilst the DRAMS has performed adequately, albeit with poor inter-rater reliability when predicting short-term violent behaviour (Steptoe et al., 2008).

The abovementioned tools, albeit displaying adequate predictive validity, fail to meet the needs of clinicians wishing to assess short-term risk of general recidivism of those with an ID. The ARMIDILO-S has been developed to target short-term risk of sexual recidivism. The DRAMS, on the other hand, has been designed and validated to predict institutional incidents primarily involving aggression (Steptoe et al., 2008). The ARMIDILO-G, however, provides support to clinicians who wish to assess short-term risk of recidivism across the breadth of offending. It achieves this by incorporating only dynamic variables associated with general recidivism. Unlike the ARMIDILO-S, the ARMIDILO-G does not separate out acute and stable risk factors. Rather, the ARMIDILO-G acknowledges the lack of clear differentiation between the two types of dynamic variables and allows variables to be viewed as either stable or acute.

The lack of distinction thereby permits examination of risk according to the clinician's risk timeframe. The tool also includes the important stable factors identified in the PIC-R theory (Andrews & Bonta, 2010). In addition, it also includes all acute composites from the ARMIDILO-S, either directly (e.g., *emotional coping*), or indirectly, through alternative items more closely related to general offending. For example, the *victim related behaviour* composite in the ARMIDILO-S is addressed by *access to means* and *engagement in offence cycle* composites in the ARMIDILO-G. Regardless of predictive validity, the emphasis on acute and stable variables provides the ARMIDILO-G with strong support for its use in assessing imminent risk, thereby adding to its ecological validity.

## **The Influence of Protective Factors**

### **The Relationship between Risk and Protective Factors**

An area that has been overlooked in the development and evaluation of risk assessment tools is which factors, if present, reduce the risk of future offending. Referred to as protective factors, they have been described as either mediating or moderating the effect of exposure to risk factors (Pollard, Hawkins, & Arthur, 1999). Rogers (2000) explains that protective factors are not merely the absence or inverse of risk factors. Rather, both contribute independently to determine risk. The unique contribution of protective factors was supported by Hoge, Andrews, and Leschied (1996) who found protective and risk factors did not overlap for a sample of serious young offenders. The study found different risk and protective factors were prominent at different developmental stages, highlighting the independent and dynamic nature of protective factors. Meanwhile, the GLM (Ward & Gannon, 2006; Ward, Mann, Linley, & Joseph, 2004; Ward & Stewart, 2003b) suggests risk factors are better viewed as barriers to a pro-social way of



life and protective factors are better viewed as motivators in the reduction of offending (Ward & Stewart, 2003a).

Rogers (2000) suggests that ignoring protective factors in risk assessment provides “...implicitly biased evaluations with grave, often negative consequences to forensic populations” (p. 598), as identification of risk without protection from offending can not only result in decisions that inhibit an individual’s freedom unfairly, but result in a professional only seeing an individual’s weaknesses. The way in which problems are framed according to risk or benefit has long been recognised as critical in decision making. Tversky and Kahneman (1981) argue that humans tend to violate rules of rational choice and instead are influenced by the framing of contingencies and likely outcomes of decisions. They showed that an emphasis on one element of a problem’s outcome (risk or benefit) consistently impacts on the determination of the problem. In their study, they found that when made to choose between ambiguous options A or B regarding a hypothetical life threatening or financial situation, participants tended to choose not according to probability, but according to the manner the options were phrased. They found the option that was phrased most positively (e.g. 200 out of 600 lives would be saved as opposed to 400 out of 600 lives would be lost) was more likely to be chosen. Whilst this has not been explored in the field of offender risk assessment, it suggests that assessments that only discuss risk to the exclusion of protection may bias assessors towards a decision that over-emphasises risk of an individual.

Exclusion of protective factors in risk assessment may also have negative impact for risk management. Rogers (2000) suggests a focus on risk factors may result in a negative perception of an individual. This in turn could lead to poorer therapeutic relationship and counter-transference, and subsequently inhibit intervention and future decisions about management. An

example is that whilst an offender might have a history of substance use (a critical risk factor), he may be engaging well in a drug treatment program. Engagement in the program is likely to indicate reduced substance use and desistance from offending in future (especially if stealing was due to drug dependence). Omission of this protective factor in an assessment may lead to a management plan that is incompatible with current efforts at rehabilitation. Such an omission might mean being moved away from the service or being provided another program at an incompatible time. Not only would ignoring this factor potentially threaten access to the rehabilitation service, but also lack of acknowledgement of the effort made by the offender may communicate to the individual that treatment a) is not worth the effort, or b) that engaging in it is not going to affect his chances of rehabilitation. Thus, omission of protective factors in risk assessments can lead to risk management strategies that result in the loss of protective factors or that do not reinforce processes that are already available.

### **The Importance of Protective Factors for those with an ID**

Inclusion of protective factors in an offender risk assessment tool is likely to improve ecological validity when assessing those with an ID. This population have been described as disadvantaged within the criminal justice process (Lindsay, 2002). Long subjected to myths painting them as dangerous and at high risk of offending (e.g., Steinbach, 1934), offenders with an ID have often experienced high levels of restriction in services for fear of recidivism and the belief that they cannot be rehabilitated (Lambrick, 2003). They have also been exposed to harsh interventions subsequent to challenging behaviour (Spreat & Baker-Potts, 1983). As a result, the application of offender risk assessment tools has unsurprisingly been met with caution given their ability to further label those with an ID as dangerous, risky and needing restriction placed upon them (Johnston, 2002). Furthermore, often used in environments by people unfamiliar with

offender risk assessment tools, the very nature of completing one can assist in labelling the person with an ID an offender, even if the result of the assessment is favourable in terms of risk. As such, the use of protective factors in risk assessments provides opportunity to paint a balanced view of the individual, helping reduce the stigma of the individual as an offender and also prevent overly harsh responses to identified risk factors.

### **The Role of Protective Factors in Managing Risk**

The identification of protective factors has stemmed from research examining resilience of those who despite demonstrating higher risk, do not go on to offend (Vien, 2010). The issue of protective factors has been considered in a number of recent theories explaining the process of desistance of general (Serin & Lloyd, 2009), violent (Walker, Bowen, & Brown, 2013), and sexual offending (Gobbels, Ward, & Willis, 2012). Whilst there are differing definitions, desistance from offending has recently been defined as a “causal process that culminates in, and supports, the termination of offending” (Walker et al., 2013, p287).

Laws and Ward (2011) suggest desistance requires both internal and external change if offending is to be reduced. Whilst correctional services can enforce formal environmental controls to reduce risk of contact with victims, desistance has been closely linked with the availability of social protective features. In exploring the offending patterns of juveniles, Sampson and Laub (1990) argue that informal social controls associated with adult institutions (e.g., marriage, community and work) play a critical role in the transition away from offending during development and that transition towards these institutions might explain the strong relationship between young age and high rates of offending (the *age-crime curve*). There is little evidence, however, as to whether these protective factors are correlational or causal, as it might be pro-social maturation that increases motivation towards these factors. Regardless, there is

strong evidence to suggest engagement with informal pro-social supports where responsibility and connectedness are present act as protective factors and should be considered within the assessment of risk.

The study of desistance from offending has also identified a number of personality characteristics that appear as important protective factors even when holding biology and environmental factors constant. In their integrated model of desistance from sexual offending, Laws and Ward (2011) propose the GLM (Ward & Gannon, 2006; Ward et al., 2004; Ward & Stewart, 2003b) as a way of considering desistance. A positive psychology approach, it suggests offending occurs through inappropriate strategies to achieve appropriate *primary goods*, which all people aspire to achieve. These may be the result of conflict between goals, or a lack of strategies or skills to achieve the goal. Therefore, the theory emphasises personal agency, goal directed behaviour and the nature of goals as key considerations in addressing risk. Importantly, the theory suggests desistance occurs through the development of an ethically acceptable identity. Once again, these are factors rarely considered by risk assessment but potentially critical in risk management, especially if intervention is driven by a theory such as the GLM.

### **The Use of Protective Factors in Risk Assessment**

The consideration of protective factors has grown in recent years. A number of tools have more recently been published that include protective factors (e.g., the SAVRY and YLS/CMI; Borum et al., 2003; Hoge & Andrews, 2006). Both the SAVRY and YLS/CMI have shown very strong predictive validity, with the SAVRY resulting in the strongest predictive validity of any measure of violence risk in a systematic review by Singh et al. (2011). The YLS/CMI, whilst not as strong, has also shown good predictive validity in studies also examining the SAVRY with AUCs between 0.65 and 0.75 (Hilterman et al., 2013; Schmidt,

Campbell, & Houlding, 2011). It has also shown good cross-validation with similar results in samples of Japanese (Takahashi, Mori, & Kroner, 2013) and Australian (Shepherd, Luebbers, Ogloff, Fullam, & Dolan, 2014) juvenile offenders.

Risk assessment tools have also been developed that only examine protective factors. An example of this is the Structured Assessment of Protective Factors for Violence Risk (SAPROF; de Vogel, De Ruiter, Bouman, & de Vries Robbé, 2009). Designed to complement the HCR-20, it is a SPJ tool with primarily dynamic factors aimed to support clinicians identify the protective factors of physically and sexually violent offenders. The tool has shown good psychometric properties and predictive validity across a range of populations (de Vries Robbe, de Vogel, & de Spa, 2011; Yoon, Spehr, & Briken, 2011). In an attempt to explore the relationship between risk and protective factors, de Vries Robbé, de Vogel, and Douglas (2013) examined the predictive qualities of the SAPROF and HCR-20 on a sample ( $n = 188$ ) of sexually and physically violent forensic patients. Not only did both tools show good predictive validity (SAPROF AUC = .85; HCR-20 AUC = .84), but the SAPROF added incremental validity over the use of risk factors alone. In addition, an interaction effect was found, such that recidivism was lower in moderate and high-risk groups where protective scores were high.

Despite the importance of considering protective variables for those with an ID, few tools specific to those with an ID include them. In a unique fashion, both ARMIDILO tools examine protective variables to the same extent they examine risk variables. The tool assumes that variables related to offending can have unique protective and risk features. This means both tools examine social factors such as meaningful activities (such as work, education, leisure and treatment) as separate risk and protective variables. From the GLM, the ARMIDILO-G also takes into consideration important internal protective variables such as goal directed behaviour

and self-efficacy. Unfortunately, whilst the predictive validity of the risk variables of the ARMIDILO-S have been examined, no study has yet examined the predictive validity of the protective features of either ARMIDILO tool.

### **Towards Valid Risk Assessment for ID Offenders**

In conclusion, the ARMIDILO-G, whilst unexamined for its predictive validity, presents with a range of features that provide support for its ecological validity when assessing risk of general recidivism amongst offenders with an ID in the community. Firstly, the tool is expected to be easy to use by clinicians assessing offenders with an ID, given variables are described with consideration of ID. In addition, unlike many tools, the ARMIDILO-G examines imminent risk and explores environmental and protective variables. In sum, it is expected that all these factors add to its ability to manage risk posed by offenders with an ID in the community. Its ability to manage risk is strongly bolstered by it being a SPJ tool, allowing for formulation and scenario planning to be easily conducted owing to its use of empirically founded items. Its inclusion of variables associated with the most common offender rehabilitation theories (the PIC-R and GLM) also facilitates risk management, as assessment can highlight potential targets for intervention.

Unfortunately, whilst presenting with strong face and ecological validity, a risk assessment tool cannot be expected to be valid if it also does not show evidence of construct and predictive validity. The following chapter, therefore, examines the ARMIDILO-G's construct validity amongst a sample of people with an ID who have a history of offending, whilst Chapter 6 examines its concurrent and predictive validity.

## **Chapter 5:**

### **The Reliability and Factor Structure of the ARMIDILO-G**

#### **Introduction**

Whilst the ARMIDILO-G demonstrates strong ecological validity and many features of commonly used tools (e.g., the HCR-20), its overarching structure – the separation of environment and client, and risk and protective variables, has not been empirically investigated. In particular, it is not known whether risk and protective domains are best conceptualised as separate continuums or whether they fall along a single continuum of risk (protective at one end and risk at the other). This is a critical question, as it examines, to what extent protective features are unique and distinct from the absence of risk features.

The current study therefore aimed to explore the construct validity and reliability of the ARMIDILO-G. Construct validity was examined through exploring the ARMIDILO-G's items and four sub-domains a) client risk, b) client protective, c) environment risk, and d) environment protective, by way of exploratory and confirmatory factor analysis. Reliability was assessed through examination of inter-rater reliability, internal consistency and item homogeneity of sub-domains.

#### **Method**

##### **Participants**

Participants comprised one hundred and thirty nine people with a diagnosed ID who had received services from a New South Wales (NSW) government community forensic disability service – the Community Justice Program (CJP) between 2010 and 2014. A psychologist using a

standardised intelligence test had assessed all participants for ID before entering the program. The assessing psychologist had also confirmed age of onset of ID as being before 18 years and the presence of adaptive functioning deficits. A *mild-borderline IQ* was recorded where an individual had a full scale score above 70, but standard error of measurement placed their true IQ with a 95% confidence interval in a range that included a score below 70.

Participants were recruited from the larger CJP population according to random allocation to clinicians, with participants comprising those individuals allocated at intake into the CJP to clinicians trained in the ARMIDILO-G. Allocation occurred dependent on vacancy in a clinician's caseload. Approximately 50% of CJP clinicians had been trained in the ARMIDILO-G. De-identified demographic information regarding the total CJP population was provided by the CJP to the researcher.

The CJP is a voluntary program for people with an ID who have offended. The aim of the CJP is to reduce clients' risk of further offending and promote pro-social independent living. Eligibility criteria for the CJP comprise a) a diagnosed ID, b) a recent history of incarceration, c) concern regarding future risk of reoffending, d) an intention to reside within NSW, and e) being aged between ten to sixty five years. Referrals are received from corrective, juvenile justice or disability services following confirmation of an ID diagnosis and history of contact with the criminal justice system. Individuals referred (or their legal guardians) must consent to receive an ongoing service from CJP, although entry to the program can be made as part of a court order.

All CJP clients receive casework and behavioural intervention services and may also receive accommodation and psychological therapy, determined by assessed need. Clients are allocated one of four service types ('support services'). In order of increasing intensity, these are a) drop-in supports (DIS), b) semi-independent supported living (SSL), c) intensive residential



support (IRS) and d) institutional support. All service options (with the exclusion of those in institutions) are community based and not contingent on the presence of a legal order.

IRS units are low security, purpose built communal facilities that support three to five clients at any one time. Between one and three staff provide supervision and support. SSL accommodation services also support up to five clients, but have a lower ratio of staff to clients, and allow clients to live independently in purpose built self-contained units. DIS allow for the provision of 35 hours per week of community supervision and support but rely on clients having their own accommodation. A very small proportion of clients are supported in institutional settings owing to severe on-going challenging behaviour and high needs for support that cannot be catered for in the community. A range of government and non-government disability and offender rehabilitation organisations operate support services.

Support service staff are trained in principles of offender and disability rehabilitation. Support incorporates casework, skills development (e.g., literacy), community engagement (e.g., providing support during interviews and linking clients to services), implementation of behaviour intervention plans (e.g., through de-escalation strategies and use of contingency programs), and providing supervision in high-risk community settings. Support services are also supported by a multi-disciplinary clinical and casework team (CCT) comprising clinicians experienced in offender and disability rehabilitation who provide psychological interventions, risk assessments and clinical consultation. The CCT also manages the vacancies across support services.

Participant and population characteristics are presented in Table 7. There were very few statistically significant differences between participants incorporated into this thesis and the total CJP population. The only differences were that participants, compared to non-participants, were more likely to be older and be under a Guardianship Order.

Table 7

*Descriptive Information of Total CJP Population, Participants and CJP Non-Participants*

Characteristic	Total CJP Population (n = 276)		Participants (n = 139)		Remainder (n = 137)		Test
	n or M	(% or SD)	n or M	(% or SD)	n or M	(% or SD)	
Age	30.79	(10.88)	32.67	(11.38)	28.90	(10.04)	$F = .225^{**}$
Male	257	(93.1%)	128	(92.09%)	129	(94.16%)	$\chi^2 = .057, df = 1$
Aboriginal	108	(39.1%)	51	(36.69%)	57	(41.61%)	$\chi^2 = .548, df = 1$
CALD	16	(5.8%)	8	(5.76%)	8	(5.84%)	$\chi^2 = .000, df = 1$
Guardianship Order	97	(35.1%)	63	(45.32%)	34	(24.82%)	$\chi^2 = 11.310, df = 1^{**}$
IQ Range							$\chi^2 = 11.728, df = 6$
Moderate	33	(12%)	18	(12.95%)	15	(10.95%)	-
Mild-Mod	42	(15.2%)	29	(20.86%)	13	(9.49%)	-
Mild	154	(55.8%)	70	(50.36%)	84	(61.31%)	-
Mild-Bord	44	(16%)	21	(15.11%)	23	(16.79%)	-
Mental Disorder <sup>a</sup>	187	(67.8%)	90	(64.75%)	97	(70.80%)	$\chi^2 = 1.926, df = 1$
Psychosis	69	(25%)	37	(26.62%)	32	(23.36%)	$\chi^2 = .484, df = 1$
Pers Dis	44	(15.9%)	25	(17.99%)	19	(13.87%)	$\chi^2 = .777, df = 1$
Mood	82	(29.7%)	37	(26.62%)	45	(32.85%)	$\chi^2 = 1.592, df = 1$
Anxiety	39	(14.1%)	20	(14.39%)	19	(13.87%)	$\chi^2 = .002, df = 1$
CD/ODD	69	(25%)	32	(23.02%)	37	(27.01%)	$\chi^2 = .770, df = 1$
ADHD	80	(29%)	37	(26.62%)	43	(31.39%)	$\chi^2 = .998, df = 1$
PTSD	24	(8.7%)	10	(7.19%)	14	(10.22%)	$\chi^2 = .905, df = 1$
Develop	7		3	(2.16%)	4	(2.92%)	$\chi^2 = 2.245, df = 2$
AoD abuse <sup>b</sup>	252	(91.3%)	125	(89.93%)	127	(92.70%)	$\chi^2 = 1.757, df = 1$
Alcohol <sup>c</sup>	31	(11.2%)	17	(12.23%)	14	(10.22%)	$\chi^2 = 4.548, df = 2$
Cannabis <sup>d</sup>	66	(23.9%)	35	(25.18%)	31	(22.63%)	$\chi^2 = 2.347, df = 3$
Illicit <sup>e</sup>	219	(79.3%)	107	(76.98%)	112	(81.75%)	$\chi^2 = 1.643, df = 1$
Hard Illicit <sup>f</sup>	155	(56.2%)	73	(52.52%)	82	(59.85%)	$\chi^2 = 1.909, df = 1$
Service Type							$\chi^2 = 3.161, df = 3$
DIS	131	(45.7%)	81	(58.27%)	50	(36.50%)	-
SSL	61	(22.1%)	32	(23.02%)	29	(21.17%)	-
IRS	28	(10.1%)	20	(14.39%)	8	(5.84%)	-
Institution	8	(2.9%)	5	(3.60%)	3	(2.19%)	-
Education							$\chi^2 = 16.421, df = 10$
<Year 7	22	(8%)	10	(7.19%)	12	(8.76%)	-
<Year 10	190	(68.9%)	90	(64.75%)	100	(72.99%)	-
<Year 12	35	(12.68%)	21	(15.11%)	14	(10.22%)	-
Year 12	13	(4.7%)	9	(6.47%)	4	(2.92%)	-
Unknown	13	(4.7%)	8	(5.76%)	5	(3.65%)	-

*Note.* Mod = Moderate; Bord = Borderline; CALD = culturally and linguistically diverse / non-Caucasian and not aboriginal; Pers Dis = Personality Disorder; CD/ODD = Conduct Disorder / Oppositional Defiant Disorder; ADHD = Attention deficit Hyperactivity Disorder; PTSD = post-traumatic stress disorder.

<sup>a</sup> History of recorded diagnosis of mental disorder.

<sup>b</sup> History of any drug or alcohol abuse.

<sup>c</sup> History of alcohol abuse without history of other drug use.

<sup>d</sup> History of cannabis use without history of other illicit substance abuse.

<sup>e</sup> History of any illicit substance abuse.

<sup>f</sup> History of illicit substance abuse excluding cannabis.

\*\*  $p < .01$ .

## **Materials**

The ARMIDILO-G (Boer et al., 2010a) was described in Chapter 4. Each of the 52 items (26 risk and protective) in the ARMIDILO-G can be rated either *yes*, *maybe*, or *no* according to presence of the variable. Ratings are determined using a SPJ approach based on information from the preceding three months. Information can be obtained from available files, interview with staff or the assessed individual. Raters collate information in the ARMIDILO-G Scoring Template (Appendix D) and use the ARMIDILO-G Scoring Manual to inform a) the collection of information, and b) rating of risk and protective items. Recommendations are then recorded for client and environment factors. A rating of *low*, *medium* or *high* using a SPJ approach is then determined based on information derived from all four sub-domains. This information is then transferred into a report and fed back to the treatment team in order to inform the development of services and interventions.

## **Procedure**

Clinicians from CJP CCTs administered the ARMIDILO-G. All clinicians have tertiary qualifications in psychology, criminal justice, disability or related areas and have experience in disability, criminal justice or / and mental health rehabilitation. Approximately half the clinicians were registered psychologists, whilst the remainder included social workers, nurses, other allied health professionals and ID behaviour support specialists. Clinicians were allocated participants based on vacancies in their caseload. Clinicians completed the tool on a three to six monthly basis depending on identified need and available resources.

CCT staff received a two-day training program on the administration and implementation of the ARMIDILO-G that was delivered by the author. Training included an understanding of risk assessment, issues in the rehabilitation of offenders with an ID, and the rationale and process

of administering the ARMIDILO-G. Competency for conducting the ARMIDILO-G was evaluated during training. Evaluation involved trainees completing the ARMIDILO-G scoring template based on de-identified file information and a video of a re-enacted interview between a clinician and support service staff member. Results were then collected and examined before feedback was given to the group to clarify comprehension.

Clinicians administered the tool using information obtained about the participant over the preceding three months. Information was obtained from incident reports, progress notes, legal and health reports and disability plans. Assessors also conducted a two-hour phone interview with a support service staff member who had worked extensively with the client over the period of assessment. Four-hour training sessions were delivered by the author and CJP clinicians on a regular basis across CJP sites in NSW between 2010 and 2014 to staff of support services who were identified as likely to partake in ARMIDILO-G interviews. Training was aimed at improving the accuracy of information reported to clinicians by increasing the skill of staff in identifying risk and protective factors.

The results of each ARMIDILO-G were submitted to a database where ratings were collated and comments and recommendations listed. Recommendations were then implemented over the following three to six months by the CCT clinician and support services.

ARMIDILO-G forms were extracted from the CJP database and linked with demographic information before being de-identified by CJP staff for research purposes via a database record number. Only the first ARMIDILO-G conducted for each participant was used in this study.

Responses to items were quantified for purpose of evaluation. Risk and protective ratings were coded as follows: *Yes* = 2; *Maybe* = 1; and *No* = 0. Total scores for the *client risk* and *client protection* sub-domains had a range between 0 and 34 whilst *environment risk* and *environment*

*protection* sub-domains had a range between 0 and 18. ARMIDILO-G *total* scores were calculated by adding *client* and *environment risk* scores and subtracting *client* and *environment protective* scores. A structured professional judgement risk rating was then given as *low*, *medium* or *high* based on the information in the ARMIDILO-G Scoring Sheet.

The University of Sydney Human Research Ethics Committee approved the study (protocol 12944; Appendix I). Data analyses and model development was conducted using the SPSS and AMOS (version 21) software packages.

## **Results**

### **Descriptive Characteristics**

Table 8 presents the distribution ( $M$ ,  $SD$ ) of ARMIDILO-G ratings for the four sub-domains for the total sample ( $n = 137$ ) and demographic sub-samples. The mean sub-domain score for: *client risk* was 20.66 ( $SD = 8.60$ ; range = 2 - 34), *client protective* was 13.68 ( $SD = 8.30$ ; range = 0 - 31), *environment risk* was 8.01 ( $SD = 4.48$ ; range = 0 - 17), and *environment protective* was 8.01 ( $SD = 4.48$ ; range = 0 - 17) respectively. Analysis of scores and residuals using box plots and Mahalanobis distance indicated the assumption of homoscedasticity was met and there was no evidence of outliers or significant skew or kurtosis.

Table 8

*Distribution of Sub-Domain Scores for the Total Sample and Demographic Sub-Samples*

Sub-Sample	ARMIDILO-G Sub-Domain											
	Client Risk			Client Protective			Environment Risk			Environment Protective		
	<i>M</i>	<i>SD</i>	Test	<i>M</i>	<i>SD</i>	Test	<i>M</i>	<i>SD</i>	Test	<i>M</i>	<i>SD</i>	Test
Total	20.66	8.60		13.68	8.30		8.01	4.48		10.92	4.11	
Juveniles	19.67	7.57	-.201	14.33	5.86	.138	6.00	4.36	-.790	10.33	3.06	-.249
Females	21.6	9.71	.359	16.8	10.60	1.238	7.20	5.45	-.599	13.30	3.65	1.922
Aboriginal	23.46	8.62	-2.975***	11.78	8.03	2.054*	9.10	3.94	-2.191*	10.36	3.77	1.211
CALD	22.75	7.69	-.708	11.88	9.78	.632	7.00	3.42	.662	9.75	4.20	.829
Guardianship ID	19.76	8.18	1.113	14.52	8.31	-1.074	7.65	4.98	.863 ×	11.11	4.35	-.499
			1.318 ^			2.709*^			.248^			.628^
Moderate	21.33	9.60	.357	13.67	8.05	-.007	8.72	4.23	.721	10.22	3.81	-.772
Mild-Mod	18.55	8.15	-1.492	16.28	8.92	1.917	8.14	4.76	.167	11.07	4.39	.220
Mild	21.86	8.59	1.653	11.87	7.87	-2.626**	7.93	4.43	-.229	10.74	4.20	-.517
Bord-Mild	19.05	8.13	-.932	16.05	8.02	1.427	7.52	4.57	-.547	11.90	3.70	1.196
Service			.2.152^			.3.124*^			3.927**^			4.827**^
DIS	21.65	8.75	1.643	12.56	8.40	-1.924	8.33	4.02	.967	10.79	3.62	-.422
SSL	21.06	7.85	.304	13.09	6.54	-.531	9.00	4.68	1.434	9.56	4.38	-2.164*
IRS	16.37	8.06	-2.382*	18.11	8.23	2.556*	6.32	5.22	-1.805	12.47	4.71	1.791
Institution	18.20	9.78	-.650	18.80	11.82	1.411	3.00	2.24	-4.858**	15.80	2.68	2.773**
Location			.893^			.786^			2.322^			2.685*^
Institution	18.20	9.78	-.650	18.80	11.82	1.411	3.00	2.24	-4.858**	15.80	2.68	2.773**
Metro	20.25	8.38	-.617	13.21	7.72	-.736	8.30	4.40	.843	10.57	3.93	-1.127
Rural	20.74	9.09	.079	14.09	8.48	.408	7.98	4.64	-.068	10.87	4.29	-.101
Remote	24.60	7.40	1.513	12.80	10.24	-.347	8.50	3.78	.357	11.40	4.00	.383

Note. Tests are t tests, where  $df = 135$ , corrected for unequal variances as necessary.

^ One-way ANOVA,  $F(3, 133)$ . ×  $df = 116$  due to unequal variances.

\*  $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

Significant differences in ARMIDILO-G scores between sub-samples in Table 8 are primarily in the direction anticipated, with Aboriginal participants more likely to display individual risk factors and less likely to present with environmental and client protective factors. Similarly, participants with greater levels of support in IRS settings were less likely to display individual risk factors and more likely to display protective factors. Meanwhile, those in institutions were rated as having significantly less environmental risk and a higher level of environmental protection from offending.

### **Reliability**

Inter-rater reliability was assessed with the intraclass correlation co-efficient (ICC) using a two-way random effects model for averaged ratings, as raters were consistent across cases. A measure of consistency, as opposed to absolute agreement, was selected, as the purpose was to assess the measure's reliability across raters.

Table 9 summarises the results of reliability analyses. Results suggest high inter-rater reliability according to criteria by Fabrigar, Wegener, MacCallum, and Strahan (1999), with all  $ICC_2$  (equivalent to  $\kappa_W$ ) above .90. The item level ( $ICC_1$ ) was much lower than the sub-domain level ( $ICC_2$ ) inter-rater reliability. Whilst lower than expected, this issue was redundant since the outcome of the ARMIDILO-G (risk and protection from offending) is determined at the sub-domain level. It should be noted however, that the inter-rater reliability reported is expected to demonstrate the upper-bound estimate of the inter-rater reliability of the ARMIDILO-G given it was assessed immediately after training and in a controlled setting.

*Risk* and *protective* domains, along with the client sub-domains (*client risk* and *client protective*) showed high internal consistency. Environmental sub-domains, however, demonstrated somewhat lower internal consistency, albeit still at an acceptable level. Item

homogeneity, whilst of low importance in risk assessment development, was consistently low, suggesting minimal redundancy of individual items.

Table 9

*Reliability of ARMIDILO-G Ratings: Item Homogeneity, Item Internal Consistency and Inter-Rater Reliability*

ARMIDILO-G Sub-Domain	Item Homogeneity MIC	Internal Consistency Cronbach $\alpha$	Inter-Rater Reliability	
			ICC <sub>1</sub> (95% CI)	ICC <sub>2</sub> (95% CI)
Total Risk	.30	.92	-	-
Client Risk	.34	.90	.45 (.29 - .66)	.93 (.87 - .97)
Environment Risk	.30	.79	.50 (.29 - .80)	.94 (.87 - .98)
Total Protective	.31	.92	-	-
Client Protective	.35	.90	.53 (.36 - .73)	.95 (.90 - .98)
Environment Protective	.30	.79	.57 (.35 - .84)	.96 (.90 - .99)

*Note.* MIC = Mean Inter-item Correlation. For MIC and Cronbach  $\alpha$   $N = 137$ . ICC = Intraclass Correlation Coefficient. For ICC  $N = 16$ . All ICC are significant at  $p \leq .001$ .

### Exploratory Factor Analysis

Two exploratory factor analyses (EFA) were conducted with the ARMIDILO-G data to uncover underlying relationships and unobservable latent constructs between items. Data from all participants were included as there were no missing data or univariate outliers. All fifty-two items across the four sub-domains of the ARMIDILO-G were drafted for the first analysis. The second analysis utilised all 26 composite scores (calculated as risk minus protective scores).

***Item Level Exploratory Factor Analysis.*** Initially, the factorability of the 52 ARMIDILO-G items was examined. Several well-recognised criteria for the factorability of a correlation were used. Firstly, all items correlated at least .3 with at least one other item, suggesting good factorability. Secondly, the Kaiser-Meyer-Olkin (KMO) measure of sampling



adequacy was .86, above the recommended value of .6 (Dziuban & Shirkey, 1974), and Bartlett's test of sphericity was significant;  $\chi^2(1326) = 4670.90, p < .001$ .

Principal axis factoring was applied, as items were likely to violate the assumption of normality and the purpose was to explore unobserved variables (Fabrigar et al., 1999). The optimal number of factors to retain in the model was determined according to Horn's (1965) parallel analysis and Cattell's (1966) scree plot test. One through to nine factor models were run to reduce over-simplification of factor structure (Preacher & MacCallum, 2003). Strong correlation between items necessitated an oblique rotation. Both promax and direct oblimin rotations of the factor loading matrix were used. Items that had low item-total correlations, or low factor loadings in the analysis were removed. Final solutions were selected based on conceptual integrity of factor item content, low correlations between factors, high item primary loadings ( $>.30$ ), and low cross loadings ( $<.20$ ), as recommended by Floyd and Widaman (1995).

The four factor solution, which explained 43% of the variance, was preferred as a) it was theoretically consistent with the ARMIDILO-G's four sub-domain structure, b) eigenvalues on the scree plot levelled off after four factors, and c) there were an insufficient number of primary loadings for the fifth and subsequent factors. There was little difference between the promax and direct oblimin solutions; thus, both solutions were examined in the subsequent analyses before deciding on an oblimin rotation for the final solution. During the development of the four factor solution, 13 items were removed from the initial pool of 52 items. Items were removed owing to primary loadings below .3 or cross loading between factors above .3. The item *Supervision Compliance (Risk)* was retained despite cross loading on *Lifestyle* and *Personality* factors as it provided the most simple and theoretically consistent structure. The results of this final solution are provided in Table 10.

Table 10

*Summary of EFA Results for 39 ARMIDILO-G Items using Obliquely Rotated Factor Loadings*

Item	Factor				Communalities
	Prosocial Lifestyle	Support Staff	Drug & Alcohol	Antisocial Personality	
C13-Education (P)	<b>.832</b>	-.070	.161	.038	.566
C13-Education (R)	<b>-.822</b>	.065	-.088	-.017	.585
C3-Treatment Compliance (P)	<b>.524</b>	.049	-.282	.028	.483
C3-Treatment Compliance (R)	<b>-.471</b>	.076	.283	.260	.572
C12-Employment (R)	<b>-.457</b>	-.028	.187	.119	.397
C12-Employment (P)	<b>.455</b>	-.014	-.108	-.054	.277
C5-Inapprop Preoccupation (P)	<b>.424</b>	.136	-.083	-.206	.421
C5-Anti-Social Attitudes (P)	<b>.408</b>	.210	-.157	-.136	.466
C1-Goals (P)	<b>.394</b>	.233	-.225	-.191	.587
E9-Services (P)	<b>.371</b>	.234	-.103	.184	.262
C14-Leisure (P)	<b>.350</b>	.204	-.276	-.047	.439
C6-Management (P)	<b>.345</b>	.072	-.062	-.299	.359
C2-Supervision (P)	<b>.340</b>	.163	-.089	-.178	.332
E3-Communication (P)	.011	<b>.714</b>	.034	.066	.480
E2-Attitudes to Client (P)	.057	<b>.647</b>	.178	-.068	.423
E3-Communication (R)	.099	<b>-.638</b>	.191	-.079	.441
E2-Attitudes to Client (R)	-.065	<b>-.619</b>	-.161	.099	.408
E1-Supervision Consistency (P)	.052	<b>.573</b>	-.003	-.127	.419
E1-Supervision Consistency (R)	.037	<b>-.558</b>	-.092	.127	.317
E4-Client Knowledge (R)	.005	<b>-.531</b>	.137	-.130	.311
E5-Situational Consistency (P)	.147	<b>.469</b>	-.279	.061	.459
E5-Situational Consistency (R)	.067	<b>-.392</b>	.259	.090	.300
E7-Access to Drug/Alcohol (R)	-.098	.084	<b>.814</b>	-.008	.685
C10-Substance Use (R)	-.036	.102	<b>.768</b>	.272	.797
C10-Substance Use (P)	.060	.043	<b>-.760</b>	-.120	.736
E4-Client Knowledge (P)	.105	.076	<b>-.748</b>	.074	.634
C16-Finances (P)	-.038	.035	<b>-.422</b>	-.255	.325
E7-Access Victims (R)	-.115	-.205	<b>.404</b>	.153	.430
C17-Behaviour (R)	-.136	-.079	-.096	<b>.633</b>	.472
C11-Impulsivity (R)	.129	.058	.007	<b>.596</b>	.307
C7-Emotion Coping (R)	-.115	.061	-.044	<b>.558</b>	.331
C17-Behaviour (P)	.177	.181	.030	<b>-.533</b>	.478
C6-Offence Management (R)	-.070	-.070	.246	<b>.503</b>	.494
C15-Mental Health (R)	.065	-.006	.057	<b>.486</b>	.242
C9-Relationships (R)	.007	-.091	.247	<b>.483</b>	.431
C11-Impulsivity (P)	.039	-.034	-.155	<b>-.464</b>	.303
C7-Emotion Coping (P)	.200	.151	-.051	<b>-.443</b>	.419
C8-Self Efficacy (R)	-.062	-.178	.007	<b>.421</b>	.287
C2-Supervision (R)	<b>-.324</b>	-.057	.166	<b>.325</b>	.434
<b>Cronbach <math>\alpha</math></b>	<b>.89</b>	<b>.89</b>	<b>.84</b>	<b>.85</b>	-
<b>Eigenvalue</b>	<b>12.21</b>	<b>2.24</b>	<b>1.61</b>	<b>1.57</b>	-
<b>% Variance explained</b>	<b>29.97</b>	<b>5.75</b>	<b>4.12</b>	<b>4.03</b>	-
<b>Inter-Factor Correlation</b>					
Lifestyle	1.000	-	-	-	
Staff	.394	1.000	-	-	
Drug & Alcohol	-.387	-.328	1.000	.391	
Personality	-.367	-.284	.391	1.000	

Note. Factor loadings over .30 appear in bold. C = Client item. E = Environment item. R = Risk item. P = Protective item. Inapprop = Inappropriate.

The factor structure did not reflect the four sub-domains described in the ARMIDILO-G. Instead, these analyses suggested a different four factors underlay responses on the ARMIDILO-G: one environmental factor (*qualities of support staff*) and three client focused factors (*anti-social personality attributes, pro-social lifestyle and drug and alcohol use*). The low correlation coefficients combined with the high internal consistency within factors reported in Table 10 provide evidence of good internal reliability and discriminant validity of the four proposed factors.

***Composite Exploratory Factor Analysis.*** A second EFA was conducted using the composite scores of the ARMIDILO-G (risk minus protective scores for each area of assessment). This EFA was conducted to explore structure of the ARMIDILO-G assuming risk and protective features lie at opposite ends of the one continuum. The same method used in the initial EFA was applied. Factorability was good, with all composites correlating with at least one other composite at above .3. In addition, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was .90, above the recommended value of .6, and Bartlett's test of sphericity was significant;  $\chi^2(325) = 1835.30, p < .001$ .

Again, a four factor solution, which explained 52% of the variance, was preferred as eigenvalues on the scree plot levelled off after four factors. In addition, a four factor solution was supported as there were an insufficient number of primary loadings and there was difficulty interpreting, at a theoretical level, the fifth and subsequent factors. Again both promax and direct oblimin solutions were examined in subsequent analyses before deciding on a promax rotation for the final solution, due to better fit. During the development of the four factor solution, seven composites were removed from the initial pool of 26. Composites were removed owing to primary loadings below .3 or cross loading between factors above .3. The results of this final solution are provided in Table 11.

Table 11

*Summary of EFA Results for 19 ARMIDILO-G Composites using Obliquely Rotated Factor*

*Loadings*

Composite	Factor				Communalities
	Treatment/ Lifestyle	Staff Support	Finance/ Impulsivity	Drugs and Alcohol	
C3-Treatment Compliance	<b>.887</b>	-.064	-.231	.174	.677
C5-Inappropriate Preoccupation	<b>.786</b>	-.053	.173	-.157	.640
C2-Supervision Compliance	<b>.746</b>	.059	.004	-.059	.562
C1-Goals	<b>.710</b>	.036	.074	.047	.658
C12-Education	<b>.582</b>	.029	-.251	.079	.258
C6-Offence Management	<b>.581</b>	-.067	.268	-.018	.547
C4-Anti-Social Attitudes	<b>.550</b>	.145	.153	-.076	.505
C13-Employment	<b>.436</b>	.023	.009	.131	.293
E4-Client Knowledge	.024	<b>.776</b>	-.255	.032	.499
E3-Staff Communication	-.109	<b>.754</b>	-.020	.065	.512
E1-Supervision Consistency	.050	<b>.596</b>	.031	-.046	.387
E2-Attitude to Client	.157	<b>.554</b>	.067	-.221	.378
E5-Situational Consistency	-.021	<b>.505</b>	.179	.162	.477
C11-Impulsivity	.010	-.209	<b>.745</b>	-.058	.419
E6-Changes to Relationships	-.067	.210	<b>.695</b>	-.059	.551
C16-Finance	-.159	.011	<b>.669</b>	.218	.504
E8-Access to Drugs / Alcohol	.046	-.005	-.081	<b>1.006</b>	.976
C10-Substance Use	.142	-.105	.294	<b>.631</b>	.779
E7-Access to Victims/Means	.285	.169	.153	<b>.318</b>	.568
<b>Cronbach <math>\alpha</math></b>	.88	.78	.70	.86	-
<b>Eigenvalue</b>	7.59	1.84	1.36	1.10	-
<b>% Variance explained</b>	37.34	7.11	4.78	4.02	-
<b>Inter-Factor Correlation</b>					
Lifestyle	1.000	-	-	-	-
Staff	.544	1.000	-	-	-
Finance	.668	.487	1.000	-	-
Drug & Alcohol	.573	.389	.543	1.000	-

*Note.* Factor loadings over .30 appear in bold.

### Confirmatory Factor Analysis

Confirmatory factor analyses (CFA) were completed to test both the item and composite level solutions identified in the above EFAs. These analyses were conducted to identify a valid factor structure of the AMRIDILO-G, but also to further examine the relationship between risk

and protective items. Additional CFAs were also conducted to test the theoretical four sub-domain factor structure of the ARMIDILO-G. Subsequently, seven CFA using the Maximum-Likelihood estimation method were conducted to examine the above three hypothesised factor structures. The three hypothesised models were examined for model fit using the Absolute Fit Chi Square statistic (ratio of chi-square to degrees of freedom:  $\chi^2$ ), the Root-Mean-Square Error of Approximation (RMSEA), the Comparative Fit Index (CFI) and the Tucker Lewis Index (TLI). These indices were chosen owing to a low sample size to item ratio in current analyses. The Akaike Information Criterion (AIC) was also used to compare the three models owing to its ability to compare non-nested models (Schreiber, Stage, King, Nora, & Barlow, 2006).

Firstly, a CFA was conducted based on the two factor (*client* and *environment*) and four sub-factor (*client risk*, *client protective*, *environment risk* and *environment protective*) structure proposed by the ARMIDILO-G (Boer et al., 2010a). This model provided a poor fit to the data ( $\chi^2 = 2.429$ ; TLI = .534; CFI = .552; RMSEA = .103 and AIC = 3302.26). When client and environment latent factors were removed, fit indices increased but remained at a poor level ( $\chi^2 = 2.373$ ; TLI = .552; CFI = .572; RMSEA = .100 and AIC = 3228.37).

The fit of the item level model proposed in the first EFA was then tested. Initial model fit to data was poor ( $\chi^2 = 2.055$ ; TLI = .707; CFI = .724; RMSEA = .088; and AIC = 1598.07). Poor fit was suspected to be the result of shared variance between corresponding risk and protective items for each composite. To improve fit, corresponding risk and protective factors were covaried. Four items (2 composites: *compliance with supervision* and *offence management*) were then removed from the model as corresponding risk and protective items loaded on separate factors. These changes were supported by covaried items displaying high modification indices and deleted items displaying low loadings on factors. Variables were then adjusted using a common latent factor following evidence of common method bias. Following modification,

model fit was significantly improved, albeit with indices still ranging from poor to good ( $\chi^2 = 1.256$ ; TLI = .934; CFI = .944; RMSEA = .043 and AIC = 883.47). The adjusted model explained 44.54% of variance, with moderate loading factors (.312 to .879) and communalities (.268 to .792), as well as low cross-loadings (0 to .358) and correlations between factors (-.269 to -.386).

Thirdly, CFAs were conducted using the 26 ARMIDILO-G composites. One CFA was conducted based on items included in the nested model with highest fit indices described in the CFA immediately above. Composites were linked to latent factors based on whether a corresponding risk or protective item loaded on that factor in the item based CFA. There was no conflict in deciding upon which factor a composite would load, as the removal of covaried items in the item based CFA had removed any potential conflict. This resulted in 23 composites linking with the four latent variables described in the first EFA. Applying common method biased adjusted variables and a promax rotation, model fit was improved over the original model with all indices indicating good fit ( $\chi^2 = 1.251$ ; TLI = .953; CFI = .963; and RMSEA = .043), explaining 49.52% of variance, with generally high loading factors (.371 to .927) and communalities (.266 to .834), low cross-loadings (0 to .416) and low to moderate correlations between factors (.454 to .691). Table 12 provides a summary of results for this CFA.

Table 12

*Summary of Confirmatory Factor Analysis Results for 23 ARMIDILO-G composites using  
Obliquely Rotated Factor Loadings*

Composite	Factor				Communalities
	Lifestyle	Personality	Support Staff	Drug and Alcohol	
Treatment Compliance	<b>.900</b>	-.090	-.152	.097	.673
Inappropriate Preoccupation	<b>.720</b>	.172	-.048	-.085	.593
Supervision Compliance	<b>.698</b>	.065	.030	-.053	.534
Goals	<b>.644</b>	.121	.035	.084	.655
Education	<b>.589</b>	-.070	-.020	-.028	.266
Access to Services	<b>.476</b>	-.192	.177	.266	.451
Offence Management	<b>.468</b>	<b>.372</b>	-.058	.012	.561
Recreation & Leisure	<b>.443</b>	.017	.109	.240	.493
Anti-Social Attitudes	<b>.427</b>	.239	.164	-.040	.490
Employment	<b>.406</b>	.057	.001	.153	.309
Impulsivity	-.158	<b>.695</b>	-.120	.113	.381
Emotional Coping	.172	<b>.657</b>	-.043	-.120	.493
Behaviour	.183	<b>.557</b>	.060	-.086	.463
Finance	-.294	<b>.537</b>	.079	<b>.416</b>	.467
Mental Health	.023	<b>.528</b>	-.090	.115	.331
Self-Efficacy	.138	<b>.517</b>	.122	-.137	.381
Relationships	.155	<b>.499</b>	.061	.053	.467
Staff Communication	-.175	.040	<b>.782</b>	.049	.530
Client Knowledge	.083	-.298	<b>.741</b>	-.007	.480
Supervision Consistency	-.061	.146	<b>.623</b>	-.057	.405
Attitude to Client	.120	.049	<b>.603</b>	-.197	.394
Situational Consistency	-.007	.060	<b>.510</b>	.250	.478
Access to Drugs & Alcohol	.113	-.118	-.053	<b>.927</b>	.834
Substance Use	.080	.203	-.112	<b>.777</b>	.823
Access to Victims/Means	.278	.084	.135	<b>.371</b>	.533
<b>Cronbach <math>\alpha</math></b>	.90	.81	.78	.86	-
<b>Eigenvalue</b>	9.72	1.97	1.41	1.28	-
<b>% Variance explained</b>	37.01	5.76	4.02	3.14	-
<b>Inter-Factor Correlation</b>					
Lifestyle	1.000	-	-	-	-
Personality	.691	1.000	-	-	-
Support Staff	.593	.454	1.000	-	-
Drug & Alcohol	.613	.539	.451	1.000	-

Note. Factor loadings over .30 appear in bold.

A final CFA was then conducted using the 18 composites making up the four factors in the second EFA. Common method bias, but no significant covariance, was identified between composites. Applying common method biased adjusted variables and a promax rotation, indices indicated good model fit ( $\chi^2 = 1.415$ ; TLI = .942; CFI = .958; and RMSEA = .055). Importantly, whilst some indices were lower than for the previous CFA, the AIC = 277.07, indicating the best fit compared to other models tested. As this model did not change following the EFA, the results of the model are the same and can be seen in Table 12. In addition, the model explained 52% of variance, with high loading factors (.318 to 1.00) and communalities (.258 to .976), low cross-loadings (.01 to .285) and low to moderate correlations between factors (.451 to .691). The model is reflected in diagrammatic form in Figure 4.



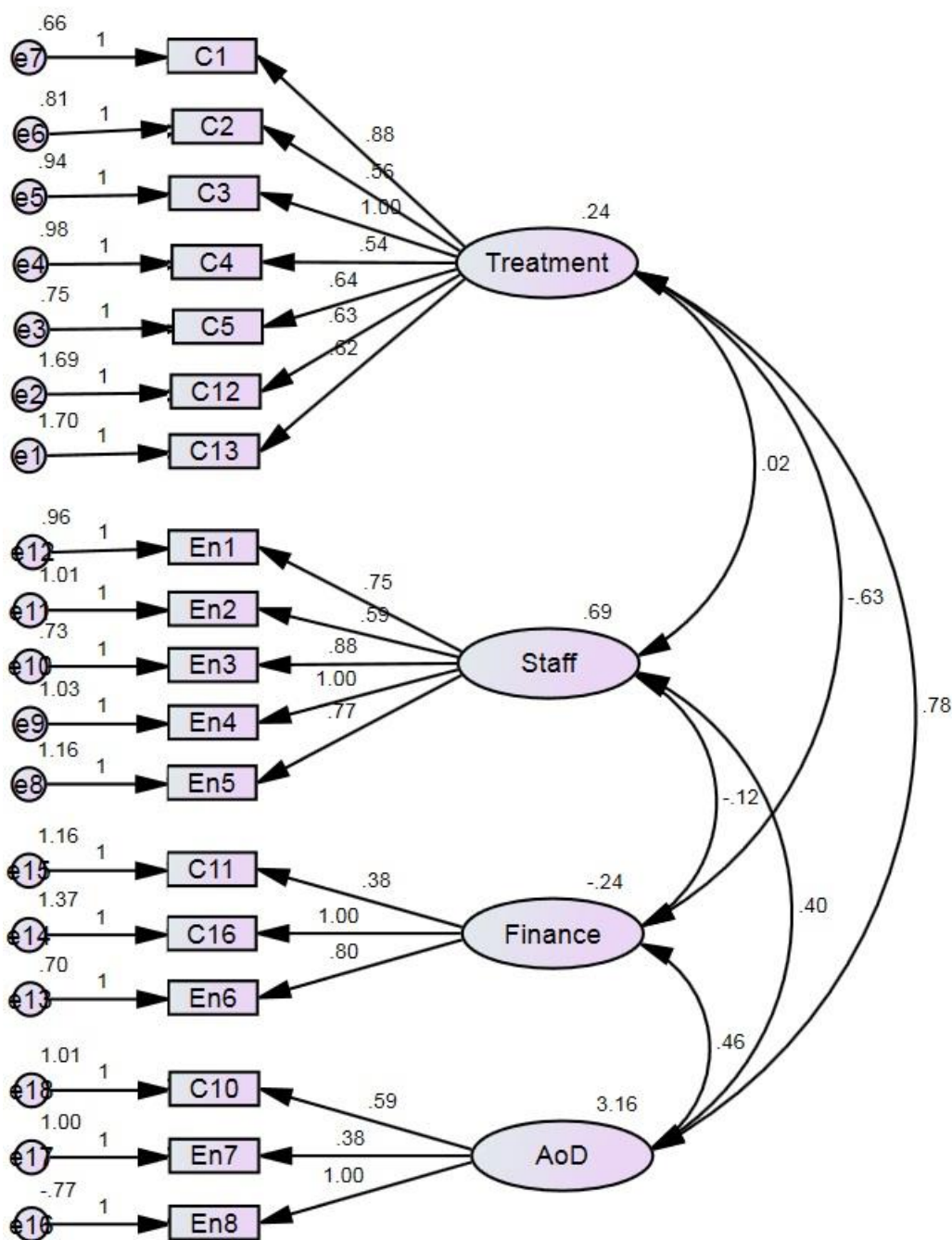


Figure 4. Best fitting ARMIDILO-G model with factor loadings using composite scores.

Like the EFA, the factor structure of the best fitting ARMIDILO-G model using composite scores did not reflect the four sub-domains described in the ARMIDILO-G. This model was similar, but not exactly the same as the four factor item based model identified through the EFA. Factors that appeared to underlay responses on the ARMIDILO-G could be

grouped as: *treatment and lifestyle*, *qualities of support staff*, *finance and impulsivity*, and *drug and alcohol use*. The low to moderate correlation coefficients combined with the moderate to high internal consistency within factors reported in Table 12 provide evidence of adequate internal reliability and discriminant validity of the four factors.

## **Discussion**

The aim of this chapter was to explore the factor structure of the ARMIDILO-G and in particular examine the extent risk and protective items fall on one or two separate continuums. In conclusion, improved fit indices for models based on ARMIDILO-G composites, as opposed to items, provides evidence that risk and protective factors of the ARMIDILO-G are best seen as reflecting opposite ends of one continuum, rather than as separate constructs. The evidence, however, is not clear cut, with the item based model separating out risk and protective items on two of four factors, with the *lifestyle* factor identifying protective lifestyle items, whilst the *personality* factor primarily identifying risk items associated with an individual's personality. Furthermore it is possible that the composite model provided evidence of better fit and explained more variance as it relied on less measured variables.

Whether these results reflect the nature of risk and protective factors in the real world, however, is uncertain given data are based on clinician ratings. Instead, it is more accurate to infer that clinicians scoring the ARMIDILO-G potentially do not recognise risk and protective features of clients as separate concepts, and pay attention to the protective features of an assessed individual's lifestyle and risk features of an individual's personality.

The following chapter will provide further analysis of the relationship between risk and protective factors by way of examining their ability to predict risk of recidivism amongst this sample.

## **Chapter 6:**

### **The Predictive Validity of the ARMIDILO-G Compared to Established Risk of Recidivism Measures**

#### **Introduction**

The ARMIDILO-G has been described in the preceding chapters as having strong face and ecological validity, as well as good internal and inter-rater reliability when used to assess offenders with an ID in the community. The tool's construct validity, however, has been questioned, with inconclusive evidence found for the separation of risk and protective variables. Whilst preceding chapters have identified strengths of the ARMIDILO-G, they are meaningless if the tool cannot serve its primary purpose - predict recidivism amongst the assessed population. It was therefore the purpose of this chapter to examine the ability of the ARMIDILO-G and its sub-domains to predict new charges across a broad range of offence types amongst offenders with an ID in a community setting. It was also the aim to assess whether the ARMIDILO-G was able to predict frequency, severity and time to reoffend of this population.

As described in Chapter 3, a number of tools have shown adequate predictive validity in people with an ID who have committed differing offence types (though primarily physical and sexual violence). Subsequently, this chapter also aimed to compare the predictive validity of the ARMIDILO-G against other risk assessment tools. Tools were selected based on either their ability to predict recidivism amongst ID populations (the HCR-20 and PCL-R) or on their ability to predict general recidivism amongst the general offender population - the LSI-R and the Group Risk Assessment Model (GRAM; Smith & Jones, 2008). An additional actuarial tool designed specifically to assess short term risk of violence in those with an ID – the Current Risk of Violence (Lofthouse & Lindsay, 2012) was also used given its recent publication and evidence of

predictive validity for imminent violent recidivism amongst ID offenders (CuRV; Lofthouse & Lindsay, 2014).

## **Method**

### **Participants**

Participants were those described in Chapter 5. Female, juvenile, aboriginal and culturally and linguistically diverse (CALD) sub-groups were additionally examined due to their influence in risk of re-offending (Chen, Matruglio, Weatherburn, & Hua, 2005; Fergusson & Horwood, 2002; Smith & Jones, 2008). Severity of ID, intensity of service, location of service and guardianship status were also examined to explore the influence of variables associated with an ID in predicting risk of reoffending.

Participants' history of charges and percentage of participants with history of offence type at baseline are provided in Table 13 and

Table 14 respectively. Mean number of previous charges at baseline was 16.08 ( $SD = 17.24$ ) with a range of one to 157 charges. The number of previous charges across participants significantly deviated from normality using the Kolmogorov-Smirnov statistic;  $D(126) = .191, p < .001$ . A large number of participants had a small number of previous charges but a small number of participants had over 40 charges ( $n = 7$ ). Subsequently, the Mann-Whitney-U test was used to compare sub-groups on number of previous charges.

Table 13 shows that all sub-groups, with the exclusion of those classified as CALD and categorised by geographical location, showed some significant differences in the number of previous charges for different offences types. As expected, juveniles tended to have fewer offences across offence types due to time to offend.

Participants had, on average, 12.43 ( $SD = 15.80$ ) convictions, equating to a 77.30% conviction rate. Sub-groups did not differ in their rate of conviction, other than those who were under Guardianship Orders and those who received a 'drop-in' service type. Those under a Guardianship Order were significantly less likely to receive a conviction ( $M = .67, SD = .29$ ) than those who were not under a Guardianship Order ( $M = .81, SD = .18$ );  $t(87) = 3.24, p = .002$ . Those who received a 'drop-in' service were significantly more likely to have been convicted ( $M = .79, SD = .20$ ) than those who received other service types from CJP ( $M = .68, SD = .28$ );  $t(84) = -2.35, p = .02$ .

Eighty-eight point four percent of participants who had received convictions prior to baseline had received custodial sentences, averaging of 5.12 (7.16) custodial sentences with a length of 8.61 months ( $SD = 10.23$ ) per sentence. The most common court outcome, however, was a bond or suspended sentence, with 89.3% of participants having been served this type of order. On average, participants had received 3.75 ( $SD = 2.90$ ) bonds/suspended sentences. In order of decreasing frequency, the next most common forms of adjudication for participants were: a fine (59.5%,  $M = 3.03, SD = 8.12$ ), dismissal with recorded conviction (34.7%,  $M = .55, SD = .88$ ), community service order (24%,  $M = .31, SD = .63$ ), and home detention (.8%).

Table 13

*Mean Frequency of Charges Prior to Baseline by Charge Category for all Participants*

<b>Sub-Sample (n)</b>	<b>Total Mean (SD)</b>	<b>Violence Mean (SD)</b>	<b>Sexual Mean (SD)</b>	<b>Theft Mean (SD)</b>	<b>Drug Mean (SD)</b>	<b>Property Mean (SD)</b>	<b>Public Order Mean (SD)</b>	<b>Vehicle Mean (SD)</b>	<b>Justice Mean (SD)</b>	<b>Miscell. Mean (SD)</b>
<b>All (126)</b>	<b>16.08 (17.24)</b>	<b>3.63 (4.02)</b>	<b>.60 (1.08)</b>	<b>4.84 (6.16)</b>	<b>.54 (1.14)</b>	<b>1.13 (1.92)</b>	<b>2.31 (6.41)</b>	<b>.66 (1.38)</b>	<b>2.23 (2.92)</b>	<b>.13 (.67)</b>
Juveniles (26)	9.92 (4.92)*	2.15 (2.26)*	.27 (.53)	4.46 (3.44)	.11 (.33)*	.69 (.84)	.77 (.91)*	.27 (.67)	1.20 (1.02)	0.00 (.00)
Females (8)	18.63 (14.99)	6.13 (3.40)*	0.00 (.00)*	5.38 (10.18)	.38 (.74)	1.63 (1.19)	1.88 (2.10)	0.00 (.00)	3.13 (4.52)	.13 (.35)
Aboriginal (48)	16.15 (10.09)	4.25 (3.16)**	.54 (1.29)	5.44 (5.98)	.38 (.76)	1.06 (1.31)	1.73 (1.88)	.48 (.97)	2.13 (2.73)	.15 (.62)
CALD (8)	18.63 (12.86)	5.75 (4.83)	.38 (.52)	3.88 (4.36)	.25 (.46)	1.25 (1.67)	2.50 (4.07)	1.00 (1.77)	3.63 (3.70)	0 (.00)
Guardianship (56)	15.43 (22.33)*	3.43 (4.19)	.82 (1.39)	4.34 (6.76)*	.46 (.93)	1.25 (2.44)	2.80 (9.25)	.38 (1.07)*	1.88 (3.06)*	.07 (.26)
ID										
Mod (18)	13.44 (12.25)	2.78 (3.54)	.33 (.69)	4.50 (4.66)	.33 (.77)	.94 (1.83)	2.44 (4.87)	.17 (.51)	1.94 (1.63)	0 (.00)
Mil-Mod (26)	14.50 (14.04)	2.58 (2.61)	.58 (.90)	4.73 (5.39)	.81 (1.67)	1.00 (1.65)	2.04 (3.18)	1.04 (1.73)	1.69 (2.13)	.04 (.20)
Mild (62)	18.65 (20.69)*	4.45 (3.94)***	.71 (1.29)	5.21 (6.44)	.55 (1.05)	1.35 (2.23)*	2.61 (8.51)	.77 (1.50)	2.76 (3.69)	.23 (.93)
Bord-Mil (20)	12.55 (11.95)	3.25 (5.65)	.55 (.89)	4.15 (7.62)	.35 (.75)	.80 (1.24)	1.60 (1.64)	.25 (.72)	1.55 (1.57)	.05 (.22)
Service										
DIS (75)	15.32 (10.05)	3.31 (2.89)	.39 (.61)*	4.95 (4.47)**	.45 (1.07)	1.05 (1.25)	1.71 (1.95)	.93 (1.60)**	2.40 (2.72)	.13 (.72)
SSL (30)	19.87 (29.71)	4.17 (5.95)	.77 (1.04)	5.70 (8.74)	.90 (1.47)	1.57 (3.26)	4.40 (12.47)	.33 (.96)	1.87 (3.17)	.17 (.75)
IRS (17)	13.82 (14.16)	3.76 (4.35)	1.41 (2.09)*	3.18 (7.20)*	.41 (.71)	.82 (1.38)	1.53 (3.22)	.18 (.73)	2.47 (3.64)	.06 (.24)
Institut. (4)	11.50 (8.74)	5.25 (3.95)	.00 (.00)	3.50 (7.00)	.00 (.00)	.75 (.96)	1.25 (1.50)	.00 (.00)	.75 (.96)	.00 (.00)
Location										
Metro (70)	18.14 (21.00)	3.63 (4.00)	.49 (.79)	5.33 (6.61)	.70 (1.36)	1.33 (2.36)	3.10 (8.41)	.79 (1.52)	2.56 (3.16)	.23 (.89)
Rural (42)	14.29 (11.63)	3.79 (4.39)	.93 (1.49)	4.07 (6.01)	.43 (.83)	.95 (1.27)	1.41 (1.89)	.64 (1.32)	2.07 (2.87)	.00 (.00)
Remote (10)	11.00 (4.40)	2.40 (2.46)	.30 (.68)	5.20 (2.53)	.10 (.32)	.70 (.82)	1.00 (1.05)	.10 (.32)	1.20 (1.23)	.00 (.00)

Note. Groups compared using Mann Whitney-U statistic. Misc. = Miscellaneous; Mod = Moderate ID; Mil-Mod = Mild-Moderate ID; Bord-Mil. = Borderline-Mild ID; Institut. = Institutional.

\*p < 0.05. \*\* p < 0.01. \*\*\* p < 0.001.

Table 14

*Percentage of Participants Charged with Various Offence Types Prior to Baseline*

	<b>Violence</b>	<b>Sexual</b>	<b>Theft</b>	<b>Drug</b>	<b>Property</b>	<b>Public order</b>	<b>Vehicle</b>	<b>Justice</b>	<b>Miscell.</b>
<b>All Participants</b>	<b>80.2</b>	<b>37.3</b>	<b>79.4</b>	<b>27.8</b>	<b>51.6</b>	<b>58.7</b>	<b>24.6</b>	<b>73.8</b>	<b>6.3</b>
Juveniles	73.1	23.1	88.5	11.5*	50	50	15.4	73.1	0
Females	100	0*	62.5	25	75	62.5	0	87.5	12.5
Aboriginal	91.7**	29.2	79.2	25	52.1	68.8*	25	79.2	8.3
CALD	87.5	37.5	87.5	25	62.5	50	37.5	100	0
Guardianship ID	80.4	44.6	71.4*	26.8	51.8	51.8	16.1*	66.1	7.1
Moderate	72.2	22.2	88.9	22.2	33.3	50	11.1	88.9	0
Mild-Mod	84.6	42.3	73.1	26.9	42.3	57.7	34.6	61.5	3.8
Mild	85.5	40.3	79	30.6	64.5**	61.3	27.4	72.6	9.7
Bord-Mild	65	35	80	25	40	60	15	80	5
Service									
DIS	82.7	32	86.7**	24	56	62.7	34.7***	80*	6.7
SSL	76.7	46.7	80	40	46.7	66.7	13.3	70	6.7
IRS	70.6	52.9	58.8*	29.4	41.2	29.4**	5.9*	58.8	5.9
Institution	100	0	25*	0	50	50	0	50	0
Location									
Metro	78.6	35.7	85.7*	32.9	54.3	67.1*	28.6	81.4*	11.4**
Rural	81	47.6	69*	26.2	47.6	45.2*	23.8	64.3	0*
Remote	80	20	100	10	50	60	10	70	0

Note. Tests are  $\chi^2$  tests, where  $df = 1$ , corrected for unequal variances as necessary.  $n$  as above for Table 13. Misc. = Miscellaneous; Mod = Moderate ID; Mil-Mod = Mild-Moderate ID; Bord-Mil. = Borderline-Mild IQ.

\* $p < 0.05$ . \*\* $p < 0.01$ . \*\*\* $p < 0.001$ .

## **Materials**

***ARMIDILO-G.*** The ARMIDILO-G was described in both Chapter 4 and 5 and was scored using actuarial and SPJ approaches. Participants were rated as *low*, *medium* or *high* risk on the ARMIDILO-G when using a SPJ methodology. Categories were assigned based on review of item scores and information collected relating to each item (based on interview, case notes and file review). Categorisation according to SPJ methodology was completed by the author upon receipt of the ARMIDILO-G from the assessing clinician, following scoring of items and before administration of the other assessment tools.

***Historical Clinical Risk Management – 20 (2<sup>nd</sup> Edition; HCR-20).*** The HCR-20 (Webster et al., 1997) is a SPJ risk assessment tool designed to assess risk of physical violence in adults with a history of aggression (Appendix E). The tool has demonstrated strong validity and reliability in non-ID populations, such as offenders in custody and the community, and forensic and civil psychiatric patients (Douglas, Guy, & Weir, 2006; Singh et al., 2011). As described in Chapter 3, the HCR-20 has also been the most frequently evaluated offender risk assessment tool with those with an ID who have offended and has demonstrated predictive validity to a level consistent with findings in general offender populations. Developed as an aide memoire for considering risk of violence, the HCR-20 comprises 20 empirically derived risk items that fall within historical, clinical and risk management domains. Like the ARMIDILO-G, items are rated as: *yes*, *maybe* or *no* with the overall risk rating of *low*, *medium*, or *high* derived according to a SPJ approach.

The ID supplement developed by Boer et al. (2010b) was used in addition to the HCR-20. The supplement provides additional information on HCR-20 items and how these factors may present in those with an ID or what risk might look like in this population. This supplement, in combination with the HCR-20 has demonstrated excellent predictive validity amongst ID



offenders for general offences (AUC = .97) and good predictive validity for violent offences (AUC = .80) over two year follow-up, as well as adequate inter-rater reliability (ICC = .65) (Verbrugge et al., 2011).

***Psychopathy Checklist Revised (PCL-R).*** The PCL-R (Hare, 1991) is a twenty-item informant-rated diagnostic instrument designed to identify potential psychopathic personality patterns in adults, regardless of legal status or history (Appendix F). The structure is based on Cleckley's (1941) description of the prototypical psychopath. The PCL-R has been frequently used as an offender risk assessment tool owing to the association between psychopathy and offending (Hart, 1998). The PCL-R has also been associated with offender risk assessment given tools such as the HCR-20 consider psychopathy as a risk factor and rely on PCL-R for coding its presence. Items are scored on a three-point scale from 0 to 2, producing a total score ranging from 0 to 40.

Two, three and four factor models reflecting facets of anti-social lifestyle, criminal behaviour, emotional deficits and inter-personal deficits have been proposed as structures underlying the PCL-R. This study adopted the four-factor model despite recent evidence for a three factor model in an ID offender sample (Morrissey et al., 2010) given it provides the broadest number of potential factors to examine. PCL-R items were divided between factors related to: 1) *deceitful interpersonal style*; 2) *deficient affective experience*; 3) *antisocial lifestyle* and 4) *irresponsible behaviour style* as described by Hare (1991).

The PCL-R was selected as the HCR-20 necessitates it to rate the presence of psychopathy, as well as previous research indicating the PCL-R had adequate predictive validity in samples of people with an ID who have offended for both general and violent offending (Morrissey et al., 2007a; Morrissey et al., 2005; Verbrugge et al., 2011). Previous studies have

also reported good inter-rater reliability when used in ID samples (ICC = .89) (Morrissey et al., 2005).

***Level of Service Inventory – Revised (LSI-R).*** The LSI-R (Andrews & Bonta, 2001) is a 54 item, clinically adjusted actuarial offender risk assessment tool, designed to assess risk of general recidivism of offenders who have previously committed any offence (Appendix G). Items are scored either as a *yes* or *no*, or along a scale between 0 and 3 depending on the specific item, resulting in total scores ranging between 0 and 54. The total score is then compared to those from the norming sample to produce a likelihood of recidivism estimate for a one-year period. The LSI-R and related tools have been described as the “...most frequently used risk assessment tools on the planet” (Olver et al., 2014, p. 156). Based on the PIC-R theory, it: examines all central eight criminogenic needs, includes both static and dynamic factors, and estimates risk of general recidivism. The tool also provides for a clinical override to allow adjustment of risk based on unique individual factors. The clinical override, however, was not utilised in this study owing to the interest in the actuarial outcome of the tool and in acknowledgement of the potential confound of the clinical override with the SPJ approach on the ARMIDILO-G. A recent meta-analysis by Olver et al. (2014) based on 128 studies and 137,931 offenders found the LSI-R demonstrated good reliability and predictive validity across jurisdictions, genders and ethnicity. To date, the LSI-R has not been validated amongst offenders with an ID. It is possible, however, that those with an ID were in norming samples, though this cannot be substantiated.

The LSI-R was chosen for use given its predominance in assessing general risk of recidivism and also on the basis that it is the primary risk assessment tool used within NSW Corrective Services, to inform decisions regarding release, security, intensity of service and priority for intervention.

**Group Risk Assessment Model (GRAM).** The GRAM (Smith & Jones, 2008) is an actuarial offender risk assessment tool designed to estimate risk of general recidivism of offenders in NSW over a two year period. The GRAM consists of four static, weighted items: gender, age, number of offences in the past five years and aboriginal heritage. Items were selected from all available crime and demographic data available to the NSW Bureau of Crime Statistics and Research for adults and children who were convicted of an offence in 2002. Items represented the strongest correlation with recidivism at two years follow-up for the cohort. Scores on each item affect the risk estimate separately as each item has a different weight in the overall prediction. Scores are entered into a Microsoft Excel template, producing a percentage chance of recidivism for a two-year period, based on characteristics of the norming sample. Smith and Jones (2008) found the GRAM, using ten probability bins, demonstrated good predictive validity using the Hosmer-Lemeshow test statistic for children, when comparing estimated to actual recidivism rates for the years 2003 and 2004 ( $\chi^2 = 7.50, df = 8, p = 0.484$ ). A significant difference was shown, however, between actual versus estimated rates of recidivism amongst adults ( $\chi^2 = 25.37, df = 8, p = 0.0013$ ). Significance was argued to be a result of the sensitivity of the test to large samples and base and ceiling effects in the highest and lowest probability bins.

The GRAM was selected given it has been normed on offenders in NSW and because it is a static actuarial tool, allowing for a comparison between SPJ and actuarial, as well as dynamic and static approaches to risk assessment.

The item *number of charges in the past five years* was measured using participant history of offending within reports available at time of assessment as finalised official records could not be obtained. Scoring this item based on file information may have reduced reliability, as

information contained in these reports could not be corroborated at time of assessment and were not official criminal records. Aboriginality was based on self-report and file information.

***Current Risk of Violence (CuRV).*** The CuRV (Lofthouse & Lindsay, 2012) is a short-term actuarial risk assessment tool recently developed to assess risk of physical violence amongst people over the age of 18 years who have a mild to borderline ID and history of violence (Appendix H). Unlike the other measures reported herein, it was not developed specifically for those who have been in contact with the criminal justice system. The CuRV consists of 34 items that incorporate client and environmental risk factors and are scored either as a *yes* or *no*, with total scores ranging from 0 to 34. The tool examines risk related information from the previous month to make predictions about the subsequent month (although this study used information from the preceding three months). Albeit not described as either an actuarial or SPJ tool, the cumulative structure and scoring system suggests an actuarial approach. Lofthouse and Lindsay (2014) examined the predictive validity of the CuRV with 64 males with a mild or borderline ID who were in supported accommodation and had a history of aggression. Adequate inter-rater reliability was reported (Cohen's Kappa = .73). Predictive validity was assessed for each month for five months, with AUCs for scores for each month ranging between .72, 95% CI [.59, .85] to .77, 95% CI [.66, .89].

The CuRV was selected for use given: its actuarial approach, specific design for those with an ID, and its targeting of short-term risk. Whilst the tool was developed to assess risk for physical violence, the predictive accuracy of the HCR-20 for general recidivism amongst those with an ID (e.g., Verbrugge et al., 2011) provides support for the CuRV's potential to predict short-term risk of general recidivism in a manner consistent with the aims of the AMRIDILO-G.

***Recidivism Data.*** Charge, conviction and incarceration data were obtained from the NSWs Bureau of Crime Statistics and Research's Re-Offending Database (ROD). ROD collates

all NSW Court, Corrective Services, Juvenile Justice and Police offence related data. It should be noted that this database only records charges and finalised matters that occurred in NSW. It is therefore possible that additional charges, convictions and incarceration periods were omitted for participants who committed offences outside NSW. It was anticipated, however, that no participants were charged or convicted in other states during the study. It is also possible that very serious new charges were not recorded due to long processing times for these offences. A conviction was any offence in ROD recorded as “guilty with conviction” or “guilty without conviction” to ensure guilt for the offence was the primary criterion.

Recidivism data were obtained in a de-identified format following submission of risk assessment and demographic data with a linkage key to the NSW Bureau of Crime Statistics and Research. This meant assessors were completely blind to recidivism outcome during the assessment period.

### **Procedure**

***Risk Assessments.*** The ARMIDILO-G was conducted prospectively, as described in Chapter 4. The author, who is the senior psychologist of the service, administered the other five risk assessment tools according to user manual specifications. The author has over ten years’ experience in the administration of offender risk assessment for people with an ID and had previously received two day training courses on the HCR-20 and PCL-R from internationally recognised trainers and a one day course on the LSI-R from registered trainers within NSW Corrective Services.

Comparison risk assessment tools were conducted after the administration and scoring of the ARMIDILO-G. The HCR-20 was scored using an actuarial rather than an SPJ approach given that it was impossible to discount the SPJ findings of the ARMIDILO-G when determining the risk category of the HCR-20. Assessment scores were based on information obtained from

the ARMIDILO-G, as well as assessment reports, progress notes and interviews with staff. Only information that was available on the date the ARMIDILO-G was conducted was considered in the assessment. No additional interviews were conducted with participants to gain additional information for specific tools. Data from additional risk assessment tools were not shared with treating clinicians.

***Recidivism.*** Recidivism was measured as a formal charge three and six months post ARMIDILO-G administration, as reported by a charge date in ROD, based on NSW Police Force data collected up until 31<sup>st</sup> December 2013. Charge was chosen over conviction as charge is more closely related to the behaviour, the primary interest of the research, and is less influenced by legal processes (such as the downgrading of an offence through bargaining). Furthermore, previous analyses showed there was minimal difference between the ratios of charge to conviction between sub-groups. Three months was chosen, as it is the recommended time for re-evaluation using the ARMIDILO tools and allows for sufficient time for recommendations to be implemented and evaluated. Six months was also chosen as this allowed for a sufficient number of participants to be evaluated to ensure adequate power given that 111 (91.6% of total) participants had an ARMIDILO-G completed three months and 99 (82.4% of total) participants had one completed six months prior to 31<sup>st</sup> December 2013 (the date at which offences were extracted from ROD). Recidivism was acknowledged where a date of charge in the ROD was within six months following the date of administration of the ARMIDILO-G.

Offences were categorised according to the *Australian Standard Offence Classification* (ASOC) 2008 (Australian Bureau of Statistics, 2008) as recorded in ROD. ASOC categories of: *homicide; acts intended to cause injury; dangerous or negligent acts endangering persons; abduction, harassment and other offences against the person; and weapons offences* were classified under the category of *violent offences*. Categories of: *robbery, extortion and related*

*offences; unlawful entry with intent/burglary, break and enter; and theft and related offences* were categorised under the category of *theft offences*. Categories of *fraud, deception and related offences* and *offences against government procedures, government security and government operations* were excluded as no participants were recorded as committing these offences. *Miscellaneous offences* are those pertaining to breaches of statutory rules or regulations and include activities such as: *defamation, libel, public health and safety offences*, and *commercial regulation offences*.

Frequency of offending was determined as number of charges divided by the number of days the participant was not incarcerated during the follow-up period. Frequency was measured this way to ensure no bias for those participants who received longer or shorter custodial sentences during follow up. The period between 12<sup>th</sup> May 2012 and 12<sup>th</sup> November 2012 was used as the follow up period for those who did not have an ARMIDILO-G completed, as the 12<sup>th</sup> May 2012 was on average, the date the ARMIDILO-G was completed.

Conviction with a custodial sentence, as recorded in ROD, was used as a measure of serious offence. This outcome was chosen given custodial sentences tend to be for more serious offences.

***Binning Strategies.*** The outcomes of offender risk assessments are frequently described in categorical terms – with an offender often being reported to display a *low, medium* or *high* risk of reoffending. Scores on tools were categorised by two methods, either according to pre-defined rules (e.g., by authors of the tools or by established cut-offs), or proportional cut-offs (e.g. dividing the tool into equal thirds).

The ARMIDILO-G total and sub-domains, HCR-20 total and sub-domains, PCL-R facets and CuRV total scores were all categorised as *low, medium* and *high* based on actuarial processes, such that the lowest 33% of possible scores were classified as low, the middle 33% of

possible scores as *medium* and highest 33% of possible scores classified as *high* risk. The ARMIDILO-G was also categorised into *low*, *medium* and *high*-risk bands based on the SPJ approach and informed by items across all four sub-domains.

The LSI-R was categorised according to cut-offs provided in the user manual (Andrews & Bonta, 2001), with scores between 0-23 as *low to moderate* risk, 24-33 as *moderate* risk and 34 – 54 as *medium to high* risk.

The PCL-R total was categorised into high and low scores. A cut-off of 30 was used given it is commonly used as the diagnostic cut-off for a psychopathy diagnosis (Salekin, Rogers, & Sewell, 1996), such that scores between 0 - 29 were classified as *low risk* and between 30 - 40 as *high risk*.

GRAM scores were allocated to *low*, *medium* and *high* categories of risk, based on distribution of scores, with the lowest scoring 33% of participants rated *low*, the highest 33% *high* and all others *medium* risk. This method was used given a score on the GRAM corresponds to the probability of reoffending and thus unlikely to assume a normal distribution.

The scores of the ARMIDILO-G, GRAM, HCR-20, PCL-R, LSI-R and CuRV were then re-categorised to assist analyses examining the sensitivity and specificity of tools so they could be assessed for their ability to identify those who were and were not likely to reoffend. There was no need to re-categorise the PCL-R total score as risk ratings were already dichotomous. Re-categorisation occurred using methodology as recommended by Singh et al. (2011). That is, scores were re-categorised into *high* versus *not high* risk and *low* versus *not low* risk by pooling either: medium and low risk (reflecting the *not high* category), or medium and high risk (reflecting the *not low* category) categories.

**Analyses.** Total and sub-domain scores for each risk assessment tool were compared across participant sub-groups described in Chapter 5. Sub-group comparisons were conducted to



determine whether there were any features of the participants or their service environment that may have confounded risk assessment findings. Parametric (*t*-tests) and non-parametric (Mann-Whitney *U*) analyses were used dependent on whether tool total scores reflected a normal distribution across participants.

The Area Under the Curve (AUC) of the Receiver Operating Characteristic (ROC) curve was used to determine each tool's ability to accurately predict recidivism (sensitivity) and non-recidivism (specificity) based on item scores and the ARMIDILO-G SPJ category. This statistic was used given its long standing recognition as the gold standard analysis for predictive validity in the field of risk assessment (Rice & Harris, 1995) and that it is not sensitive to base rates.

Diagnostic Odds Ratios (DOR) were also used to explore the ability of tools to accurately identify high risk and low risk offenders. The DOR is the ratio of the odds of a true positive result for the offender reoffending relative to the odds of a false positive finding of the offender reoffending. Like the AUC, the DOR provides a base-rate resistant measure of predictive validity. Unlike the AUC, the DOR permits comparison between measures and arguably has greater real world application, as it discriminates between groups (e.g., high versus low risk groups), which is a common use for risk assessment tools. It has also been recommended that multiple discrimination indices be used when examining the predictive validity of risk assessment tools given the limitations of the various methods (Singh et al., 2013).

Kaplan-Meier survival curves were also conducted on all tools to determine the ability of risk assessment tools to predict time to reoffend, i.e., their ability to predict imminence of risk. The Kaplan-Meier estimator plots the survival function for a group using a series of horizontal steps of declining magnitude. Curves were conducted on each tool, comparing risk categories defined above and examining days to first re-offence following ARMIDILO-G administration. The generalised Wilcoxon, Kaplan-Cox and Tarone Ware test statistics were examined. The

generalised Wilcoxon statistic is reported unless specified, as it examines the difference between curves across their spectrum and is not biased towards the start or end of the survival curve, unlike the other two statistics.

An alpha level of .05 was used for all statistical tests. A power analysis according to MedCalc indicated 57 participants were necessary for a medium effect size.

## Results

### Descriptive Statistics

**Recidivism.** One hundred and eleven (88.1%) of the 136 participants had three months and 99 (78.6%) of the 126 participants had six months of follow-up recidivism data. There was little difference between sub-groups in whether they had three and six months follow-up data, with only those under guardianship ( $\chi^2 = 4.77, p = .02$ ) and those in metropolitan services ( $\chi^2 = 4.77, p = .02$ ) more likely to have six months of follow-up and those in rural services less likely to have six months follow-up ( $\chi^2 = 7.64, p < .01$ ).

Eighteen (16.22%) participants were charged with offences by three months follow-up and 28 (28.28%) were charged by six months. Of sub-groups, only juveniles were more likely to have offended by six months ( $\chi^2 = 11.99, p < .001$ ). On average, participants who had been charged were charged with 1.22 ( $SD = .43$ ) offences at three and 1.54 ( $SD = .64$ ) offences at six months follow-up. No sub-group were significantly more likely to have had a greater number of offences. Mean number of days to reoffend was 76.43 ( $SD = 43.47$ ) for those with three months and 78.33 ( $SD = 43.09$ ) for those with six months follow-up. Of participants who received a violent charge during follow up: six had one charge, one had two charges, and one had three charges. Two participants had two charges for theft related offences and 13 had a single theft charge. Meanwhile, one participant had two public order charges and two had one public order

charge. No participants were charged with sex or vehicle offences, whilst all other categories of offending had participants charged with a maximum of one such offence during the follow-up period. The number of participants charged with the various offence types at three and six months are reported in Table 15 and Table 16 respectively.

Analysis of scores and residuals using box plots and Mahalanobis distance for all risk assessment scores indicated the assumption of homoscedasticity was met for total scores for all but the GRAM and there was no evidence of outliers or significant skew or kurtosis. Subsequently, *t*-tests were used to compare differences on total scores between sub-groups for all tools except the GRAM.

Table 15

*Number of Participants Charged by Offence Type during Three Month Follow-Up*

<b>Sub-Group (n)</b>	<b>Any</b>	<b>Violence</b>	<b>Sexual</b>	<b>Theft</b>	<b>Drug</b>	<b>Property</b>	<b>Public order</b>	<b>Vehicle</b>	<b>Justice</b>	<b>Miscell.</b>
	<i>n</i> (%)	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>
<b>All (111)</b>	<b>18 (16.2)</b>	<b>8</b>	<b>0</b>	<b>7</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>
Juveniles (24)	<b>6 (25.0)</b>	2	0	3	0	0	0	0	1	0
Females (8)	<b>3 (37.5)</b>	1	0	2*	0	0	1*	0	0	0
Aboriginal (41)	<b>9 (22.0)</b>	4	0	4	1	0	1	0	1	0
CALD (7)	<b>1 (14.3)</b>	1	0	0	0	0	0	0	0	0
Guardianship (51)	<b>7 (13.7)</b>	2	0	4	1	0	0	0	0	0
ID										
Mod (15)	<b>2 (13.3)</b>	0	0	1	1**	0	0	0	0	0
Mil-Mod (24)	<b>3 (12.5)</b>	2	0	1	0	0	0	0	1	0
Mild (55)	<b>8 (14.5)</b>	3	0	4	0	0	1	0	1	0
Bord-Mil (17)	<b>5 (29.4)</b>	3	0	1	0	1*	1	0	0	0
Service										
DIS (68)	<b>13 (19.1)</b>	6	0	5	1	0	2	0	2	0
SSL (24)	<b>4 (16.7)</b>	2	0	1	0	1	0	0	0	0
IRS (15)	<b>1 (6.6)</b>	0	0	1	0	0	0	0	0	0
Institut. (4)	<b>0 (0)</b>	0	0	0	0	0	0	0	0	0
Location										
Metro (64)	<b>11 (17.2)</b>	5	0	4	1	1	1	0	1	0
Rural (33)	<b>4 (12.1)</b>	2	0	2	0	0	1	0	0	0
Remote (10)	<b>3 (30.0)</b>	1	0	1	0	0	0	0	1*	0

Note. Tests are  $\chi^2$  tests, where  $df=1$ , corrected for unequal variances as necessary. Misc. = Miscellaneous; Mod = Moderate ID; Mil-Mod = Mild-Moderate ID; Bord-Mil. = Borderline-Mild IQ.

\* $p < 0.05$ . \*\*  $p < 0.01$ . \*\*\*  $p < 0.001$ .

Table 16

*Number of Participants Charged by Offence Type during Six Month Follow-Up*

	<b>Any</b>	<b>Violence</b>	<b>Sexual</b>	<b>Theft</b>	<b>Drug</b>	<b>Property</b>	<b>Public order</b>	<b>Vehicle</b>	<b>Justice</b>	<b>Miscell.</b>
	<i>n</i> (%)	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>
<b>All (99)</b>	<b>28 (28.3)</b>	<b>10</b>	<b>0</b>	<b>15</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>1</b>
Juveniles (21)	<b>12 (57.1)***</b>	4	0	7**	1	0	1	0	2	1*
Females (8)	<b>4 (50.0)</b>	1	0	3	0	0	1	0	1	0
Aboriginal (35)	<b>13 (37.1)</b>	5	0	8	1	0	2	0	2	0
CALD (6)	<b>3 (50)</b>	2	0	1	0	0	0	0	0	1***
Guardianship (49)	<b>11 (22.4)</b>	3	0	7	2	0	0	0	1	1
ID										
Mod (12)	<b>3 (25)</b>	1	0	2	1	0	0	0	0	0
Mil-Mod (23)	<b>5 (21.7)</b>	2	0	3	0	0	1	0	2	0
Mild (48)	<b>14 (29.2)</b>	4	0	7	1	0	1	0	2	1
Bord-Mil (16)	<b>6 (37.5)</b>	3	0	3	0	1*	1	0	1	0
Service										
DIS (57)	<b>20 (35.1)</b>	8	0	9	2	0	3	0	4	0
SSL (24)	<b>5 (20.8)</b>	2	0	3	0	1	0	0	1	0
IRS (14)	<b>2 (14.3)</b>	0	0	2	0	0	0	0	0	0
Institut. (4)	<b>1 (25)</b>	0	0	1	0	0	0	0	0	1***
Location										
Metro (60)	<b>15 (25)</b>	6	0	7	2	1	1	0	3	0
Rural (27)	<b>7 (25.9)</b>	2	0	4	0	0	1	0	1	0
Remote (8)	<b>5 (62.5)*</b>	2	0	3	0	0	1	0	1	0

Note. Tests are  $\chi^2$  tests, where  $df=1$ , corrected for unequal variances as necessary. Misc. = Miscellaneous; Mod = Moderate ID; Mil-Mod = Mild-Moderate ID; Bord-Mil. = Borderline-Mild IQ.

\* $p < 0.05$ . \*\* $p < 0.01$ . \*\*\* $p < 0.001$ .

**ARMIDILO-G.** Roughly equal numbers of participants scored in the categories of low (34.1%), medium (34.1%) and high risk (31.7%) on the ARMIDILO-G using an SPJ approach. Only juvenile participants significantly differed in distribution of risk categorisation compared to adults, with over-representation in the higher risk (juvenile = 53.8%; adult = 26.0%) and under-representation in the low risk categories (juvenile = 11.5%; adult = 40.0%);  $\chi^2 = 9.94$ ,  $df = 2$ ,  $p = .007$ .

Inter-rater reliability of the ARMIDILO-G using an SPJ approach was assessed with the intraclass correlation co-efficient (ICC) using a two-way random effects model for averaged ratings by way of a second rater (RM) independently assessing the risk category of eleven participants (10%). This model was selected because raters were consistent across cases. Inter-rater reliability was high according to criteria established by Cicchetti and Sparrow (1981), with  $ICC_2$  (equivalent to  $\kappa_w$ ) above .90;  $ICC_1 = .91$  (CI = .70 - .97) and  $ICC_2 = .95$  (CI = .82 - .99).

Table 17 and Table 18 present the distribution ( $M$ ,  $SD$ ) along with tests of significant difference for sub-groups of ARMIDILO-G total and sub-domain ratings using an actuarial approach for three ( $n = 111$ ) and six ( $n = 99$ ) month follow-up cohorts. The range of scores did not differ and there was no significant difference in mean scores for ARMIDILO-G sub-domains compared to those from the larger sample reported in Chapter 5. Total scores for both cohorts ranged from -41 to 46 out of a possible range of -52 to 52 (with -52 suggesting high protection and low risk of offending);  $M_{three} = 5.03$ ,  $SD_{three} = 22.64$ ,  $M_{six} = 3.70$ ,  $SD_{six} = 22.80$ . In the three month cohort, Aboriginal and juvenile participants were more likely to have higher scores and those residing in IRS and with a mild-borderline ID were more likely to have lower scores. Whereas in the six month cohort, only Aboriginal participants had significantly higher and those

in IRS significantly lower scores. This difference, however, may be owing to the smaller sample sizes rather than the length of time to offend.

Juveniles had significantly higher risk and lower protection scores compared to adults on all sub-domains of the ARMIDILO-G for both cohorts. This was consistent with many of the risk assessment tools under investigation. Also consistent with other tools was that Aboriginal participants and those with a mild ID scored significantly higher on the *client risk* sub-domain. In addition, those with mild ID also had significantly lower *client protective* scores. This was somewhat of a surprise given that the higher level of cognition was anticipated to mean greater access to potential protective factors such as education and employment. An unexpected finding was that those with a mild-borderline ID did not reflect similar score profiles to those with a mild ID, with mild-borderline ID participants reporting significantly higher *client protective* scores and lower *client risk* scores (albeit not statistically significant) compared to other levels of ID. Those with a borderline-mild ID also had significantly higher *environment protective* scores in the three-month cohort and higher, but not statistically significant scores in the six month follow-up cohort. This raises a question as to the effect of level of ID has on risk and protective factors, with relatively high or low IQ appearing to promote greater protection from offending.

Service type also significantly impacted on risk and protective scores, with participants in intensive service models (IRS and institutional) scoring significantly lower on *environment risk* and significantly higher on *environment protective* sub-domains in the three-month follow-up cohort. A similar pattern was found for those in the six month cohort, albeit only scores for those in institutions remained statistically significant. The lower risk and higher protective scores were anticipated in more intensive services given these service models are designed to address risk factors and promote protective factors in the environment. Curiously, those in IRS also

demonstrated significantly lower client risk and higher client protective scores compared to those in other service types in both cohorts.

**HCR-20.** Table 19 and Table 20 present the distribution (*M*, *SD*) and analyses of difference for *historical*, *clinical* and *risk management* domains as well as total scores for the HCR-20 for total and sub-groups of participants in three ( $n = 111$ ) and six ( $n = 99$ ) month follow-up cohorts. Participants were placed on average in the *medium* category of risk for both follow up periods based on total scores ( $M_{\text{three}} = 24.96$ ,  $SD_{\text{three}} = 6.82$ ,  $\text{range}_{\text{three}} = 8 - 37$ ;  $M_{\text{six}} = 24.66$ ,  $SD_{\text{six}} = 6.91$ ,  $\text{range}_{\text{six}} = 8 - 37$ ). Both the *clinical* and *risk management* domains took in the full range of scores, with participants scoring between zero and ten. Meanwhile the *history* domain's scores ranged between three and twenty out of a potential of twenty.

Service location, gender, CALD and guardianship status were not related to HCR-20 risk scores in either follow-up cohorts. In both cohorts and consistent with ARMIDILO-G scores, juvenile participants, Aboriginal participants and those with a mild ID had significantly higher total scores, whilst those in IRS models had significantly lower total scores compared to other participants. Meanwhile, female participants in both cohorts had significantly higher scores than males on the historical domain. This provides concurrent validity for the ARMIDILO-G and also reinforces the higher risk of those with a mild level of ID and lower risk associated with intensive accommodation model.



Table 17

*Distribution of ARMIDILO-G Sub-Domain Scores for Participants with 3 Month Follow-Up Recidivism Data*

Sub-Sample	ARMIDILO-G Sub-Domain												ARMIDILO Total		
	Client Risk			Client Protective			Environment Risk			Environment Protective			M	SD	t
	M	SD	t	M	SD	t	M	SD	t	M	SD	t			
Total	21.31	8.46		13.5	8.49		8.23	4.42		11.00	4.17		5.03	22.64	
Juveniles	25.83	5.75	-3.86***	9.33	6.60	3.26**	10.04	3.28	-2.79**	9.42	3.02	2.61**	17.13	15.13	-3.89***
Females	25.00	7.35	1.29	13.38	8.80	-0.05	8.63	5.10	0.265	12.38	3.50	0.97	7.88	22.26	0.37
Aboriginal	24.02	8.34	-2.66**	11.80	8.27	1.63	9.05	4.03	-1.51	10.54	3.74	0.90	10.73	21.69	-2.06*
CALD	21.43	7.25	-0.04	13.14	9.82	0.12	6.29	2.98	1.20	10.71	3.45	0.19	3.86	21.43	0.14
Guardianship ID	20.18	8.25	1.30	14.57	8.61	-1.22	7.94	4.83	0.62	11.20	4.54	-0.46	2.35	23.70	1.15
Moderate	22.07	9.28	-0.37	13.13	8.60	0.18	9.27	4.30	-0.98	10.07	4.06	0.93	8.13	25.22	-0.57
Mild-Mod	19.42	7.82	1.24	15.58	9.23	-1.36	8.71	4.70	-0.60	10.79	4.65	0.28	1.75	24.30	0.80
Mild	22.87	8.28	-1.96*	11.55	7.81	2.46*	8.22	4.35	0.02	10.76	4.20	0.59	8.78	21.19	-1.74
Bord-Mild	18.24	8.53	1.64	17.24	8.27	-1.99*	6.65	4.30	1.61	12.88	3.06	-2.05*	-5.24	20.46	2.06*
Service															
DIS	22.38	8.51	-1.70	12.38	8.46	1.77	8.47	3.96	-0.69 *	10.94	3.60	0.19	7.53	21.57	-1.47
SSL	21.58	7.58	-0.18	12.46	7.02	0.68	9.67	4.98	-1.82	9.21	4.74	2.43*	9.58	22.08	-1.16
IRS	16.00	8.02	2.69**	19.60	8.07	-3.10**	6.00	4.71	2.13*	12.93	4.51	-1.96*	-10.53	22.83	2.96***
Institution	21.25	8.10	0.01	16.00	11.58	-0.60	3.75	1.71	4.87**	15.50	3.00	-2.24*	-6.50	23.42	1.04
Location															
Metro	21.55	7.98	-0.35	12.39	7.55	1.62	8.77	4.31	-1.51	10.44	3.96	1.67	7.48	20.28	-1.29
Rural	19.85	9.65	1.09	15.58	9.26	-1.69	7.64	4.78	0.91	11.42	4.47	-0.70	0.48	26.27	1.26
Remote	24.60	7.40	-1.30	12.80	10.24	0.27	8.50	3.78	-0.21	11.40	4.01	-0.32	8.90	23.58	-0.57

Note. Tests are *t* tests, where *df* = 110, corrected for unequal variances as necessary. *n* as above for Table 15.

\* *p* < .05; \*\**p* < .01; \*\*\**p* < .001

Table 18

*Distribution of Sub-Domain Scores for the ARMIDILO-G for Participants with 6 Month Follow-Up Recidivism Data*

Sub-Sample	ARMIDILO-G Sub-Domain												Total		
	Client Risk			Client Protective			Environment Risk			Environment Protective			M	SD	t
	M	SD	t	M	SD	t	M	SD	t	M	SD	t			
Total	20.88	8.50		14.06	8.55		8.16	4.50		11.28	4.18		3.70	22.80	
Juveniles	26.05	5.83	-4.10***	9.00	6.70	3.67***	10.14	3.47	-2.73**	9.48	3.17	2.28*	17.71	15.47	-4.17***
Females	25.00	7.35	1.44	13.38	8.80	-0.24	8.63	5.10	0.30	12.38	3.50	0.77	7.88	22.26	0.54
Aboriginal	23.34	8.58	-2.17*	12.51	8.40	1.34	8.69	4.15	-0.86	11.00	3.73	0.50	8.51	21.90	-1.57
CALD	19.83	6.46	0.31	15.00	9.32	-0.28	6.17	3.25	1.12	11.50	3.02	-0.13	-0.50	19.79	0.46
Guardianship ID	20.02	8.18	0.99	14.92	8.54	-0.99	7.94	4.71	0.49	11.35	4.51	-0.15	1.69	23.43	0.86
Moderate	21.25	9.78	-0.16	13.58	9.17	0.21	8.92	4.66	-0.62	10.50	4.36	0.69	6.08	26.85	-0.39
Mild-Mod	18.83	7.43	1.33	16.22	8.88	-1.39	8.43	4.61	-0.33	11.09	4.52	0.26	-0.04	23.16	0.90
Mild	22.58	8.42	-1.96*	11.96	7.88	2.43*	8.23	4.58	-0.14	11.00	4.24	0.65	7.85	21.65	-1.78
Bord-Mild	18.44	8.76	1.26	17.63	8.37	-1.84	7.00	4.18	1.13	13.00	3.12	-1.82	-5.19	21.13	1.72
Service															
DIS	21.77	8.63	-1.22	13.30	8.68	1.04	8.33	4.03	-0.44	11.53	3.52	-0.67	5.28	21.91	-0.80
SSL	21.58	7.85	-0.47	12.46	7.02	1.06	9.67	4.98	-1.91	9.21	4.74	2.90**	9.58	22.08	-1.46
IRS	15.93	8.32	2.41*	19.36	8.32	-2.57**	6.14	4.85	1.83	12.64	4.53	-1.32	-9.93	23.57	2.48*
Institution	21.25	8.10	-0.09	16.00	11.58	-0.46	3.75	1.71	4.74**	15.50	3.00	-2.10*	-6.50	23.42	0.91
Location															
Metro	21.30	7.91	-0.59	12.83	7.51	1.70	8.70	4.36	-1.49	10.73	3.91	1.64	6.43	20.16	-1.41
Rural	19.33	10.27	0.98	16.15	9.78	-1.37	7.70	4.99	0.62	11.52	4.73	-0.34	-0.63	28.01	1.01
Remote	22.75	7.11	-0.65	15.25	10.01	-0.41	7.88	3.87	0.19	12.50	3.70	-0.86	2.88	22.50	0.11

Note. Tests are t tests, where df = 98, corrected for unequal variances as necessary. n as above for Table 16.

\*  $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

Table 19

*Distribution of Total and Domain Scores for the HCR-20 for Participants with 3 Month Follow-Up Recidivism Data*

	Historical			Clinical			Risk Management			Total		
	<i>M</i>	<i>SD</i>	<i>t</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>M</i>	<i>SD</i>	<i>t</i>
Total	13.93			5.47	2.31		5.56	2.39		24.96	6.82	
Juveniles	14.96	3.37	-1.62	6.50	1.93	-2.53**	6.63	1.64	-3.18**	28.08	5.52	-2.96**
Females	16.75	1.67	4.43***	6.13	2.03	0.83	5.50	2.33	-0.07	28.38	4.81	0.14
Aboriginal	15.24	2.72	-3.37***	5.93	2.32	-1.61	6.20	2.16	-2.18*	27.37	6.04	-2.95**
CALD	12.29	3.25	1.27	5.86	2.61	-0.46	4.00	2.00	1.80	22.14	6.94	1.13
Guardianship	13.94	3.79	-0.04	5.33	2.37	0.57	5.10	2.35	1.89	24.37	6.92	0.83
ID												
Moderate	13.07	3.71	1.01	5.53	2.90	-0.12	5.73	3.01	-0.30	24.33	7.29	0.38
Mild-Mod	12.88	3.88	1.65	4.79	2.48	1.64	5.29	2.14	0.62	22.96	7.43	1.63
Mild	14.60	3.40	-2.00*	5.96	1.99	-2.28*	5.85	2.19	-1.30	26.42	6.15	-2.28*
Bord-Mild	14.00	3.18	-0.09	4.76	2.22	1.37	4.82	2.77	1.38	23.59	7.15	0.90
Service												
DIS	14.16	3.21	-0.83	5.41	2.43	0.32	5.97	2.29	-2.33*	25.54	6.62	-1.15
SSL	14.58	3.20	-1.02	5.88	2.07	-0.98	5.71	2.44	-0.35	26.17	6.32	-0.98
IRS	11.20	4.74	2.49*	4.80	1.82	1.21	3.93	2.22	2.93**	19.93	7.38	3.19**
Institution	16.25	0.50	-5.63***	6.50	3.11	-0.91	3.75	1.50	1.55	26.50	4.43	-0.46
Location												
Metro	14.06	3.18	-0.45	5.44	2.34	0.16	5.67	2.31	-0.58	25.17	6.26	-0.39
Rural	13.24	4.52	1.14	5.24	2.24	0.67	5.33	2.53	0.64	23.82	8.24	1.14
Remote	14.40	2.55	-0.44	6.00	2.21	-0.76	6.30	2.58	-1.03	26.70	6.07	-0.85

*Note.* Tests are *t* tests, where *df* = 110, corrected for unequal variances as necessary. *n* as above for Table 15

\* *p* < .05; \*\**p* < .01; \*\*\**p* < .001

Table 20

*Distribution of Total and Domain Scores for the HCR-20 for Participants with 6 Month Follow-Up Recidivism Data*

	Historical			Clinical			Risk Management			Total		
	<i>M</i>	<i>SD</i>	<i>t</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>M</i>	<i>SD</i>	<i>t</i>
Total	13.85	3.61		5.33	2.29		5.47	2.44		24.66	6.91	
Juveniles	14.86	3.54	-1.45	6.67	1.98	-3.15**	6.71	1.71	-2.70**	28.24	5.82	-2.77**
Females	16.75	1.67	4.50*	6.13	2.03	1.02	5.50	2.33	0.03	28.38	4.81	1.60
Aboriginal	15.03	2.81	-2.70**	5.69	2.29	-1.14	6.03	2.23	-1.68	26.74	6.17	-2.27*
CALD	12.00	3.46	1.30	5.33	2.42	0.00	3.50	1.64	2.08*	20.83	6.59	1.41
Guardianship	13.94	3.77	-0.25	5.27	2.36	0.29	5.08	2.34	1.60	24.29	6.83	0.53
ID												
Moderate	12.42	3.80	1.47	5.25	2.92	0.13	5.50	3.23	-0.04	23.17	7.51	0.80
Mild-Mod	12.65	3.81	1.84	4.61	2.37	1.75	5.17	2.10	0.67	22.43	7.13	1.78
Mild	14.65	3.47	-2.17*	5.90	1.97	-2.43*	5.79	2.27	-1.26	26.33	6.31	-2.40*
Bord-Mild	14.25	3.11	-0.48	4.75	2.29	1.12	4.94	2.82	0.96	23.94	7.23	0.45
Service												
DIS	13.96	3.33	-0.37	5.18	2.39	0.80	5.88	2.38	-1.94	25.02	6.77	-0.60
SSL	14.58	3.20	-1.15	5.88	2.07	-1.34	5.71	2.44	-0.54	26.17	6.32	-1.23
IRS	11.43	4.83	2.11*	4.71	1.86	1.10	3.93	2.30	2.63**	20.07	7.64	2.77**
Institution	16.25	0.50	5.56	6.50	3.11	-1.04	3.75	1.50	1.45	26.50	4.43	0.54
Location												
Metro	13.97	3.23	-0.38	5.35	2.27	-0.09	5.62	2.34	-0.72	24.93	6.28	-0.49
Rural	13.19	4.73	0.93	5.11	2.39	0.59	5.33	2.72	0.35	23.63	8.78	0.91
Remote	14.00	2.51	-0.12	5.38	1.85	-0.05	5.75	2.60	-0.33	25.13	5.77	-0.20

*Note.* Tests are *t* tests, where *df* = 98, corrected for unequal variances as necessary. *n* as above for Table 16.

\* *p* < .05; \*\**p* < .01; \*\*\**p* < .001

**PCL-R.** Tables 21 and 22 present the distribution ( $M$ ,  $SD$ ) and analyses of difference for *interpersonal*, *affective*, *lifestyle and behavioural* facets as well as total scores of the PCL-R for sub-groups and total three ( $n = 111$ ) and six ( $n = 99$ ) month follow-up cohorts. Mean scores placed participants in both cohorts well below the cut-off of 30 for those with a psychopathic personality according to criteria by Hare (1991) ( $M_{\text{three}} = 18.37$ ,  $SD_{\text{three}} = 6.12$ ,  $\text{range}_{\text{three}} = 5 - 36$ ;  $M_{\text{six}} = 18.31$ ,  $SD_{\text{six}} = 6.24$ ,  $\text{range}_{\text{six}} = 5 - 36$ ). In both cohorts all but the *affective* domain took in the full range of scores, with participants scoring between zero and ten for the other three domains. Meanwhile, scores on the *affective* domain ranged between zero and six out of a potential of eight for both cohorts.

Minimal differences were found between sub-groups, with the exception of Aboriginal and juvenile participants, showing significantly higher total scores in the three month follow-up relative to non-Aboriginal and adult participants ( $t_{\text{aboriginal}} = -2.15$ ,  $p = .034$ ;  $t_{\text{juvenile}} = -4.07$ ,  $p < 0.001$ ) and only juvenile participants having significantly higher total scores in the six month follow-up cohort ( $t = -4.19$ ,  $p < 0.001$ ).

Table 21

*Distribution of Total and Domain Scores for the PCL-R for Participants with 3 Month Follow-Up Recidivism Data*

	Interpersonal			Affective			Lifestyle			Antisocial			Total		
	<i>M</i>	<i>SD</i>	<i>t</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>M</i>	<i>SD</i>	<i>t</i>
Total	1.76	1.59		3.91	2.50		4.90	2.43		6.80	2.52		18.37	6.12	
Juveniles	2.04	1.78	-0.99	5.13	1.78	-3.40***	6.25	1.96	-3.20**	8.04	1.43	-3.89**	22.58	5.10	-4.07***
Females	2.88	1.46	2.10*	2.50	3.59	-1.67	6.00	2.56	1.33	7.75	1.28	1.97	20.13	5.44	0.84
Aboriginal	1.49	1.58	1.37	3.78	2.66	0.42	5.78	2.28	-3.03**	8.02	1.78	-4.63***	19.98	5.35	-2.15*
CALD	1.86	2.12	-0.17	4.14	2.34	-0.25	4.71	2.43	0.21	5.71	2.98	1.18	17.00	7.79	0.61
Guardianship	1.92	1.59	-1.01	4.14	2.64	-0.88	4.98	2.62	-0.32	6.69	2.68	0.45	18.96	6.71	-0.94
ID															
Moderate	1.07	1.16	1.83	5.07	1.83	-2.48*	4.93	2.12	-0.06	6.80	2.37	0.00	18.73	4.51	-0.25
Mild-Mod	2.04	1.65	-0.99	3.38	2.39	1.19	4.46	2.57	1.01	6.42	3.01	0.85	17.50	6.26	0.79
Mild	1.80	1.62	-0.28	4.02	2.54	-0.45	5.29	2.62	-1.69	6.93	2.30	-0.52	18.98	6.71	-1.05
Bord-Mild	1.82	1.70	-0.19	3.29	2.82	1.10	4.24	1.64	1.65	6.94	2.73	-0.25	17.29	5.27	0.79
Service															
DIS	1.62	1.60	1.16	3.87	2.44	0.22	4.99	2.37	-0.46	7.15	2.44	-1.84	18.59	6.02	-0.41
SSL	1.75	1.65	0.02	3.83	2.33	0.17	5.42	2.60	-1.18	6.83	2.01	-0.08	18.83	5.72	-0.42
IRS	2.00	1.41	-0.64	3.60	2.47	0.51	3.53	1.96	2.40*	4.93	3.01	2.66*	15.40	6.29	2.05*
Institution	3.25	1.26	-1.94	6.25	4.35	-1.93	5.50	2.89	-0.50	7.75	2.06	-0.77	18.18	6.04	-1.72
Location															
Metro	1.88	1.71	-0.91	3.81	2.45	0.48	4.98	2.31	-0.42	6.97	2.09	-0.77	18.53	5.53	-0.32
Rural	1.61	1.39	0.65	3.79	2.46	0.33	4.24	2.62	1.88	6.06	3.34	1.69	16.91	7.32	1.65
Remote	0.90	0.99	2.67	4.00	2.06	-0.12	6.30	1.89	-1.94	7.80	1.40	-1.32	20.10	3.76	-0.94

Note. Tests are *t* tests, where *df* = 110, corrected for unequal variances as necessary. *n* as above for Table 15.

\* *p* < .05; \*\**p* < .01; \*\*\**p* < .001

Table 22

*Distribution of Total and Domain Scores for the PCL-R for Participants with 6 Month Follow-Up Recidivism Data*

	Interpersonal			Affective			Lifestyle			Antisocial			Total		
	<i>M</i>	<i>SD</i>	<i>t</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>M</i>	<i>SD</i>	<i>t</i>
Total	1.84	1.61		3.85	2.53		4.85	2.46		6.73	2.46		18.31	6.24	
Juveniles	2.19	1.83	-1.13	5.19	1.89	-3.38**	6.48	1.94	-3.63***	7.90	1.48	-3.43***	23.00	5.27	-4.19***
Females	2.88	1.46	2.10*	2.50	3.59	-1.67	6.00	2.56	1.33	7.75	1.28	1.11	20.13	5.44	0.84
Aboriginal	1.60	1.63	1.09	3.77	2.73	0.22	5.66	2.31	-2.49*	7.83	1.86	-3.81***	19.83	5.53	-1.81
CALD	1.50	2.07	0.53	3.83	2.40	0.02	4.50	2.59	0.36	5.50	3.21	1.26	16.00	8.02	0.94
Guardianship	1.92	1.61	0.49	4.04	2.65	-0.75	4.94	2.63	-0.36	6.76	2.51	-0.11	18.88	6.63	-0.89
ID															
Moderate	1.25	1.22	1.36	5.17	2.04	-1.96*	4.83	2.21	0.02	6.25	2.34	0.72	18.58	5.00	-0.16
Mild-Mod	2.00	1.68	-0.55	3.22	2.32	1.37	4.30	2.51	1.22	6.26	2.97	0.90	17.00	5.89	1.15
Mild	1.90	1.63	-0.34	4.06	2.53	-0.82	5.31	2.66	-1.85	6.85	2.33	-0.50	19.13	6.95	-1.26
Bord-Mild	1.88	1.75	-0.10	3.13	2.83	1.26	4.25	1.69	1.40	7.38	2.13	-1.15	17.56	5.32	0.52
Service															
DIS	1.72	1.63	0.86	3.70	2.46	0.67	4.86	2.42	-0.05	7.02	2.38	-1.37	18.32	6.31	-0.01
SSL	1.75	1.65	0.31	3.83	2.33	0.03	5.42	2.60	-1.31	6.83	2.01	-0.28	18.83	5.72	-0.47
IRS	2.07	1.44	-0.58	3.79	2.46	0.10	3.64	1.99	2.01	5.07	3.08	2.25	15.93	6.17	1.55
Institution	3.25	1.26	-1.81	6.25	4.35	-1.97	5.50	2.89	-0.54	7.75	2.06	-0.85	23.50	6.95	-1.71
Location															
Metro	1.88	1.71	-0.34	3.65	2.41	0.97	4.95	2.31	-0.51	6.90	2.12	-0.81	18.32	5.51	-0.01
Rural	1.74	1.48	0.37	3.81	2.56	0.08	4.22	2.82	1.57	5.96	3.25	1.57	17.07	7.81	1.21
Remote	1.13	0.99	1.99	4.25	1.98	-0.47	5.88	1.81	-1.24	7.50	1.41	-0.93	19.88	4.22	-0.74

Note. Tests are *t* tests, where *df* = 98, corrected for unequal variances as necessary. *n* as above for Table 16.

\* *p* < .05; \*\**p* < .01; \*\*\**p* < .001

**LSI-R.** Table 23 present the distribution ( $M$ ,  $SD$ ) and analyses of difference for LSI-R total scores for sub-groups and total three ( $n = 111$ ) and six ( $n = 99$ ) month follow-up cohorts. Mean scores placed participants of both follow-up cohorts in the *medium-high* range of risk based on cut-offs provided by Andrews and Bonta (2001) ( $M_{\text{three}} = 33.33$ ,  $SD_{\text{three}} = 9.31$ , range<sub>three</sub> = 9 – 50;  $M_{\text{six}} = 33.02$ ,  $SD_{\text{six}} = 9.21$ , range<sub>six</sub> = 9 – 50). Allocation to risk categories was generally consistent with risk scores, with a modal and median category of *medium-high* risk and mean of *medium* risk.

Consistent with other risk assessment tools, in both cohorts Aboriginal and juvenile participants scored significantly higher compared to non-Aboriginal and adult participants, whilst those in IRS services scored significantly lower than those in other service models. Those in IRS also had the lowest mean score of any sub-group. For the three-month follow-up cohort, those in DIS scored significantly higher than other service models. Those in remote areas, however, had the highest average score, but the score was not significantly different to those living in other areas.



Table 23

*Distribution of Total Scores for the LSI-R for Three and Six Month Follow-Up Cohorts*

	Three Months			Six Months		
	<i>M</i>	<i>SD</i>	<i>t</i>	<i>M</i>	<i>SD</i>	<i>t</i>
Total	33.33	9.31		33.02	9.21	
Juveniles	37.58	6.03	-3.36***	37.33	6.09	-3.19**
Females	34.75	7.82	0.45	34.75	7.82	0.55
Aboriginal	37.29	7.63	-3.82***	36.31	7.49	-2.92**
CALD	27.57	7.91	1.71	27.50	8.67	1.52
Guardianship	32.08	9.67	1.31	31.98	9.52	1.11
ID						
Moderate	34.40	11.26	-0.48	32.25	11.03	0.31
Mild-Mod	30.92	11.15	1.25	30.22	10.85	1.48
Mild	34.24	7.99	-1.02	34.38	7.97	-1.44
Bord-Mild	32.88	8.84	0.22	33.56	8.66	-0.26
Service						
DIS	34.78	8.56	-2.09*	34.23	8.52	-1.53
SSL	34.42	9.38	-0.64	34.42	9.38	-0.85
IRS	26.07	10.36	3.40***	26.71	10.43	2.86**
Institution	29.50	5.20	0.84	29.50	5.20	0.78
Location						
Metro	34.06	8.07	-0.92	33.97	8.12	-1.20
Rural	31.03	11.48	1.49	30.67	11.73	1.32
Remote	37.80	8.65	-1.60	35.63	8.11	-0.83

*Note.* Tests are *t* tests, where *df* = 110 for three months follow up and *df* = 98 for six months follow-up, corrected for unequal variances as necessary. *n* for three and six month cohorts as above at Table 15 and Table 16.

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

**CuRV.** Table 24 presents the distribution (*M*, *SD*) and analyses of difference for CuRV total scores for sub-groups and total three ( $n = 111$ ) and six ( $n = 99$ ) month follow-up cohorts. CuRV total scores ranged between three and 34, out of a potential 34, with a mode of 19 for three month and 24 for six month follow-up cohorts ( $M_{\text{three}} = 16.63$ ,  $SD_{\text{three}} = 6.71$ ,  $M_{\text{six}} = 16.37$ ,  $SD$

six = 6.79). Only juvenile participants had significantly higher scores. However, in both cohorts, females had the highest and those from CALD backgrounds had the lowest mean score.

Table 24

*Distribution of Total Scores for the CuRV for Total and Sub-Groups for Three and Six Month Follow-Up Cohorts*

	Three Months			Six Months		
	<i>M</i>	<i>SD</i>	<i>t</i>	<i>M</i>	<i>SD</i>	<i>t</i>
Total	16.63	6.71		16.37	6.79	
Juveniles	19.13	5.83	-2.09*	19.05	5.78	-2.07*
Females	20.38	4.44	1.65	20.38	4.44	1.76
Aboriginal	17.85	6.44	-1.48	17.31	6.56	-1.02
CALD	15.43	6.08	0.49	14.00	5.22	0.88
Guardianship ID	16.67	6.35	-0.05	16.67	6.30	-0.43
Moderate	16.80	7.64	-0.11	16.25	7.98	0.07
Mild-Mod	15.13	6.52	1.24	14.74	6.38	1.32
Mild	17.60	6.34	-1.52	17.35	6.52	-1.40
Bord-Mild	15.47	7.34	0.77	15.88	7.38	0.32
Service						
DIS	16.31	7.27	0.63	15.74	7.42	1.09
SSL	18.17	5.65	-1.27	18.17	5.65	-1.50
IRS	15.67	6.08	0.60	15.86	6.26	0.31
Institution	16.50	5.45	0.04	16.50	5.45	-0.04
Location						
Metro	16.98	6.68	-0.65	16.83	6.76	-0.83
Rural	16.09	7.24	0.55	15.85	7.42	0.47
Remote	16.20	6.32	0.21	14.63	6.09	0.76

*Note.* Tests are t tests, where  $df = 110$  for three months follow up and  $df = 98$  for six months follow-up, corrected for unequal variances as necessary.  $n$  for three and six month cohorts as above at Table 15 and Table 16.

\*  $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**GRAM.** GRAM probability scores ranged between 12 and 82, out of a potential 100, and mode of 72 for both cohorts ( $M_{\text{three}} = 58.17$ ,  $SD_{\text{three}} = 20.72$ ;  $M_{\text{six}} = 57.38$ ,  $SD_{\text{six}} = 20.43$ ). The

assumption of homoscedasticity was not met for GRAM probability scores [ $D(110) = 0.17, p < .001$ ], with significant skew towards higher risk scores ( $skew = -0.90, SE = 0.23; kurtosis = -0.29, SE = 0.46$ ). Subsequently, non-parametric (Mann–Whitney  $U$ ) independent samples  $t$ -tests were conducted to identify differences between sub-groups on GRAM probability scores. Table 25 presents the median, Mann-Whitney  $U$  and significance for sub-groups of GRAM probability scores for three ( $N = 111$ ) and six ( $N = 99$ ) month follow-up cohorts.

Mann-Whitney tests indicated that, consistent with other risk assessment tools, Aboriginal ( $Mdn_{three} = 78, Mdn_{six} = 75$ ) and juvenile ( $Mdn = 72$ ) participants had higher risk scores than non-Aboriginal ( $Mdn = 61$ ) and adult participants ( $Mdn_{three} = 61, Mdn_{six} = 60$ ) respectively (Aboriginal:  $U_{three} = 610, p < .001, U_{six} = 552.5, p < .001$ ; Juvenile:  $U_{three} = 270, p < .001, U_{six} = 198, p < .001$ ). This finding is confounded, however, given both age and Aboriginal status are items within the GRAM.

Unlike other tools, those with higher levels of ID had higher risk scores on the GRAM, with the Mann-Whitney test suggesting those with a moderate ID ( $Mdn_{three} = 72; Mdn_{six} = 67$ ) having higher median GRAM risk probability scores than those with lower levels of ID ( $Mdn_{three} = 63; Mdn_{six} = 62$ ):  $U_{three} = 380.5, p = .004; U_{six} = 324.5, p = .037$ .

Consistent with the LSI-R, those residing in remote locations had higher risk probability scores on the GRAM, with the highest median score in both cohorts ( $Mdn = 82$ ) and significantly higher scores relative to those who resided in other locations in the six month follow-up cohort;  $U_{six} = 58.5, p < .001$ .

Particularly low scores for those in IRS ( $Mdn_{three} = 49; Mdn_{six} = 54$ ) was another feature consistent with the LSI-R (and the HCR-20), with those in IRS having significantly lower median scores compared to those in other models;  $U_{six} = 354.5, p = .017$ .

Table 25

*GRAM Probability Score Medians and Mann-Whitney U tests for Sub-Groups within Three and Six Month Follow-Up Cohorts*

	Three Months			Six Months		
	<i>N</i>	<i>Mdn</i>	<i>U</i>	<i>N</i>	<i>Mdn</i>	<i>U</i>
Total	111	65		99	65	
Juveniles	23	72	270***	20	72	198***
Females	7	67	318	7	65	266
Aboriginal	40	78	610***	34	75	552.5***
CALD	7	65	348	6	68.5	276
Guardianship ID	50	61	1311	48	61	1131.5
Moderate	15	72	380.5**	12	67	324.5*
Mild-Mod	24	65	1026	23	65	853.5
Mild	54	65	1409.5	47	64	1136.5
Bord-Mild	17	49	567	16	51.5	517.5
Service						
DIS	67	66	1011**	56	66	898.5*
SSL	24	62	951.5	24	62	859
IRS	15	49	388.5	14	54	354.5*
Institution	4	64	187	4	64	173
Location						
Metro	63	64	1205	59	63	991
Rural	33	65	1148.5	27	63	831.5
Remote	10	82	77.5	8	82	58.5***

*Note.* Tests are Mann-Whitney U. *n* for three and six month cohorts as above at Table 15 and Table 16

\*  $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

### Concurrent Validity

The correlations between all risk assessment tool total scores, ARMIDILO-G, HCR-20 and PCL-R sub-domain scores, and ARMIDILO-G SPJ derived risk categories are shown in Table 26. As was to be expected, all risk assessment tools were significantly correlated and all but the PCL-R showed at least moderate correlation. Facet 1 of the PCL-R was the exception to this, correlating no higher than .16 with any other tool or domain. Whilst somewhat unexpected,

Facet 1 is known to correlate poorly to reoffending given it more closely targets psychopathic personality features than behaviour. The lower correlation between the GRAM and CuRV was also to be expected since they are the most dissimilar in purpose - the CuRV a short term dynamic violence risk tool for those with an ID and the GRAM a static general risk of recidivism for the general offender population. Also, as to be expected, was the high correlation between the ARMIDILO-G total score and ARMIDILO-G sub-domain scores given these were used to calculate the total score. The *client risk* sub-domain of the ARMIDILO-G correlated particularly strongly with a number of measures including the CuRV, PCL-R and LSI-R, as well as the *client protective* sub-domain of the ARMIDILO-G, with  $r \geq .75$ . The client domains of the ARMIDILO-G also correlated strongly with the clinical and risk management sub-scales of the HCR-20. These correlations are unsurprising as these tools contain many of the same items. It was also unsurprising that the *environment protective* sub-domain of the ARMIDILO-G correlated relatively poorly amongst tools, with  $.34 \leq r \leq .56$  for risk assessment tools other than the ARMIDILO-G, given it examined, unlike other tools, protective rather than risk factors, and environmental, rather than person based variables.

Table 26

*Correlation between Sub-Domain Scores on the ARMIDILO-G, HCR-20 and PCL-R and Total Scores for Other Risk Assessment Tools*

Measure	ARMIDILO-G						CuRV	HCR-20			PCL-R				LSI-R GRAM		
	SPJ	Act.	Client Risk	Client Pro	Envir. Risk	Envir Pro		Total	H	C	M	Total	F1	F2	F3	F4	
ARMIDILO																	
SPJ	-																
Actuarial	.63	-															
Client Risk	.67	.92	-														
Client Pro	-.62	-.93	-.82	-													
Envir. Risk	.46	.82	.68	-.61	-												
Envir. Pro	-.46	-.81	-.54	.69	-.77	-											
CuRV	.58	.81	.85	-.69	.65	-.56	-										
HCR-20 total	.63	.79	.63	-.63	.47	-.40	.61	-									
History (H)	.45	.51	.54	-.48	.39	-.28	.49	.83	-								
Clinical (C)	.58	.74	.83	-.68	.50	-.44	.79	.82	.44	-							
Manage (M)	.59	.79	.80	-.71	.65	-.51	.70	.85	.49	.73	-						
PCL-R total	.55	.64	.84	-.72	.60	-.47	.77	.77	.68	.60	.61	-					
Interpers (F1)	.17	.14	.12	-.13	.16	-.09	.16	.11	.15	.04	.05	.45	-				
Affective (F2)	.24	.36	.29	-.41	.21	-.30	.32	.35	.22	.38	.31	.65	.17	-			
Lifestyle (F3)	.59	.71	.75	-.66	.49	-.44	.66	.80	.59	.74	.70	.74	.03	.28	-		
Behaviour (F4)	.43	.42	.44	-.37	.37	-.21	.41	.67	.77	.34	.46	.68	.14	.17	.51	-	
LSI-R	.56	.78	.75	-.70	.63	-.50	.66	.66	.77	.60	.73	.86	.03	.22	.71	.72	-
GRAM	.46	.50	.50	-.48	.40	-.34	.31	.41	.33	.31	.39	.41	.06	.14	.47	.42	.50

*Note.* All Pearson Correlation Coefficients are significant at  $p < .001$ . ARM = ARMIDILO-G; Act. = Actuarial; Envir. = Environment; Pro. = Protective. Interpers. = Interpersonal

### Likelihood of Reoffending

The AUCs for all risk assessment total and ARMIDILO-G sub-domains scores across offence types for three and six month follow-up cohorts are presented in Table 27 and Table 28 respectively. AUCs were excluded for sex and vehicle offences in both cohorts and miscellaneous offences in the three-month cohort owing to no participants being charged for this offence type during follow-up periods. Conventions for the strength of effect sizes reported by Rice and Harris (2005) were used, with AUCs  $> .56$  being rated as small, AUCs  $> .64$  as medium and AUCs  $> .71$  as large effect sizes. The average AUC of risk assessment tools for general recidivism was  $.60$  ( $SD = 0.10$ ) for the three months cohort, indicating a small effect size and  $.67$  ( $SD = 0.10$ ) for the six months follow-up cohort, indicating a medium effect size. This suggested a small improvement in probability with lapse of time. On average, risk assessment tools appeared to best predict property offences (e.g., damage property) (AUC:  $M_{\text{three}} = .75$ ;  $SD_{\text{three}} = 0.20$ ;  $M_{\text{six}} = .76$ ,  $SD_{\text{six}} = 0.21$ ) and poorest predict justice offences (e.g., breach of bail) (AUC:  $M_{\text{three}} = .43$ ,  $SD_{\text{three}} = 0.18$ ;  $M_{\text{six}} = .53$ ,  $SD_{\text{six}} = 0.20$ ).

DORs were conducted for total, violent and theft offence types and are reported in Table 29. DORs could not be calculated for the remaining offence types as there were zero counts in cells subsequent to a low number of charges per offence type (e.g., no participants who scored high in the PCL-R were charged with drug offences during follow-up).

**ARMIDILO-G.** The ARMIDILO-G using the SPJ approach with *low*, *medium* and *high* categories displayed the highest AUCs across many offence categories in both cohorts, with the exception of property and justice offences in the three month cohort and drug, property, justice and miscellaneous offences in the six month cohort. Furthermore, only the AUC for justice offences was less than a strong effect size. Whilst many AUCs were of a large effect size, they

were only significant at 95% confidence level for general, violent, theft and public order offences in both cohorts.

Confidence intervals for DORs in the high binning strategy suggested the ARMIDILO-G using the SPJ approach performed significantly better than the CuRV and *client protective*, *environment risk* and *environment protective* sub-domains of the ARMIDILO-G (actuarial approach) at predicting general reoffending in the three month cohort. The SPJ approach appeared to perform even better in the six month cohort, predicting general reoffending significantly better than total scores for all tools, with the exception of the GRAM and PCL-R. The SPJ approach, however, did not perform significantly better than any other tool for any other offence type, based on the confidence intervals of DORs. In addition, whilst the ARMIDILO-G using an SPJ approach perfectly predicted non-offending by those rated as *low* risk, (i.e., no one rated low risk went on to reoffend) it could not be determined if this prediction was significantly better than any other tool or process, as a DOR could not be determined (due to zero cell counts).

When examining AUCs, the ARMIDILO-G appeared to perform poorer as an actuarial than as a SPJ tool across offence types and timeframes. The ARMIDILO-G total score, however, did produce a higher AUC than the SPJ approach for property offences, ( $AUC_{\text{three}} = .89$ ,  $SE_{\text{three}} = .031$ ;  $AUC_{\text{six}} = .90$ ,  $SE_{\text{six}} = .096$ ). Other than property offences, ARMIDILO-G total scores did not produce any strong effect sizes for the three-month cohort. For the six month cohort, large effect sizes were found for both theft and property offences, albeit only statistically significant for theft offences. Of note is that the ARMIDILO-G total score performed worse than chance for violent, drug and justice offences for the three month cohort and drug and justice offences for the six month cohort. The actuarial approach also only produced a moderate (yet significant) effect size for general offending at six months follow-up. Furthermore, DOR



confidence intervals in high and low binning strategies overlapped with all risk assessment tools, indicating it did not perform significantly better than any other tool at identifying those likely offend and not offend at six months.

The sub-domains of the ARMIDILO-G performed poorly as actuarial tools in predicting risk of general recidivism, with AUCs mostly reflecting small effect sizes. Whilst AUCs tended to be higher at six months follow-up, theft was the only offence type to be predicted with reasonable accuracy, with both client sub-domains demonstrating statistically significant large effect sizes. Of note was that sub-domains tended to do no better than chance in predicting violent, drug or justice reoffending. Environmental sub-domains also did particularly poorly in predicting miscellaneous offences, and protective sub-domains were no better than chance at predicting public order offences.

DORs for both low and high binning strategies for ARMIDILO-G sub-domains overlapped with other tools, indicating they performed no better or worse than other tools. DORs, however, could not be completed for client sub-domains for theft offences in the low binning strategy due to perfect prediction. This provided some support to the client domain's ability to predict which individuals would not go on to commit further theft offences over the short term.

**HCR-20.** As described in Table 27 and Table 28, AUCs for the HCR-20 and its sub-domains were generally higher than for ARMIDILO-G sub-domains, but at a level lower than for the ARMIDILO-G when used in a SPJ approach. In three and six month cohorts, large and significant effect sizes for AUCs were found for theft using the total score. Interestingly, in the three month cohort, the *management* sub-domain performed best, whereas in the six month cohort, the arguably more stable dynamic *clinical* sub-domain had a stronger and significant

AUC. Whilst total and sub-domain scores performed differently across times and offence types, there was no general trend, with the *historical* sub-domain and total scores not necessarily performing better with length of follow-up. As to be expected, the findings for the HCR-20 paralleled those of the *client risk* sub-domain of the ARMIDILO-G, which consists of many of the same items as the HCR-20.

Despite being a violence risk tool, the HCR-20 and sub-domains reported a low AUC for violent charges for both cohorts. This finding was complicated by the DORs for violent charges for the high binning strategy being the highest for the HCR-20, compared to other actuarially scored risk assessment tools. This finding suggests that despite a small effect size, the HCR-20 performed the best (albeit not at a level of statistical significance) at identifying high-risk violent offenders out of tools using an actuarial approach. Also, DORs for the total and *historical* sub-domain scores of the HCR-20 could not be calculated in the low risk binning strategy owing to no participants reoffending who were rated *low risk*. Whilst preventing comparative analysis with other tools, a lack of participants' rated *low risk* who offended provides support for the HCR-20's specificity in identifying those who will not reoffend violently.

**PCL-R.** The PCL-R performed poorly across offence types, with no AUCs of large effect sizes in the three month and only one AUC with a large effect size for theft offences in the six month follow-up cohort, as reported in Table 27 and Table 28. The PCL-R also predicted property and public order offences at a level less than chance in the three month and property offences in the six month follow-up cohort. Those who scored above the diagnostic cut-off on the PCL-R did, however, demonstrate the highest odds ratio of receiving a theft charge in the high risk binning strategy for the six months follow-up cohort, as seen in Table 29. This

performance, however, was not statistically better than other tools, with its confidence interval overlapping with all other tools.

Examination of PCL-R facet scores suggested those facets associated with behaviour (*lifestyle* and *behaviour*) demonstrated stronger predictive validity for general and theft offences across both cohorts (albeit not significantly according to DORs) with *interpersonal* and *affective* facets predicting theft and general offending at a level no better than chance. In addition, all facets showed very poor ability to predict violent offences.

**LSI-R.** The AUC for general recidivism of the LSI-R was of a small effect size for the three month, and medium for the six-month follow-up cohort, as reported in Table 27 and Table 28. This was lower than expected given the tool's function in predicting general recidivism. Whilst AUCs were of a large effect size for most other offence types, it predicted violent and justice offences below chance in the three month, and justice offences below chance in the six month follow-up cohort. The AUC for property offences was, however, the highest amongst all tools and processes in both cohorts. Despite high AUCs for theft, DORs demonstrated relatively poor sensitivity, with the LSI-R reporting the third lowest DOR for theft for the high risk binning strategy. Whilst the DORs could not be calculated for the low binning strategy, there was support for the LSI-R's ability to identify participants who were at low risk of being charged with a theft offence, as no participants who were classified as *low risk* were charged with theft. Like most other tools, however, DORs suggested that the LSI-R did not predict offending or non-offending significantly better than any other tool assessed.

**CuRV.** The AUCs reported in Table 27 and Table 28 for the CuRV total score were the lowest of any total score for general recidivism in both three and six month follow-up cohorts. For both cohorts, only AUCs for property offences were of a large effect size, with only AUCs

for theft offences just reaching threshold for a medium effect size and the remainder of AUCs being of a small effect size. Also, no AUCs were at a level of statistical significance. The sensitivity and specificity of the CuRV was also generally poor according to DORs, with the exception of DORs in the low risk binning strategy for theft.

**GRAM.** The AUCs reported in Table 27 and Table 28 for the GRAM were the highest for any actuarial tool and equalled the ARMIDILO-G (SPJ approach) in terms of number of AUCs of a large effect size for different offence types across both cohorts. The AUCs for general recidivism for the GRAM were also the highest for any actuarial tool with large effect sizes for both cohorts. In addition, AUCs for the GRAM were the highest of any tool or process for drug and justice offences in both cohorts. AUCs were also statistically significant for general, violent and theft offences across both cohorts. The GRAM, however, did predict property offences at a probability lower than chance across cohorts and public order offences in the three month follow-up cohort. Supporting the GRAM's strength as an actuarial tool, it also demonstrated the second highest DOR using the high binning strategy and the highest DOR using the low binning strategy for general recidivism, (as reported in Table 29). Whilst unable to be determined for violent charges, the GRAM also had the highest DOR for theft offences in the low binning strategy. Unlike the ARMIDILO-G (SPJ approach), all confidence intervals overlapped with other tools in both binning strategies, indicating it did not perform better or worse than any other tool at a level of statistical significance.

Table 27

*Areas Under the Curve of the Receiver Operating Characteristic Curve for Risk Assessment Tools at Three Months Follow-Up (n = 111)*

<b>Measure</b>	<b>Total AUC (SE)</b>	<b>Violence AUC (SE)</b>	<b>Theft AUC (SE)</b>	<b>Drug AUC (SE)</b>	<b>Property AUC (SE)</b>	<b>Public Order AUC (SE)</b>	<b>Justice AUC (SE)</b>
ARMIDILO-G SPJ	.83 (.042)***	.81 (.056)***	.80 (.061)***	.84 (.101)	.84 (.101)	.84 (.073)*	.51 (.077)
ARMIDILO-G Act.	.55 (.071)	.47 (.108)	.68 (.081)**	.33 (.045)	.89 (.031)	.70 (.046)	.31 (.074)
Client Risk	.58 (.074)	.52 (.121)	.68 (.084)**	.24 (.041)	.78 (.041)	.83 (.046)	.40 (.066)
Client Protective	.54 (.075)	.52 (.124)	.66 (.079)**	.64 (.046)	.87 (.033)	.53 (.048)	.20 (.111)
Envir. Risk	.51 (.064)	.33 (.059)	.66 (.088)	.42 (.052)	.67 (.050)	.85 (.068)	.42 (.049)
Envir. Protective	.49 (.067)	.42 (.094)	.61 (.077)*	.59 (.052)	.91 (.028)	.54 (.063)	.35 (.112)
CuRV	.52 (.075)	.49 (.115)	.64 (.079)	.12 (.032)	.85 (.042)	.63 (.050)	.26 (.085)
HCR-20 Act.	.60 (.070)	.56 (.110)	.70 (.095)**	.24 (.042)	.73 (.046)	.79 (.089)	.39 (.087)
Historical	.61 (.069)	.54 (.102)	.67 (.112)	.54 (.057)	.54 (.057)	.77 (.066)	.42 (.198)
Clinical	.54 (.074)	.50 (.117)	.62 (.074)	.02 (.014)	.85 (.043)	.72 (.051)	.42 (.055)
Management	.60 (.064)	.58 (.104)	.71 (.068)	.28 (.046)	.70 (.061)	.74 (.149)	.46 (.074)
PCL-R	.62 (.061)	.57 (.092)	.67 (.084)**	.64 (.052)	.40 (.050)	.43 (.053)	.63 (.070)
Facet 1	.60 (.071)	.65 (.104)	.59 (.098)	.14 (.088)	.14 (.088)	.68 (.078)	.59 (.138)
Facet 2	.53 (.071)	.53 (.094)	.50 (.122)	.78 (.053)	.39 (.054)	.32 (.128)	.46 (.223)
Facet 3	.61 (.068)	.48 (.104)	.75 (.060)*	.25 (.059)	.90 (.044)	.57 (.076)	.65 (.057)
Facet 4	.64 (.064)	.59 (.094)	.73 (.071)*	.81 (.039)	.30 (.049)	.45 (.116)	.71 (.089)
LSI-R	.63 (.070)	.49 (.112)	.75 (.060)**	.82 (.039)	.90 (.028)	.70 (.120)	.45 (.110)
GRAM	.71 (.057)**	.70 (.073)*	.72 (.086)**	.85 (.037)	.35 (.047)	.34 (.128)	.83 (.087)
<b>Charged</b>	<b>18</b>	<b>8</b>	<b>7</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>2</b>

*Note.* Envir. = Environment, Act. = An actuarial approach was used to determine scores.

\* $p < 0.05$ . \*\* $p < 0.01$ . \*\*\* $p < 0.001$ .

Table 28

*Areas Under the Curve of the Receiver Operating Characteristic Curve for Risk Assessment Tools at Six Months Follow-Up (n = 99)*

<b>Measure</b>	<b>Total AUC (SE)</b>	<b>Violence AUC (SE)</b>	<b>Theft AUC (SE)</b>	<b>Drug AUC (SE)</b>	<b>Property AUC (SE)</b>	<b>Public Order AUC (SE)</b>	<b>Justice AUC (SE)</b>	<b>Miscellaneous AUC (SE)</b>
ARMIDILO-G SPJ	.87 (.036)***	.84 (.051)***	.85 (.042)***	.69 (.135)	.85 (.096)	.85 (.058)*	.66 (.088)	.85 (.096)
ARMIDILO-G Act.	.64 (.059)*	.53 (.103)	.77 (.057)***	.44 (.077)	.90 (.096)	.64 (.076)	.46 (.120)	.66 (.048)
Client Risk	.66 (.059)**	.56 (.111)	.78 (.052)***	.32 (.058)	.80 (.042)	.80 (.057)	.51 (.089)	.73 (.046)
Client Protection	.64 (.060)*	.57 (.110)	.77 (.054)***	.49 (.089)	.89 (.033)	.52 (.062)	.40 (.151)	.79 (.043)
Envir. Risk	.55 (.058)	.42 (.083)	.66 (.066)	.52 (.072)	.66 (.051)	.75 (.096)	.51 (.091)	.39 (.050)
Envir. Protection	.58 (.061)	.48 (.093)	.69 (.062)*	.71 (.077)	.91 (.030)	.53 (.068)	.41 (.125)	.48 (.052)
CuRV	.53 (.061)	.51 (.103)	.64 (.063)	.27 (.104)	.85 (.039)	.59 (.076)	.47 (.089)	.51 (.051)
HCR-20 Act.	.65 (.059)*	.60 (.102)	.73 (.063)**	.33 (.068)	.75 (.047)	.71 (.099)	.43 (.067)	.63 (.051)
Historical	.64 (.060)*	.60 (.095)	.66 (.080)*	.54 (.054)	.54 (.060)	.63 (.129)	.45 (.089)	.85 (.044)
Clinical	.63 (.062)	.54 (.105)	.76 (.052)***	.16 (.103)	.87 (.043)	.69 (.061)	.47 (.077)	.87 (.043)
Management	.61 (.058)	.59 (.092)	.69 (.062)*	.34 (.058)	.71 (.058)	.74 (.098)	.41 (.073)	.20 (.058)
PCL-R	.68 (.055)**	.59 (.087)	.73 (.063)**	.60 (.060)	.41 (.051)	.51 (.073)	.59 (.075)	.96 (.019)
Facet 1	.55 (.067)	.54 (.103)	.54 (.089)	.44 (.225)	.13 (.084)	.49 (.157)	.69 (.119)	.96 (.027)
Facet 2	.60 (.061)	.53 (.083)	.63 (.077)	.65 (.103)	.40 (.058)	.44 (.126)	.40 (.121)	.88 (.038)
Facet 3	.69 (.060)**	.56 (.106)	.82 (.054)***	.32 (.070)	.91 (.046)	.70 (.102)	.53 (.087)	.91 (.046)
Facet 4	.72 (.054)***	.66 (.088)	.70 (.064)**	.73 (.085)	.32 (.053)	.47 (.088)	.75 (.071)	.96 (.028)
LSI-R	.69 (.057)**	.60 (.110)	.74 (.057)**	.81 (.046)	.92 (.027)	.65 (.101)	.49 (.101)	.54 (.054)
GRAM	.82 (.044)***	.77 (.066)**	.78 (.058)***	.81 (.061)	.37 (.050)	.59 (.174)	.75 (.065)	.74 (.057)
<b>Charged</b>	<b>27</b>	<b>9</b>	<b>15</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>5</b>	<b>1</b>

Note. Envir. = Environment

\* $p < 0.05$ . \*\* $p < 0.01$ . \*\*\* $p < 0.001$ .

Table 29

*Diagnostic Odds Ratios for General, Violent and Theft Charges and Risk Assessment Tools at Three and Six Months Follow-Up*

Measure and Binning Strategy	Three Months			Six Months		
	Total DOR (95% CI)	Violence DOR (95% CI)	Theft DOR (95% CI)	Total DOR (95% CI)	Violence DOR (95% CI)	Theft DOR (95% CI)
PCL-R <sup>c</sup>	1.3 (0.1-12.4)	- <sup>b</sup>	4.2 (0.4-43.3)	4.4 (0.7-27.8)	- <sup>b</sup>	10.3 (1.6-67.8)
<b>High Risk Binning</b>						
ARMIDILO-G SPJ	15.2 (4.0-57.3)	16.3 (1.9-137.8)	13.5 (1.6-116.8)	19.4 (6.4-59.0)	22.0 (2.6-185.3)	22.2 (4.6-107.3)
ARMIDILO-G Act.	1.48 (0.5-4.2)	1.3 (0.3-5.9)	3.1 (0.7-14.9)	2.1 (0.8-5.3)	2.1 (0.6-8.4)	4.8 (1.5-15.1)
Client Risk	1.6 (0.6-4.4)	1.2 (0.3-5.0)	3.2 (0.6-17.0)	3.0 (1.2-7.5)	1.7 (0.4-6.8)	6.8 (1.7-26.1)
Client Protection	0.6 (0.1-2.8)	0.7 (0.2-3.2)	1.7 (0.4-8.1)	1.7 (0.7-4.1)	1.2 (0.3-4.7)	4.5 (1.3-15.6)
Envir. Risk	0.4 (0.1-2.0)	- <sup>a</sup>	1.5 (0.3-8.5)	0.5 (0.2-1.8)	0.4 (0.1-3.6)	1.4 (0.4-4.9)
Envir. Protection	1.1 (0.4-3.1)	0.9 (0.1-7.9)	1.1 (0.1-9.5)	1.8 (0.5-6.1)	- <sup>a</sup>	4.7 (1.3-17.2)
GRAM	2.8 (1.0-8.3)	2.3 (0.5-10.5)	2.9 (0.6-14.1)	5.4 (1.9-15.7)	4.0 (1.0-16.4)	5.2 (1.6-16.9)
CuRV	1.1 (0.3-3.8)	1.3 (0.2-6.9)	0.6 (0.1-5.4)	0.7 (0.2-2.2)	0.5 (0.1-4.3)	1.1 (0.3-4.2)
HCR-20	2.5 (0.9-7.0)	2.4 (0.6-10.7)	3.7 (0.7-19.9)	2.4 (1.0-5.8)	3.3 (0.8-14.0)	3.6 (1.1-11.5)
Historical	2.0 (0.7-5.9)	0.9 (0.2-3.8)	2.4 (0.4-13.0)	2.8 (1.1-7.2)	1.9 (0.5-8.1)	2.0 (0.6-6.4)
Clinical	1.5 (0.5-4.2)	1.0 (0.2-4.7)	2.5 (0.5-11.9)	2.8 (1.1-7.0)	1.6 (0.4-6.4)	7.3 (2.1-25.2)
Management	1.3 (0.5-3.7)	1.6 (0.4-6.9)	2.2 (0.5-10.5)	1.0 (0.4-2.6)	1.5 (0.4-5.8)	2.3 (0.8-6.9)
LSI-R	2.1 (0.7-6.3)	1.2 (0.2-6.5)	1.5 (0.3-8.2)	1.6 (0.6-4.5)	2.1 (0.5-9.5)	1.5 (0.4-5.5)
PCL-R Facet 1	- <sup>b</sup>	- <sup>b</sup>	- <sup>b</sup>	- <sup>b</sup>	- <sup>b</sup>	- <sup>b</sup>
Facet 2	1.4 (0.5-4.1)	0.9 (0.2-4.6)	1.0 (0.2-5.8)	1.6 (0.6-4.1)	0.3 (0.0-2.7)	2.1 (0.7-6.5)
Facet 3	1.1 (0.4-3.4)	0.9 (0.2-4.9)	1.1 (0.2-6.2)	2.6 (1.0-6.8)	2.5 (0.6-10.0)	4.2 (1.3-13.1)
Facet 4	3.0 (0.8-11.2)	3.9 (0.5-33.1)	- <sup>a</sup>	4.6 (1.4-14.7)	5.1 (0.6-42.5)	4.4 (0.9-20.8)

Note. DOR = Diagnostic Odds Ratio; Envir. = Environment; Act. = Actuarial

<sup>a</sup> An odds ratio could not be computed due to a zero count in a cell, though a high odds ratio would be expected due to perfect prediction.

<sup>b</sup> An odds ratio could not be computed due to a zero count in a cell, though a very low odds ratio would be expected due to zero in a cell anticipated to have a high count.

<sup>c</sup> Low and high binning was not performed due to dichotomous categorisation.

Table 29 (cont)

*Diagnostic Odds Ratios for General, Violent and Theft Charges and Risk Assessment Tools at Three and Six Months Follow-Up*

Measure and Binning Strategy	Three Months			Six Months		
	Total DOR (95% CI)	Violence DOR (95% CI)	Theft DOR (95% CI)	Total DOR (95% CI)	Violence DOR (95% CI)	Theft DOR (95% CI)
<b>Low Risk Binning</b>						
ARMIDILO-G SPJ	- <sup>a</sup>	- <sup>a</sup>	- <sup>a</sup>	- <sup>a</sup>	- <sup>a</sup>	- <sup>a</sup>
ARMIDILO-G Act.	1.3 (0.4-3.5)	0.6 (0.1-2.5)	- <sup>a</sup>	0.5 (0.2-1.2)	0.5 (0.1-1.9)	0.2 (0.1-0.7)
Client Risk	3.5 (0.4-28.5)	1.3 (0.1-11.2)	- <sup>a</sup>	7.4 (0.9-59.1)	1.7 (0.2-14.8)	- <sup>a</sup>
Client Protection	1.7 (0.4-8.1)	1.4 (0.2-12.1)	- <sup>a</sup>	3.4 (0.7-16.1)	1.9 (0.2-16.1)	- <sup>a</sup>
Envir. Risk	1.2 (0.4-3.5)	0.3 (0.1-1.4)	3.7 (0.4-32.0)	1.8 (0.7-4.6)	0.5 (0.1-1.9)	3.0 (0.8-11.4)
Envir. Protection	0.9 (0.3-2.4)	0.4 (0.1-1.8)	1.9 (0.3-10.1)	1.3 (0.5-3.3)	0.7 (0.2-2.6)	2.7 (0.8-9.1)
GRAM	5.9 (1.3-27.1)	- <sup>a</sup>	3.8 (0.4-32.8)	12.9 (2.8-58.4)	- <sup>a</sup>	5.0 (1.1-23.5)
CuRV	1.0 (0.3-3.0)	0.6 (0.1-2.6)	- <sup>a</sup>	1.5 (0.5-4.3)	0.8 (0.2-3.3)	6.6 (0.8-53.1)
HCR-20	- <sup>a</sup>	- <sup>a</sup>	- <sup>a</sup>	- <sup>a</sup>	- <sup>a</sup>	- <sup>a</sup>
Historical	- <sup>a</sup>	- <sup>a</sup>	- <sup>a</sup>	- <sup>b</sup>	- <sup>b</sup>	- <sup>a</sup>
Clinical	2.8 (0.6-13.0)	2.4 (0.3-19.1)	- <sup>a</sup>	5.9 (1.3-26.9)	2.9 (0.3-24.5)	- <sup>a</sup>
Management	3.1 (0.7-14.5)	1.0 (0.2-5.3)	- <sup>a</sup>	4.0 (1.1-14.6)	1.3 (0.3-6.9)	6.3 (0.8-50.3)
LSI-R	1.8 (0.4-8.5)	0.6 (0.1-3.2)	- <sup>a</sup>	3.3 (0.7-15.5)	0.7 (0.1-3.7)	- <sup>a</sup>
PCL-R Facet 1	1.3 (0.5-3.8)	2.1 (0.5-9.0)	0.8 (0.1-4.3)	1.4 (0.6-3.4)	0.9 (0.2-3.9)	1.3 (0.4-3.9)
Facet 2	1.5 (0.5-4.5)	1.7 (0.3-8.7)	0.7 (0.1-3.3)	2.5 (0.9-6.9)	2.1 (0.4-10.7)	2.6 (0.7-9.8)
Facet 3	1.3 (0.4-4.0)	0.5 (0.1-1.9)	- <sup>a</sup>	2.1 (0.8-5.9)	0.6 (0.1-2.4)	8.6 (1.1-68.7)
Facet 4	3.0 (0.4-24.5)	1.1 (0.1-9.6)	- <sup>a</sup>	5.2 (0.6-42.1)	1.2 (0.1-10.7)	- <sup>a</sup>

Note. DOR = Diagnostic Odds Ratio; Envir. = Environment; Act. = Actuarial

<sup>a</sup> An odds ratio could not be computed due to a zero count in a cell, though a high odds ratio would be expected due to perfect prediction.

<sup>b</sup> An odds ratio could not be computed due to a zero count in a cell, though a very low odds ratio would be expected due to zero in a cell anticipated to have a high count.

<sup>c</sup> Low and high binning was not performed due to dichotomous categorisation.



### Time to Reoffend

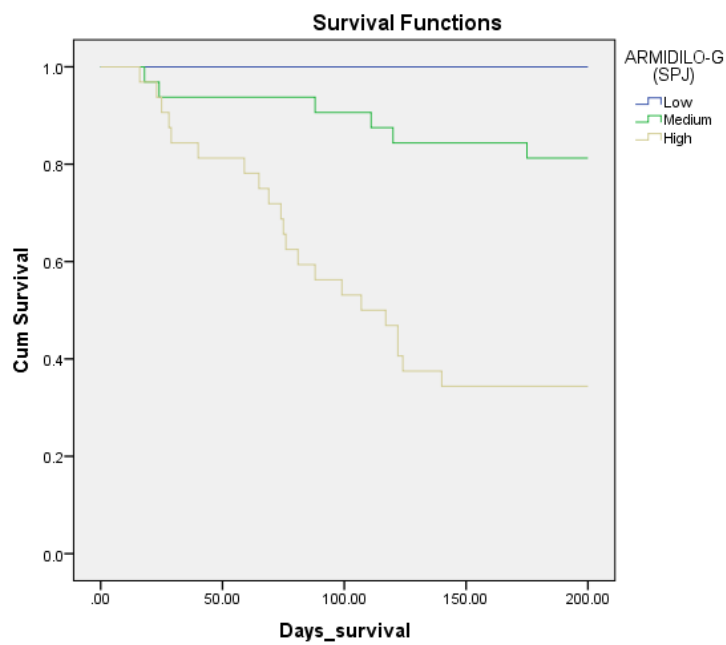
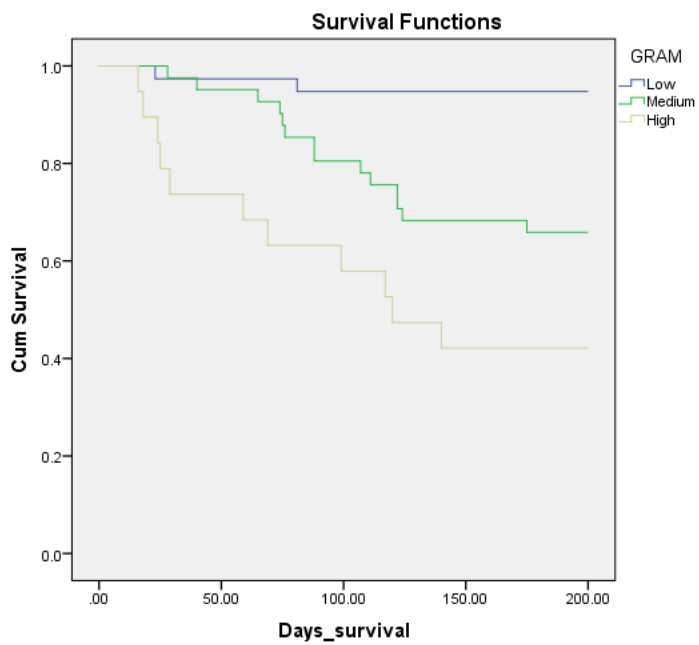
Kaplan-Meier survival curves were used to examine whether risk categories on risk assessment tools could predict time to reoffend. For general recidivism, only the ARMIDILO-G (SPJ approach) and the GRAM were able predict time to reoffend over three and six months follow-up (ARMIDILO-G:  $\chi^2_{\text{three}} = 38.30$ ,  $df = 2$ ,  $p < .001$ ;  $\chi^2_{\text{six}} = 42.09$ ,  $df = 2$ ,  $p < .001$ . GRAM:  $\chi^2_{\text{three}} = 15.85$ ,  $df = 2$ ,  $p < .001$ ;  $\chi^2_{\text{six}} = 21.35$ ,  $df = 2$ ,  $p < .001$ ). Risk categories on the *client risk* sub-domain of the ARMIDILO-G significantly differed using the Mantel-Cox statistic ( $\chi^2 = 5.82$ ,  $df = 2$ ,  $p = .05$ ), but not other test statistics at three months. The Mantel-Cox ( $\chi^2 = 6.61$ ,  $df = 2$ ,  $p = .04$ ), generalised Wilcoxon ( $\chi^2 = 5.91$ ,  $df = 2$ ,  $p = .05$ ) and Tarone-Ware ( $\chi^2 = 6.27$ ,  $df = 2$ ,  $p = .04$ ) test statistics, however, were all significant at six months, suggesting improved ability of categories to discriminate as time progressed. Curiously, a similar yet stronger finding occurred with respect to the *behaviour facet* (facet 4) of the PCL-R, which, whilst not able to distinguish time to reoffend generally at three months for any statistic, was significantly able to predict time to offend at six months according to the Mantel-Cox ( $\chi^2 = 7.10$ ,  $df = 2$ ,  $p = .03$ ), generalised Wilcoxon ( $\chi^2 = 6.93$ ,  $df = 2$ ,  $p = .03$ ) and Tarone-Ware ( $\chi^2 = 7.02$ ,  $df = 2$ ,  $p = .03$ ) test statistics. This improvement over time may be due to the static nature of items in this facet and the likelihood their predictive power improves over the longer term (Douglas & Skeem, 2005). Kaplan-Meier survival curves for general recidivism using risk categories for all risk assessment tools at six-month follow-up are provided at Figure 5.

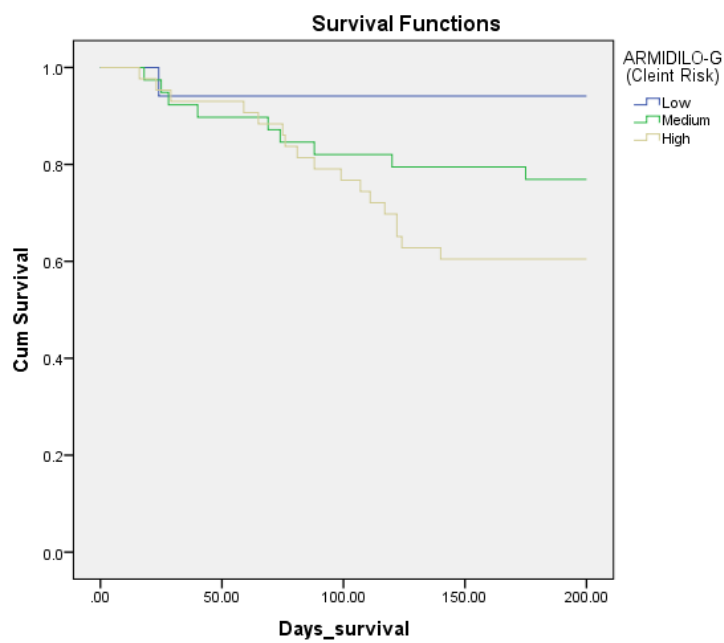
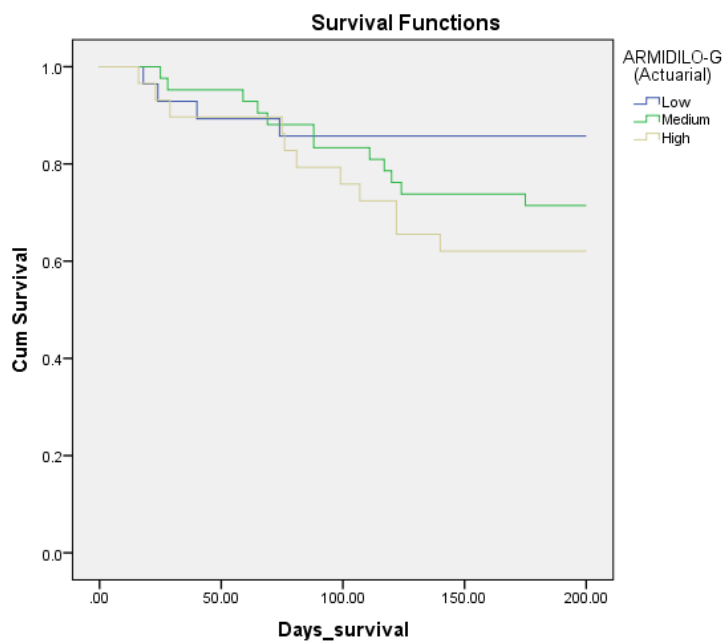
Categories of risk on risk assessment tools tended to discriminate time to reoffend more poorly for specific offence types, with the exception of theft, where only the CuRV, HCR-20 *historical* and *management* domains, facets one, two and four of the PCL-R and LSI-R risk categories failed to predict time to reoffend in the six month cohort. The ARMIDILO-G (SPJ approach) performed particularly well, as it was the only tool to reliably predict time to theft in

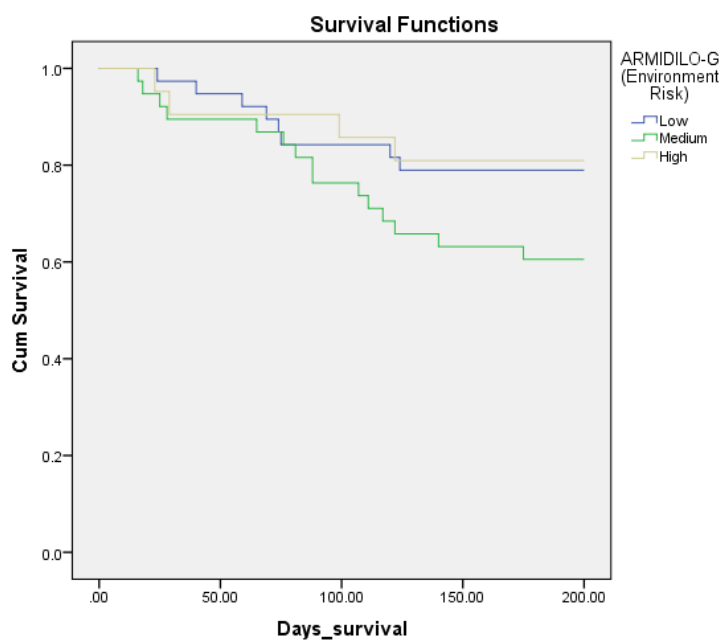
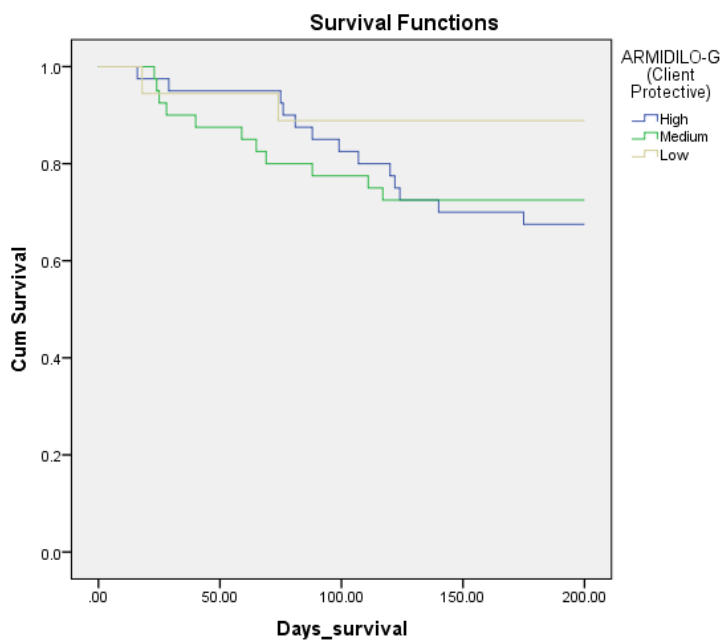
the three month cohort ( $\chi^2 = 11.10, df = 2, p = .004$ ). A number of tools, however, performed well over six months, with the ARMIDILO SPJ ( $\chi^2 = 33.57, df = 2, p < .001$ ) and actuarial ( $\chi^2 = 10.46, df = 2, p = .006$ ) approaches, as well as *client risk* ( $\chi^2 = 9.97, df = 2, p = .007$ ) and *client protective* ( $\chi^2 = 6.12, df = 2, p = .05$ ) sub-domains of the ARMIDILO-G, GRAM ( $\chi^2 = 13.59, df = 2, p = .001$ ), HCR-20 ( $\chi^2 = 6.59, df = 2, p = .037$ ) and PCL-R ( $\chi^2 = 5.67, df = 2, p = .017$ ) all able to adequately discriminate time to theft in the six month cohort.

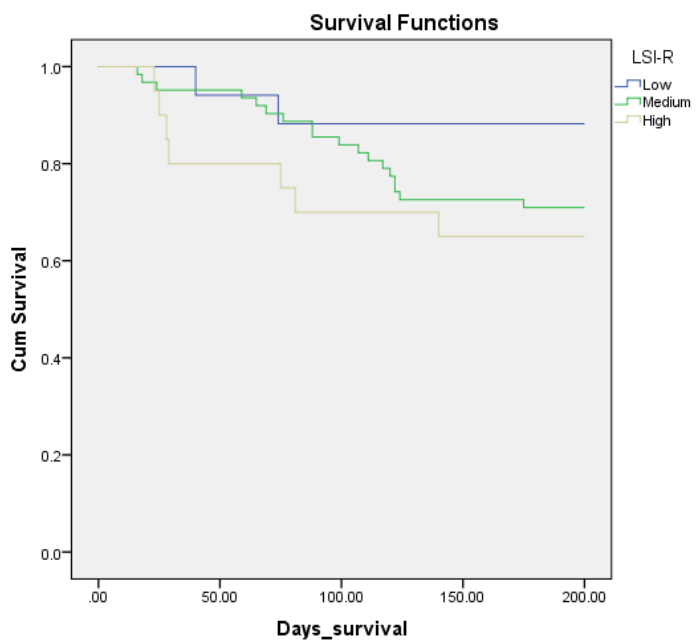
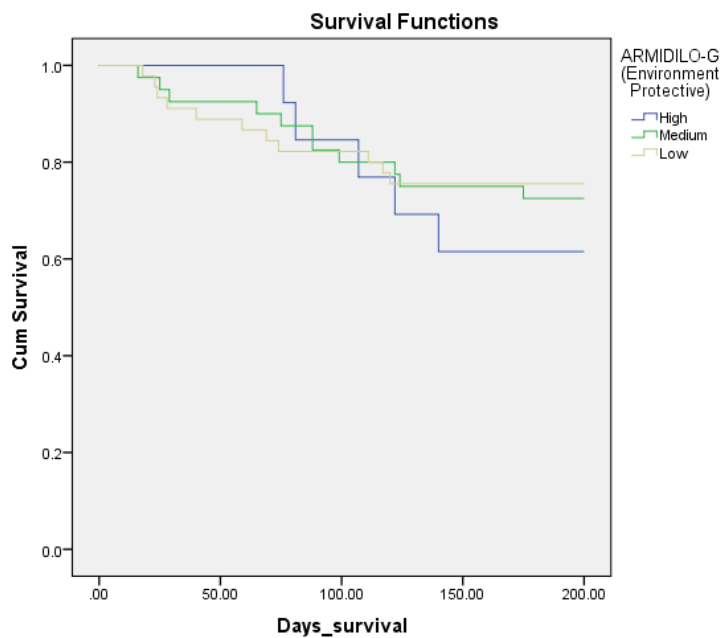
At three month follow-up, only the *environment protective* sub-domain of the ARMIDILO-G when used in an actuarial approach provided evidence of predicting time to reoffend for any other offence type, predicting time to property offence;  $\chi^2 = 6.31, df = 2, p = .043$ . It was also the only measure to reliably predict time to property offence at six months follow-up;  $\chi^2 = 6.0, df = 2, p = .05$ .

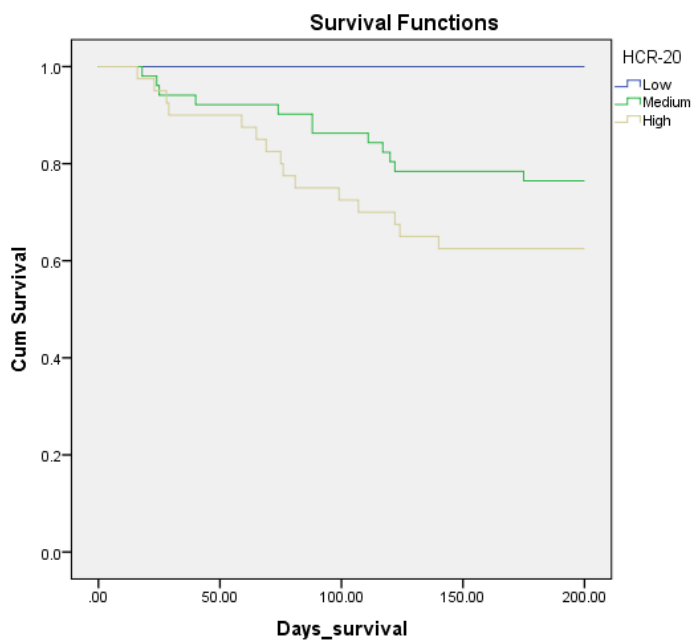
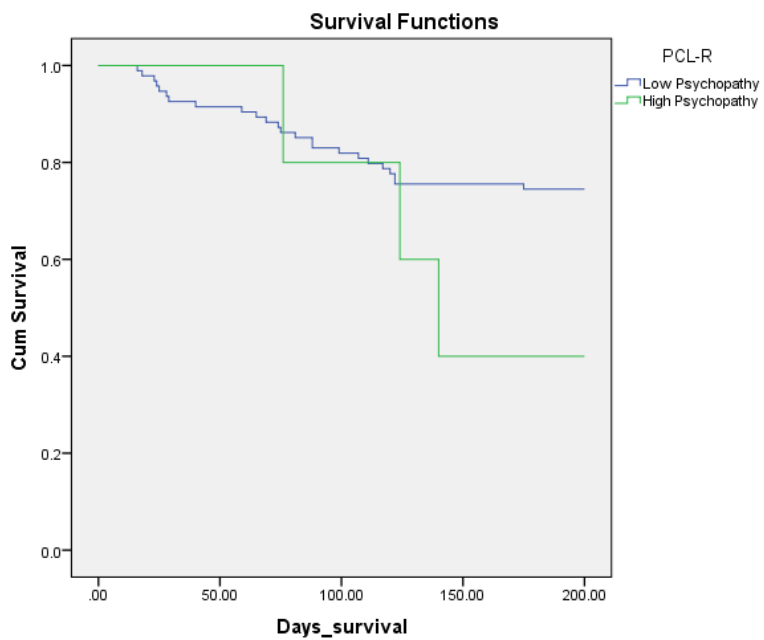
Amongst the six-month follow-up cohort, no tool was able to predict time to reoffend for drug or justice offences. Despite a number of tools being developed to predict risk of violent recidivism, only the ARMIDILO-G (SPJ approach) ( $\chi^2 = 16.01, df = 2, p < .001$ ), GRAM ( $\chi^2 = 9.30, df = 2, p = .01$ ) and PCL *interpersonal* facet ( $\chi^2 = 10.56, df = 2, p = .005$ ) were able to predict time to violent re-offence. The ARMIDILO-G (SPJ approach) was also the only tool to predict time to public order offence;  $\chi^2 = 8.04, df = 2, p = .018$ . Despite poor performance across other offences, the PCL-R was the only tool to predict time to reoffend for miscellaneous offences at six months follow-up;  $\chi^2 = 17.75, df = 2, p < .001$ .











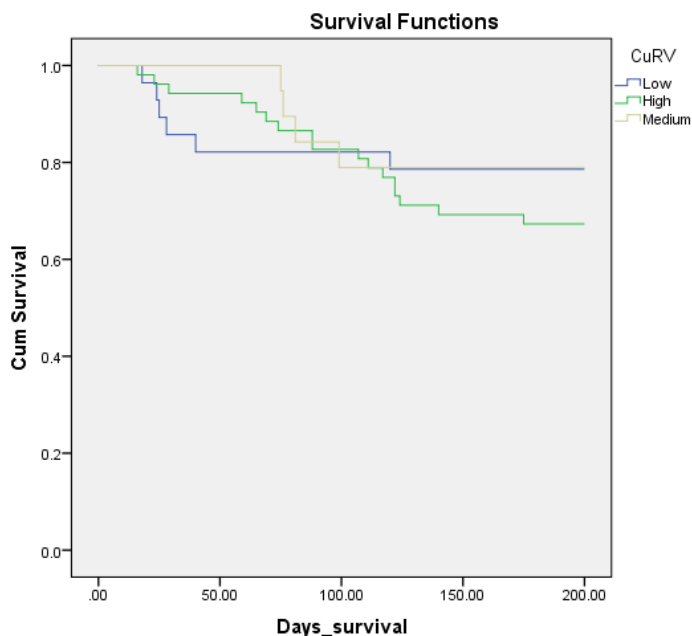


Figure 5. Kaplan-Meier survival curves for general recidivism at six months follow-up for all risk assessment tools and processes.

### Severity of Offending

Ten of the 27 participants who were charged for any offence during six-month follow-up received custodial sentences, with five charged participants not receiving convictions and twelve receiving outcomes other than custody. No analyses were subsequently conducted due to the small sample size.

### Sub-Group Analyses

Additional analyses were conducted to assess the ability of risk assessment tools to predict new charges for Aboriginal, non-Aboriginal, and adult participants at six-month follow-up. Separate analyses were conducted as Aboriginal and juvenile participants consistently scored higher on risk assessment tools (with the exception of the CuRV) relative to other participants.

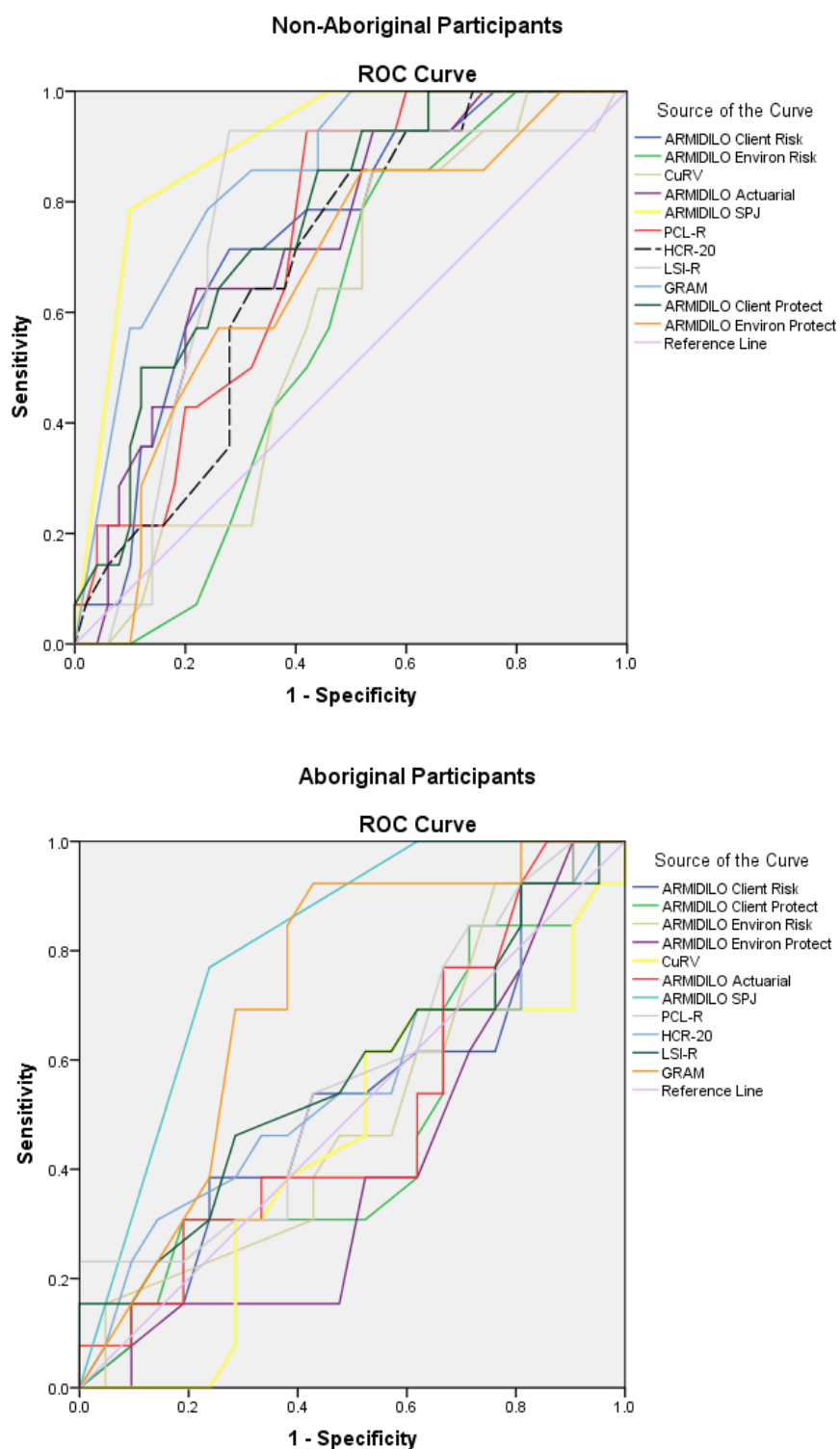
**Aboriginality.** AUCs for non-Aboriginal tended to be much higher than Aboriginal participants across offence types at six months, with all tools except GRAM and ARMIDILO-G



(SPJ approach) predicting general recidivism at no better than chance for Aboriginal participants. Only the CuRV, HCR-20 and environment sub-domains of the ARMIDILO-G had AUCs with less than a large effect size when predicting general recidivism in the non-Aboriginal participants. This difference is graphically represented with ROC curves in Figure 6.

Comparative AUCs for Aboriginal and non-Aboriginal participants for general, violent and theft offences are reported in Table 30. No comparison could be made between Aboriginal and non-Aboriginal participants for property and miscellaneous offences given a lack of recidivism by Aboriginal participants for these offence. AUCs for all remaining offence types were not significant for either sub-group. Tools performed particularly poorly at predicting drug offences amongst Aboriginal participants, with the exception of the LSI-R (AUC = .79, SE = .073) and ARMIDILO-G (SPJ approach) (AUC = .79, SE = .140), albeit both not reaching statistical significance. Amongst non-Aboriginal participants, the ARMIDILO-G (SPJ approach) performed much more poorly (AUC = .59, SE = .110) and GRAM much improved (AUC = .91, SE = .066) relative to Aboriginal participants. Similar findings were found for public order offences, with AUCs ranging between .54 and .88 for non-Aboriginal and between .41 and .80 for Aboriginal participants, with only the ARMIDILO-G (SPJ approach) (AUC = .80, SE = .103) and *environment risk* sub-domain of the ARMIDILO-G (AUC = .77, SE = .146) producing AUCs with large effect sizes for Aboriginal participants. The difference between AUCs for Aboriginal and non-Aboriginal sub-groups for justice offences was even more pronounced, with only one tool (the GRAM) producing an AUC of a medium effect size for Aboriginal participants (AUC = .64, SE = .173), whereas the GRAM and LSI-R both had AUCs with large effect sizes and the PCL-R, ARMIDILO-G (SPJ approach), and ARMIDILO-G *client risk* sub-domain had AUCs of medium effect size in the non-Aboriginal sub-group.

DOR for general, violent and theft offences, as described in Table 31, provide further support for the better performance of risk assessment tools in predicting reoffending amongst non-Aboriginal participants. Risk assessment DORs for non-Aboriginal participants were almost invariably higher than for Aboriginal participants. However, in all cases confidence intervals overlapped, suggesting differences were not statistically significant. Differences appeared to be not as marked for violence offences in the low binning strategy whilst perfect prediction of not committing a theft for most risk assessment tools made analysis difficult in the low binning strategy for such offences.



*Figure 6.* ROC curves for all risk assessment tools predicting general recidivism over six months for Aboriginal and non-Aboriginal participants ( $n = 99$ )

Table 30

*Areas Under the Curve of the Receiver Operating Characteristic Curves for Risk Assessment Tools at Six Months Follow-Up for Aboriginal and Non-Aboriginal Participants*

Measure	Total AUC (SE)		Violence AUC (SE)		Theft AUC (SE)	
	Non-Aboriginal	Aboriginal	Non-Aboriginal	Aboriginal	Non-Aboriginal	Aboriginal
ARMIDILO-G SPJ	.90 (.041)***	.81 (.074)***	.90 (.044)**	.74 (.101)	.88 (.053)***	.80 (.078)**
ARMIDILO-G Act.	.74 (.070)**	.50 (.104)	.58 (.143)	.47 (.154)	.82 (.070)**	.72 (.095)
Client Risk	.74 (.069)**	.52 (.105)	.59 (.157)	.49 (.153)	.81 (.058)**	.73 (.096)
Client Protection	.77 (.064)**	.46 (.106)	.66 (.141)	.48 (.165)	.82 (.072)**	.70 (.097)
Envir. Risk	.58 (.071)	.51 (.103)	.36 (.084)	.46 (.139)	.67 (.075)	.65 (.119)
Envir. Protection	.67 (.078)*	.40 (.100)	.53 (.134)	.38 (.143)	.78 (.071)*	.57 (.104)
CuRV	.59 (.074)	.44 (.102)	.48 (.151)	.51 (.140)	.65 (.082)	.62 (.102)
HCR-20 Act.	.69 (.070)*	.56 (.106)	.65 (.140)	.49 (.152)	.70 (.084)	.74 (.101)*
PCL-R	.73 (.064)**	.57 (.103)	.63 (.118)	.52 (.145)	.81 (.069)**	.61 (.124)
LSI-R	.75 (.072)***	.57 (.105)	.61 (.175)	.53 (.161)	.77 (.058)*	.68 (.110)
GRAM	.85 (.051)***	.72 (.089)*	.73 (.104)	.71 (.097)	.84 (.071)**	.65 (.105)

Note. Aboriginal  $n = 35$ ; Non-Aboriginal  $n = 77$

\* $p < 0.05$ . \*\* $p < 0.01$ . \*\*\* $p < 0.001$ .

Table 31

*DORs of Charges for Risk Assessment Tools in Aboriginal and Non-Aboriginal Participants at Six Months Follow-Up*

Measure	General Recidivism		Violent Recidivism		Theft Recidivism	
	Aboriginal	Non-Aboriginal	Aboriginal	Non-Aboriginal	Aboriginal	Non-Aboriginal
<b>High Binning</b>						
ARMIDILO-G (SPJ)	8.9 (1.8-43.8)	33.0 (6.8-159.6)	6.0 (0.6-60.4)	- <sup>a</sup>	14.0 (1.5-131.9)	28.2 (3.1-260.8)
ARMIDILO-G (Act)	0.9 (0.2-3.7)	3.4 (0.9-12.3)	1.0 (0.1-6.9)	3.6 (0.5-28.2)	3.3 (0.6-17.2)	5.6 (1.1-28.6)
Client Risk	1.0 (0.2-3.8)	6.4 (1.7-23.9)	1.3 (0.2-9.0)	1.7 (0.2-13.1)	3.2 (0.6-19.0)	13.0 (1.5-116.1)
Client Protect	0.4 (0.1-1.5)	4.6 (1.3-16.4)	0.5 (0.1-3.5)	2.1 (0.3-16.1)	1.5 (0.3-7.8)	12.8 (1.4-118.4)
Environ Risk	0.8 (0.2-3.9)	0.3 (0.0-2.2)	0.7 (0.1-7.1)	- <sup>b</sup>	2.1 (0.4-11.4)	0.7 (0.1-6.1)
Environ Protect	0.5 (0.0-5.7)	3.5 (0.8-15.5)	- <sup>b</sup>	- <sup>b</sup>	1.1 (0.1-12.8)	13.6 (2.3-78.8)
CuRV	0.2 (0.0-1.7)	1.4 (0.3-6.3)	- <sup>b</sup>	1.7 (0.1-17.7)	0.4 (0.0-3.9)	2.1 (0.4-12.7)
HCR-20	1.2 (0.3-4.6)	3.4 (1.0-11.7)	1.5 (0.2-10.3)	6.5 (0.6-66.4)	3.8 (0.6-22.0)	2.9 (0.6-14.3)
PCL-R	- <sup>a</sup>	4.0 (.5-31.4)	- <sup>b</sup>	- <sup>b</sup>	- <sup>a</sup>	11.0 (1.3-95.7)
LSI-R	1.2 (0.3-5.3)	1.7 (0.4-7.6)	0.6 (0.1-6.0)	6.5 (0.8-52.9)	1.7 (0.3-9.1)	0.9 (0.1-8.3)
GRAM	8.9 (1.6-51.2)	- <sup>c</sup>	3.7 (0.4-37.6)	-	8.2 (0.9-76.2)	-
<b>Low Binning</b>						
ARMIDILO-G (SPJ)	- <sup>a</sup>	-	- <sup>a</sup>	- <sup>a</sup>	- <sup>a</sup>	- <sup>a</sup>
ARMIDILO-G (Act)	1.0 (0.2-5.0)	8.0 (1.0-65.9)	0.4 (0.1-2.8)	1.4 (0.1-14.3)	- <sup>a</sup>	- <sup>a</sup>
Client Risk	2.7 (0.3-26.9)	- <sup>a</sup>	0.6 (0.1-7.0)	- <sup>a</sup>	- <sup>a</sup>	- <sup>a</sup>
Client Protect	0.9 (0.1-6.0)	- <sup>a</sup>	0.6 (0.1-7.0)	- <sup>a</sup>	- <sup>a</sup>	- <sup>a</sup>
Environ Risk	0.9 (0.2-3.8)	3.1 (0.8-12.5)	0.3 (0.0-2.3)	0.7 (0.1-5.0)	2.1 (0.4-12.2)	4.6 (0.5-41.2)
Environ Protect	0.4 (0.1-1.5)	4.1 (1.0-16.7)	0.5 (0.1-3.5)	0.8 (0.1-6.4)	0.8 (0.2-3.9)	- <sup>a</sup>
CuRV	0.7 (0.1-3.1)	3.1 (0.6-15.4)	1.5 (0.1-15.0)	0.4 (0.1-3.0)	2.9 (0.3-28.0)	- <sup>a</sup>
HCR-20	- <sup>a</sup>	- <sup>a</sup>	- <sup>a</sup>	- <sup>a</sup>	- <sup>a</sup>	- <sup>a</sup>
PCL-R	- <sup>b</sup>	4.0 (0.5-31.4)	- <sup>c</sup>	- <sup>c</sup>	- <sup>c</sup>	11.0 (1.3-95.7)
LSI-R	0.6 (0.0-10.0)	5.1 (0.6-42.4)	0.1 (0.0-2.7)	0.9 (0.1-9.5)	- <sup>a</sup>	- <sup>a</sup>
GRAM	7.4 (0.8-68.1)	16.4 (2.0-136.4)	- <sup>a</sup>	- <sup>a</sup>	3.1 (0.3-29.7)	5.8 (0.7-51.2)

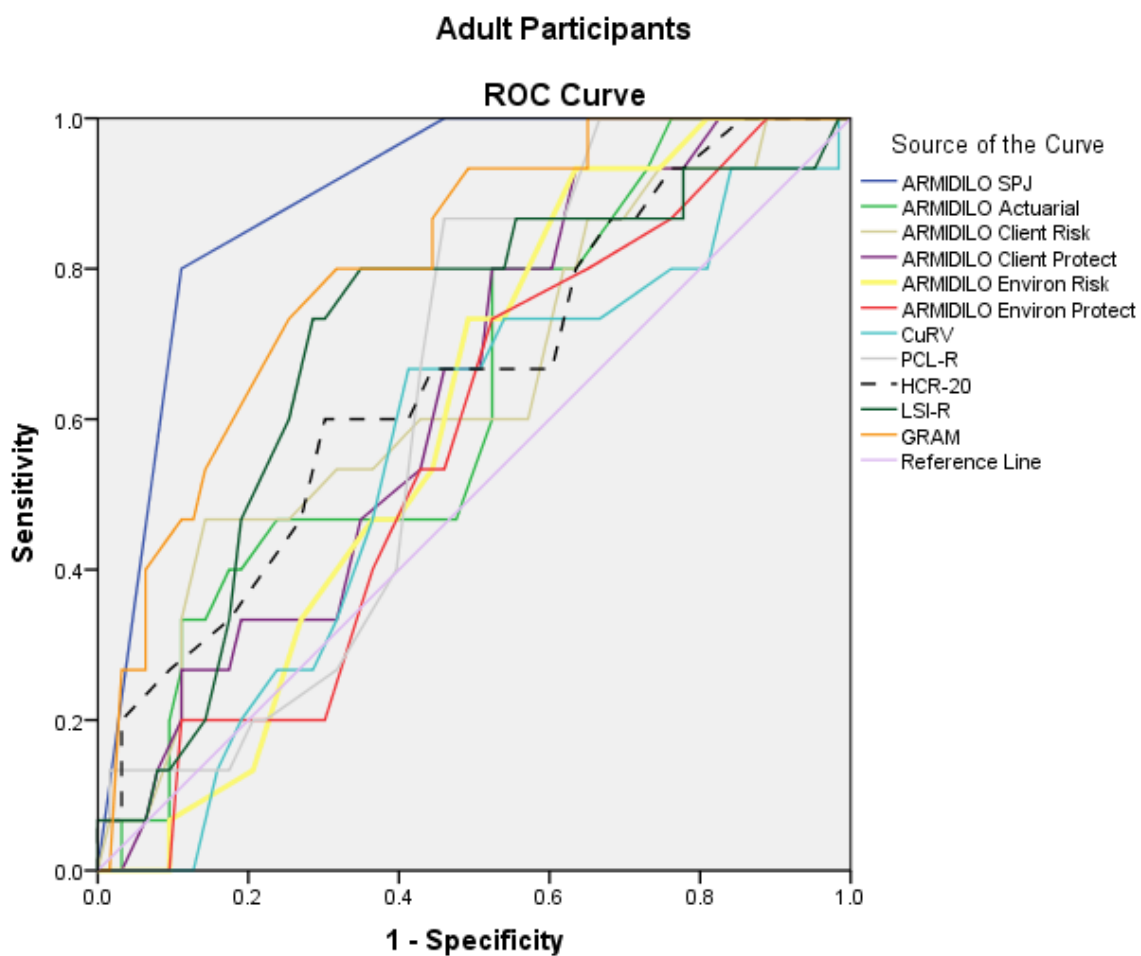
<sup>a</sup> High odds ratio would be expected due to perfect prediction. <sup>b</sup> Very low odds ratio expected due to zero in a cell anticipated to have a high count.

<sup>c</sup> An odds ratio could not be computed as no participant scored in a necessary category for statistic to be conducted.

Some differences were also noted between Aboriginal and non-Aboriginal participants in predicting time to re-offend based on Kaplan Meier survival curves. Both the GRAM and ARMIDILO-G (SPJ approach) predicted time to reoffend significantly for both sub-groups, albeit in both cases at  $p < .001$  for non-Aboriginal and  $p < .05$  for the Aboriginal participants. Whilst not significant using the generalised Wilcoxon, there was a difference between groups for the ARMIDILO-G (actuarial approach) using the Mantel-Cox statistic, with the tool only significantly predicting time to reoffend for non-Aboriginal participants:  $\chi^2_{\text{aboriginal}} = 0.10$ ,  $df = 2$ ,  $p = .95$ ;  $\chi^2_{\text{non-aboriginal}} = 5.67$ ,  $df = 2$ ,  $p = .05$ . All other tools did not significantly predict time to reoffend in either sub-group.

**Age.** Similar to Aboriginal participants, juveniles tended to score significantly higher across risk assessment tools. Unfortunately, analyses were expected to have insufficient power to identify significant findings amongst juvenile participants, as there were only 21 juveniles in the six month follow-up cohort. Subsequently, additional analyses were run for adult participants to the exclusion of juveniles.

Findings for adults were similar to what was found for the entire cohort, as described in Table 28, with AUCs for the GRAM and ARMIDILO-G (SPJ approach) of a large effect size, the LSI-R approaching a large effect size (AUC = .70) and the remainder of tools with AUCs of a medium effect size. Risk assessment tools performed well in predicting theft offences in adults, with all AUCs of a large effect size. No AUC, however, for drug, public order, or justice offences were significant for adult participants. AUCs for adult participants are depicted in Figure 7. As can be seen in Table 33, the DORs for general and theft recidivism in the high binning strategy were consistent with AUCs. Amongst adults, only the ARMIDILO-G (SPJ approach) ( $\chi^2 = 39.00$ ,  $df = 2$ ,  $p < .001$ ) and GRAM ( $\chi^2 = 18.73$ ,  $df = 2$ ,  $p < .001$ ) predicted time to reoffend over six months.



*Figure 7. ROC curve for all risk assessment tools predicting general recidivism over six months for adult participants (n = 78)*

Table 32

*Areas Under the Curve of the Receiver Operating Characteristic for Risk Assessment Tools at Six Months Follow-Up for Adult Participants*

<b>Measure</b>	<b>Total</b> AUC (SE)	<b>Violence</b> AUC (SE)	<b>Theft</b> AUC (SE)
ARMIDILO-G SPJ	.90 (.038)***	.84 (.065)**	.88 (.046)***
ARMIDILO-G Act.	.63 (.075)	.41 (.112)	.81 (.070)***
Client Risk	.64 (.080)	.38 (.121)	.82 (.069)***
Client Protection	.63 (.071)	.46 (.128)	.80 (.066)**
Envir. Risk	.60 (.067)	.41 (.081)	.71 (.071)*
Envir. Protection	.57 (.074)	.38 (.090)	.72 (.069)*
CuRV	.55 (.079)	.38 (.140)	.73 (.064)*
HCR-20	.64 (.066)	.47 (.080)	.73 (.074)***
PCL-R	.66 (.079)	.45 (.123)	.84 (.072)***
LSI-R	.70 (.076)*	.44 (.144)	.83 (.050)
GRAM	.81 (.057)***	.78 (.088)*	.78 (.087)**

*Note.*  $n = 78$

\* $p < 0.05$ . \*\* $p < 0.01$ . \*\*\* $p < 0.001$ .



Table 33

*Comparison of Adult DORs for General, Violent and Theft Charges and Risk Assessment Tools at Six Months*

Measure	General Recidivism	Violent Recidivism	Theft Recidivism
<b>High Binning</b>			
ARMIDILO-G (SPJ)	32.00 (7.2-141.9)	15.47 (1.6-148.8)	33.83 (3.8-301.0)
ARMIDILO-G (Act)	2.83 (0.8-9.5)	0.82 (0.1-7.9)	14.50 (2.6-80.7)
Client Risk	2.46 (0.8-7.7)	0.43 (0.0-4.0)	6.55 (1.2-35.0)
Client Protect	1.07 (0.3-3.6)	0.51 (0.1-4.8)	4.17 (0.9-19.1)
Environ Risk	0.57 (0.1-2.8)	<sup>b</sup>	1.41 (0.3-7.8)
Environ Protect	2.3 (0.5-10.7)	<sup>b</sup>	6.30 (1.2-33.1)
CuRV	0.82 (0.2-4.2)	<sup>b</sup>	2.00 (0.4-11.3)
HCR-20	3.5 (1.1-11.1)	1.21 (0.2-7.7)	16.33 (1.9-141.2)
PCL-R	4.43 (0.3-75.2)	<sup>b</sup>	9.86 (0.6-175.4)
LSI-R	2.36 (0.7-8.3)	0.97 (0.1-9.3)	2.63 (0.6-12.4)
GRAM	9.83 (2.3-41.8)	5.42 (0.8-37.5)	10.67 (2.1-53.8)
<b>Low Binning</b>			
ARMIDILO-G (SPJ)	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>
ARMIDILO-G (Act)	2.46 (0.6-9.6)	0.33 (0.1-2.1)	<sup>a</sup>
Client Risk	4.77 (0.6-39.2)	1.12 (0.1-10.8)	<sup>a</sup>
Client Protect	4.77 (0.6-39.2)	1.12 (0.1-10.8)	<sup>a</sup>
Environ Risk	2.66 (0.8-9.3)	0.52 (0.1-3.3)	6.60 (0.8-56.6)
Environ Protect	1.39 (0.4-4.3)	0.26 (0.0-2.5)	3.90 (0.7-20.7)
CuRV	1.38 (0.4-4.8)	0.29 (0.0-1.8)	<sup>a</sup>
HCR-20	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>
PCL-R	4.43 (0.3-75.2)	<sup>b</sup>	9.86 (0.6-175.4)
LSI-R	1.86 (0.4-9.2)	0.36 (0.1-2.3)	<sup>a</sup>
GRAM	8.13 (1.7-39.0)	<sup>a</sup>	3.00 (0.6-15.9)

Note.  $n = 78$ , <sup>a</sup>High odds ratio would be expected due to perfect prediction. <sup>b</sup>Low odds ratio would be expected due to zero in a cell anticipated to have a high count.

## Discussion

This chapter provided some support for the validity of the ARMIDILO-G in predicting risk of reoffending amongst people with an ID in receipt of forensic disability services in NSW. The ARMIDILO-G, using an SPJ approach, was able to predict risk of general, violent and theft offences at three and six months with a large effect size according to the criteria set by Rice and Harris (2005). Its utility as an actuarial tool, however, was only supported for theft offences at six months, with the actuarial approach for total and client sub-domain scores not producing large and significant AUCs for any other offence type. Unfortunately, without a strictly clinical judgement condition in the study, it could not be determined whether the positive findings for the SPJ approach were due to the tool or clinical judgement of the assessor.

A small number of offences across categories prevented analysis of evaluated tools' performances in predicting a range of offence types. Despite this limitation, all tools, with the exception of the CuRV, demonstrated good predictive validity for theft offences at six months follow-up based on AUCs. The opposite was true for violent offences, with most tools showing poor predictive validity. This was a surprise given Chapter 3 highlighted the HCR-20 had provided good predictive validity for violent offences across a number of previous studies.

Determining whether the ARMIDILO-G as a SPJ tool was able to better predict reoffending compared to other risk assessment tools was compromised by methodological limitations and an unclear pattern of results across timeframes, binning strategy and offences. For example, whilst those rated *high risk* on the ARMIDILO-G (SPJ) were more likely to generally reoffend over six months compared to those rated similarly on the CuRV, LSI-R or HCR-20, it could not be determined if those rated *low risk* were less likely to reoffend on the same tools since DOR could not be calculated for the ARMIDILO-G.

Whilst it was not possible to identify particular tools as having significantly better predictive validity across offences and time frames, a number of tools showed strengths. In particular, the GRAM, using only four static items, provided strong predictive validity statistics across general, violent and theft offences. The effectiveness of the GRAM provides insight into the influence of age, aboriginality, gender and history of offending in the risk of future offending by offenders with an ID.

The following chapter synthesises the findings reported herein with those described earlier in relation to the structure of the ARMIDILO-G and its ecological validity. Strengths and weaknesses of the study are also explored in the context of previous research conducted in the area as described in the systematic review reported in Chapter 3.

## **Chapter 7:**

### **Discussion and Conclusion**

The last decade has seen a growth in interest and research regarding the ability of clinicians to effectively assess, predict and manage risk of reoffending of people with an ID. A number of studies have provided evidence for the validity of current physical and sexual violence risk assessment tools in those with a cognitive impairment (albeit not strictly with those with a diagnosed ID). Recent research has suggested that a tool is likely to provide stronger predictive validity if it is specific to the population being assessed (Singh et al., 2011).

As described in Chapter 3, a number of studies in the past decade have been completed that provide evidence of reliability and predictive validity for mainstream physical and sexual violence risk assessment tools in ID populations. Whilst results have been promising, research has been hampered by a range of methodological issues such as small samples, a lack of detail regarding the sample being assessed, and unequal follow-up periods of participants. Chapter 3 also identified that there has been a lack of validated offender risk assessment tools that measure general or non-violent risk of recidivism (such as theft) that have been specifically developed for those with an ID. There have also been a lack of measures developed that assist with the management of risk of offenders with an ID who are supported in the community.

The aim of this thesis was to assess the validity of the ARMIDILO-G, an adapted version of the ARMIDILO-S developed to help assess and manage risk of short term general recidivism in people with an ID who have previously offended. This thesis explored the ARMIDILO-G's reliability, ecological validity, concurrent and divergent validity as well as its ability to predict the likelihood of general, as well as specific types of offending (including violent, theft, property, justice, drug and miscellaneous offences) over a three and six month period.

Chapter 4 identified that the ARMIDILO-G included a number of features likely to support the assessment of risk of recidivism by people with an ID. In particular was the tool's ability to support risk management. It was acknowledged that whilst risk assessment does not necessitate the management of risk, inclusion of such capacity in a tool is important given the potential that those with an ID may be supported by services post-assessment (whether that be disability or offender rehabilitation). The ARMIDILO-G supports risk management through including only dynamic variables. A focus on dynamic variables mean areas of risk can be targeted for intervention. The tool's inclusion of items addressing the PIC-R and GLM offender rehabilitation theories also provides additional support for the management of identified risk. Furthermore, the tool considers protective variables given the potential persecution of those with an ID and risk they may receive harsh interventions. Finally, the ARMIDILO-G also includes environmental variables in recognition of the influence of the ecology in the management of behaviour of those with an ID.

## **Summary of Results**

### **Participant Characteristics**

Previous meta-analyses identified the critical influence demographic and offence characteristics play in validating risk assessment tools and processes (Singh & Fazel, 2010). The validity and reliability of the ARMIDILO-G was assessed using a sample of people with a diagnosed ID who had a history of incarceration and were being supported by a NSW community forensic disability program. This sample was found to closely reflect the characteristics of samples used in previous studies examining the predictive validity of offender risk assessment tools for those with an ID (as described in Chapter 3). Features of the sample used herein that closely paralleled previous studies were that participants had, on average, a mild

level of ID, an average age in their early 30s, were over 90% male and were primarily Caucasian. These demographic features also appear consistent with reported characteristics of ID populations in contact with the criminal justice system in NSW (Baldry et al., 2012). Unlike many previous studies (e.g., Quinsey et al., 2004), the vast majority of the sample reported herein had significant histories of drug and alcohol abuse (89.93%). Whilst this is consistent with the general offender population, it is not a characteristic common amongst previous studies focusing on those with an ID (McGillicuddy, 2006). Furthermore, the current sample had higher rates of previous offending compared to samples in previous studies, given entry into the program from which the sample was obtained was reliant on histories of significant contact with the criminal justice system and incarceration (Baldry et al., 2013). Whilst the impact of these differences will be discussed later, the similarities in demographic characteristics provides support for the representativeness of the sample used herein to those with an ID supported by forensic disability services elsewhere and therefore the relevance of the findings of results to these populations.

### **Does the ARMIDILO-G Predict Short-Term Recidivism?**

A primary aim of this thesis was to determine whether the ARIDILO-G was able to reliably predict the likelihood of general recidivism in the short term amongst people with an ID who have a history of offending. This thesis used two base rate independent statistics to determine whether the tool could predict likelihood of recidivism – the AUC and DOR. Findings from Chapter 6, provided an unclear picture as to the ability of the ARMIDILO-G to predict recidivism due to relatively weak statistics and methodological issues. The ARMIDILO-G's effectiveness appeared dependent on the method of risk assessment (actuarial versus SPJ approaches), the length of follow-up and the type of offence assessed.

### **Does the SPJ Approach Predict Recidivism Better Than Actuarial Methods?**

The ARMIDILO-G, when using a SPJ approach, demonstrated a good ability to predict new offences at three and six month's follow-up across a range of offences. The AUCs for the ARMIDILO-G used in a SPJ approach were significant, of a large effect size and the highest of any tool evaluated for general, violent, theft and public order offences across both three and six month follow up periods. The range of these AUCs (.80 - .87) were similar to that found by Blacker (2009) for the ARMIDILO-S for sex offences (acute = .75; stable = .86). The strength of the SPJ approach was also supported by DORs when using low and high probability bins, with participants rated *high risk* being, on average, over ten times more likely to reoffend at three months and twenty times more likely to reoffend than those rated *moderate* or *low risk* at six months follow-up. The SPJ approach was also able to effectively identify who would not offend, as no participant rated *low risk* went on to reoffend. Unfortunately, its perfect prediction prevented DORs from being calculated. It also could not be determined if the SPJ approach was able to predict recidivism for other offence types (such as property, drug and justice offences), as whilst resulting in some high AUCs (e.g., property and public order), they were not statistically significant due to a small sample and few offences.

The strong result of the SPJ process contrasted with that of the actuarial approach to the ARMIDILO-G. The actuarial approach resulted in no AUCs of a large effect size at three months that were significant and only one significant and large effect size (for theft offences) at six months follow up. This finding raises concerns for the use of the ARMIDILO-G as an actuarial measure to predict risk of offending (other than for theft offences). Furthermore, DOR confidence intervals did not overlap between SPJ and actuarial approaches for general offending when examining high risk of offending at six months. This result indicated the SPJ approach performed better than the actuarial approach at a level of statistical significance.

The significant difference in performance between approaches raises serious concerns for the ARMIDILO-G since the SPJ approach should rely on the findings of items and therefore should be strongly correlated with actuarial scoring. If taken literally, it would suggest that clinicians should ignore the actuarial results of the ARMIDILO-G. The need to ignore actuarial results may prove a particular problem for novice therapists who may be more likely to weigh items in an additive manner, consistent with an actuarial approach.

It is unclear why the SPJ approach was so much more successful than the actuarial approach. A major methodological flaw in the study was the lack of a pure clinical judgement condition to determine whether the outcomes of the SPJ approach were due to the tool or the clinical judgement of the clinician. As, it is also possible the improved predictive ability using an SPJ approach was related to the knowledge and experience of the assessor, as opposed to the tool itself, given the author and the independent assessor had worked within the service for an extensive period and had considerable experience in conducting risk assessment with the target population. It is therefore possible that it was clinical judgement and not mechanical approaches that provided the best predictive validity.

In spite of this flaw, the SPJ approach was hypothesised to outperform the actuarial approach since the ARMIDILO-G had been developed with the intention of being used as a SPJ tool, allowing for emphasis on identified critical items. Furthermore, the greater predictive validity of SPJ approaches has previously been proposed when assessing ID populations given the range of unique considerations likely to affect risk for this population (Boer et al., 2010b).

The poor performance of the AMRIDILO-G using an actuarial approach could not be attributed to the actuarial processes in general given the GRAM performed at a level consistent with the ARMIDILO-G (SPJ approach). The similar performance reflects findings in the general



offender population for violence risk tools, with Singh et al. (2011) finding no difference between SPJ and actuarial approaches in their ability to predict violent recidivism.

### **Does the ARMIDILO-G Predict Recidivism Better than Other Risk Assessment Tools?**

It was also the aim of this thesis to determine whether the ARIDILO-G predicted short-term recidivism better than well-established offender risk assessment tools developed for the general population and violence tools developed for those with an ID. Whilst tools predictive validity varied according to offence type and timeframe, DORs generally showed few significant differences between the ARMIDILO-G and other risk assessment tools in their ability to predict offending when used as actuarial tools. Furthermore, due to the small number of reoffences, the validity of risk assessment tools could not be determined for offences other than violent, theft and general offences.

In contrast to previous studies cited in Chapter 3, the HCR-20 performed relatively poorly in predicting risk of general and violent recidivism over both follow up periods. The HCR-20, however, did predict likelihood of theft offences with a large effect size. This poor performance, however, may have been owing to the tool being used in an actuarial manner, and not an SPJ approach, as it is meant to be used. The significant difference in predictive validity between SPJ and actuarial processes when using the ARMIDILO-G provides support for this argument.

The poor result of the HCR-20 may have also been due to the current study's focus on short-term risk, with previous studies showing stronger predictive validity for the HCR-20 over periods greater than a year (Chu et al., 2013b). As discussed previously, more recent studies have suggested this is due to static items being more attuned to predicting long term risk, with Chu et al. (2013a) finding superior performance of the HCR-20's dynamic sub-domains over

shorter time periods. Analysis of the HCR-20's sub-domains, however, question this hypothesis, as there was little difference between the static (*historical*) and dynamic (*clinical* and *management*) sub-domains across offence types.

The LSI-R also performed at a level lower than was expected, with the DOR using the high binning strategy for general reoffending at six months suggesting a performance significantly lower than the ARMIDILO-G using an SPJ approach. Although, the AUCs (of medium effect size) obtained for general reoffending were consistent with those reported in a recent meta-analysis examining the predictive validity of the tool for the general offender population (Olver et al., 2014) and was still higher than the ARMIDILO-G using an actuarial method.

This study found the PCL-R performed at a level that was similar to the HCR-20 and LSI-R, with only a significant and large effect size for theft offences at six months follow-up. This is relatively consistent with previous studies, as described in Chapter 3. Previous studies, however, have tended to report higher AUC, albeit not for such short time periods. Like most tools, the predictive validity of the PCL-R appeared to improve with time. This was to be expected given that PCL-R items consisted primarily of static factors. It is unclear though, if the static nature of items played a significant role given that the more static, historical items of the PCL-R are in facets three and four (behaviour and lifestyle), which, in this study performed better (albeit not at a level of statistical significance).

Even though the aforementioned risk assessment tools generally had lower AUCs than the ARMIDILO-G (particularly when used in an SPJ manner) it was only the CuRV that performed poorer at a statistically significant level for both general and theft offences at six-month follow-up. This result was unsurprising given the tool had not been developed to predict theft or general offending, but rather predict short-term violence risk in institutional settings.

Despite its purpose, it also performed no better than chance in predicting violent offending at either three or six month follow-up. This may highlight a qualitative difference in the risk associated with violence (and its risk factors) for institutional violence as opposed to that which occurs in the community.

The relatively poor performance of most tools was in contrast to the performance of the GRAM, which performed at a level similar to the ARMIDILO-G when using an SPJ approach. This was somewhat surprising given the GRAM correlated relatively poorly with the ARMIDILO-G and is a static actuarial tool (the opposite of the ARMIDILO-G). In addition, the GRAM outperformed the ARMIDILO-G (actuarial approach) across most offence types, albeit not at a level of statistical significance using DORs. This result emphasises the importance of static variables generally in risk of recidivism, but also challenges the risk status / state framework proposed by Douglas and Skeem (2005) which suggests dynamic factors should influence short term risk to a greater extent than static factors. The positive results of the GRAM also emphasise the similarities of ID to general offender populations in factors that promote risk of recidivism.

The strong result of the GRAM also provided additional understanding of the roles that age, Aboriginality, gender and history of offending play in the risk of reoffending for those with an ID, as these factors make up the GRAM. The role of Aboriginality was found to be particularly important, with Aboriginal participants having significantly higher risk scores across all measures (with the exception of the CuRV). Critically however, tools did little better than chance at predicting general recidivism for Aboriginal participants with the exception of the GRAM and the ARMIDILO-G. The GRAM still remaining significant when it was only using age, gender and history of offending as items attests to the predictive ability of these variables amongst Aboriginal people with an ID.

### **Do Environmental Variables Help in Predicting Risk of Short Term Recidivism?**

Another primary goal of this thesis was to explore the relationship between client and environment domains of the ARMIDILO-G in order to better understand the influence of individual and ecological factors in the assessment and management of risk of recidivism for those with an ID. Whilst it had been hypothesised that environmentally focused items related to the built environment and service supports would improve the predictive validity of the tool, the significant difference in accuracy between SPJ and actuarial processes prevents conclusion from being made about the utility of environmental factors in predicting risk of reoffending. Examination of actuarially determined sub-domain scores suggested that these items actually detracted from the ARMIDILO-G's predictive validity, with the total score invariably having lower AUC scores than the client risk and protective scores across offence types at both three and six month follow-up. In addition, environment risk and protective sub-domains tended to predict recidivism no better than chance for a number of offence types, including general offending at both three and six months follow-up and in the case of violence at three months, gave an inverse prediction of risk. This was not expected given the anticipated relationship the environment had in managing risk for offenders with an ID.

In examining the results of the factor analysis of the ARMIDILO-G at Chapter 4, many of the *environment* items loaded with other similar *client* items (e.g., access to drugs and alcohol loaded onto a factor that also included risk and protective factors associated with drug and alcohol use). Furthermore, the factor structure did not reflect a client / environment split, but a four factor structure that included a staffing attribute factor (including staff knowledge, attitudes and communication) a client treatment factor, a finance orientated factor and one associated with drug and alcohol use. Whilst these results suggest a lack of a unique influence of environmental factors in predicting risk when used in an actuarial manner, their presence in determining risk

using an SPJ approach provides some indirect evidence that they may still play an important role in predicting risk of recidivism. This finding is also consistent with current risk assessment practices for the general offender population using an SPJ approach, where environmental variables are often not considered as risk factors, but are considered in scenario planning as environments in which risk factors may influence offending (Douglas et al., 2013).

### **Do Protective Variables Assist in Predicting Risk of Short Term Recidivism?**

Whilst it was hypothesised that protective factors would improve prediction, results provided a complex and unclear picture. Factor analysis of the ARMIDILO-G did not support the separate influence of risk and protective factors. Instead, risk and protective variables tended to be closely but inversely correlated, implying they sat at either end of the one continuum of risk. Additional support for this idea was that the most reliable factor structure for the ARMIDILO-G was when risk and protective items were amalgamated to create client and environment composites. Furthermore, risk and protective sub-domains performed in a similar manner in predicting risk of short term recidivism across offence types, with AUCs for client risk and protective sub-domains being of a medium effect size for general recidivism and large for theft offences. Both AUCs and DORs indicated better, but not statistically significant results for risk over and above protective client and environment sub-domains. The similar influence of risk and protective variables, however, does not provide conclusive evidence that protective factors do not further add to the assessment of risk. Rather, it is possible that assessors viewed protective factors as the absence of risk and therefore scored them as such. This view, however, could not be evaluated in the current study.

### **Does the ARMIDILO-G Predict Imminence of Reoffending?**

All tools performed poorer at three months compared to six months follow up. Only the GRAM and ARMIDILO-G (SPJ approach) performed well across offences at three months

(albeit better at six months), with tools such as the LSI-R demonstrating good accuracy for some offences (theft) but operating at chance for others (violence). When examining survival curves, the ARMIDILO-G, (SPJ approach) and the GRAM were effective in predicting which participants would and would not be charged with thefts, violent offences or general offences, over the six month period. The ability of the SPJ approach to predict time to reoffend was expected, as information within the risk assessment is likely to provide a great deal of qualitative information about the immediate status of an individual. Being a static measure, however, the GRAM was not anticipated to perform as well as it did over such a short period of time. This raises questions over the role of dynamic versus static variables in predicting short term risk. It is possible, however, that the improved predictive validity over time was an artefact of having a small sample size and few participants offending during the follow up period.

### **Implications for Practice**

This study provides a range of implications for practice both specifically in relation to the use of the ARMIDILO-G, but also more generally in the assessment and management of risk of recidivism of offenders with an ID in the community. Overall, this study suggested caution should be applied when using any of the tools evaluated in this study to predict risk of reoffending for those with an ID over a six month period, and particularly a three month period in Australia, given the inconsistent findings across offence types and timeframes.

Whilst predictive validity statistics provided support for the use of the ARMIDILO-G in a SPJ approach for predicting general, violent and theft offences over a three and six month period, support for its use is limited to when the assessor has extensive experience in conducting risk assessments and working with those with an ID who offend. This was subsequent to a lack of a pure clinical judgement condition being utilised in the study. The study also suggested that

where an actuarial approach is required in applying the ARMIDILO-G (possibly owing to inexperience of an assessor), emphasis should be placed on client items above environment items.

The study raised question as to the structure of the ARMIDILO-G, questioning whether risk and protective factors provide unique contributions to the assessment of short term risk of reoffending by those with an ID. Given the pitfalls of emphasising risks associated with people with an ID, this finding suggests risk assessment reports could be written with emphasis on protective rather than risk features to ensure intervention is consistent with the needs and rights of those with a disability.

This study suggested that where prediction without management of risk is required, use of the GRAM is recommended, given the limited information required and speed at which it could be completed, yet similar predictive ability to other tools for adults with an ID. The ability of the ARMIDILO-G to predict as effectively as the GRAM despite incorporating only dynamic variables provides argument for its use when the assessed individual is in receipt of rehabilitation (disability or forensic) services, given the tool provides direction on what risk and protective variables should be targeted for intervention.

A unique finding of this study was the strong validity for a number of tools in predicting risk of theft offences. To date, no study has specifically explored this type of offending in those with an ID despite theft being a prevalent crime in the community (Judicial Commission of New South Wales, 2012). The ARMIDILO-G reflected particularly strong predictive validity using both SPJ and actuarial methods, with the actuarial method being the largest AUC for theft at six months follow up of any tool used in an actuarial manner.

Whilst the GRAM and ARMIDILO-G were found to have good predictive validity, the LSI-R, a tool that is routinely used within NSW Corrective Services and is relied upon to inform

a range of decisions regarding access to services and release, was found to only have moderate ability to predict risk of general recidivism and poor ability to predict violent recidivism at six months follow-up. This poses a significant concern for current practice as it suggests the tool may be aiding in poor outcomes regarding a range of issues. This study suggests that it may be more appropriate to use the GRAM or ARMIDILO-G in place of the LSI-R for adults with an ID.

A critical implication of this study is it produced norms and odds ratios for the tools evaluated. To date, no norms or odds ratios have been made available for the ARMIDILO-G, LSI-R, GRAM or CuRV for those with an ID. These statistics are likely to aid clinicians preparing reports for court and will also provide decision makers with practical information that can be used to help inform decisions regarding release, priority for service and treatment.

More broadly, an implication of this study is acknowledging the significant role Aboriginality plays in the ability to predict risk of recidivism in people with an ID. This study found that most tools were less predictive of most types of offences for Aboriginal participants. This raises a question as to the applicability of previous studies examining the predictive validity of risk assessment tools for those with an ID that were conducted outside of Australia. This finding highlights the need for studies examining the validity of offender risk assessment tools to be conducted with Australian samples (or in the jurisdiction in which it is intended to be applied) before conclusions can be made about their validity for the population of interest.

### **Limitations of the Study**

A number of limitations were imposed on the study by choice of sample. The selection of participants from the NSW community forensic disability program may have constrained the sample to those that were generally of higher risk given the program's eligibility criteria. Their



high risk may have affected the assessment of predictive validity by causing a ceiling effect such that an insufficient spread of risk scores prevented a true comparison of those at low, medium and high risk. In addition, this sample had a large percentage of Aboriginal participants in drop in support known to be transient. This increases the likelihood that some participants may have been interstate for periods of the follow-up and thus may have been charged with offences that were otherwise not identified in the study. A further limitation of the sample was its size. Whilst above the average size of studies examining the predictive validity of offender risk assessment tools for those with an ID ( $M = 8.72$ ; as described in Chapter 3), the sample size used in this study was insufficient to adequately explore some of the sub-samples (in particular juveniles and females). Similarly, a short follow-up period and small sample size meant few (or no) offences for some offence categories, resulting in an inability to assess risk assessment tools predictive validity for offences other than theft, violence and general offending over the short term. Short follow-up periods also meant an inability to identify more serious offences given the low base rates for such crimes and lengthy processing times for such offences to be recorded.

Another limitation related to taking the sample from an existing program was the manner in which ARMIDILO-G assessments were conducted. Information about the participant and their environment came in large part from the views of staff supporting the individual. Whilst training was provided to staff on a regular basis during the study, the quality of information obtained could not be guaranteed. In addition, it was suspected that staff would often under-report concerns about the participant or the environment for fear of negative judgement by clinical staff about the quality of care provided, leading to inaccurate assessments of risk. Another major limitation of the study was the effect that completing the ARMIDILO-G had on future risk of recidivism. Whilst the results of the other tools were not relayed to clinical teams, the results of the ARMIDILO-G assessment were used in service and treatment planning. Whilst

previous research has challenged the ability of risk assessments to affect the likelihood of future recidivism (Troquete et al., 2013), it is possible that identification of higher risk participants may have led to interventions that reduced subsequent risk. Equally, identification of low risk participants may have led to their deprioritisation for service, subsequently increasing their risk.

A number of limitations of the study occurred subsequent to how risk assessment tools were applied. In particular, whilst a number of SPJ or adjusted actuarial tools were applied, they were used in an actuarial manner. This methodology was taken given the inability to discount the clinical judgement made using the ARMIDILO-G. For example, it would be impossible to ignore the information obtained from the ARMIDILO-G when coming up with a SPJ based risk rating for the HCR-20 following the determination of risk using the ARMIDILO-G. The result was that these tools were not evaluated in a manner in which they might be used in practice, thereby limiting the implications of findings for practice for these other tools. Associated with this issue was that the ARMIDILO-G was used in an SPJ and actuarial manner, but without an additional control for general clinical judgement. It was not possible to determine the degree to which the risk rating using the SPJ approach was the result of the structure of the tool versus the assessor's clinical judgement. Whilst inter-rater reliability helped ascertain that the positive outcome using the SPJ approach was not purely due to the knowledge of the author, the similar experience and training of the independent rater compromised the ability of the study to determine whether the improved prediction was due to the ARMIDILO-G or the attributes of the clinicians. Finally, there were also limitations in the way the GRAM was conducted, given that history of offending was determined by file information rather than official criminal history. It is anticipated that accurate offence data may have further improved the accuracy of the tool.

### **Strengths of the Study**

Despite a range of limitations, this study incorporated a number of unique strengths that have otherwise not been included in previous similar studies. Firstly, unlike much of the research in this field, participants had a confirmed diagnosis of ID. Chapter 3 highlighted that most risk assessment research to date has not used a strict diagnosis of ID. Inclusion of this characteristic provides greater clarity of findings for those specifically with an ID. Secondly, again unlike much of the research in this area, sufficient detail was provided regarding the sample's demographic and offence related history. This provided a level of analysis regarding demographic and offence related features and the way they impact on risk assessment that has not been examined in previous studies. This led to the identification of Aboriginality and youth as critical features that influence the validity of risk assessment tools for those with an ID. It also highlighted differences service features can play in risk ratings and possibly intervention (for example, higher intensity services reported greater number of protective factors and lower number of risks).

An important strength was that charges and convictions based on official criminal records were used as the dependent variable. Use of official criminal records allowed for a detailed analysis of the type of offending that different tools were able to predict. This facilitated an examination of a broad range of offence types that has otherwise not been conducted for people with an ID when examining the validity of risk assessment instruments. Furthermore, prospective methodology was employed. This meant assessors were completely blind to outcome – a feature that has been rarely confirmed in similar previous research. The method of follow-up was also strengthened by use of a consistent follow-up period (three and six months). Much research to date has had uneven follow-up periods for participants, increasing variability into the study. Methodology was also improved on from previous studies by including a range of

predictive validity statistics, acknowledging the limitations of the AUC statistic. Furthermore, use of a three and six month follow-up allowed for examination of time as a variable in the prediction of recidivism amongst those with an ID. Finally, risk was defined and measured in different ways to assist with examination of ecological validity, given likelihood is only one of a number of questions that needs addressing when risk of recidivism is assessed.

### **Directions for Future Research**

Whilst the ARMIDILO-G using a SPJ approach was found to have good predictive validity over the short term, it is essential that future research examine the ARMIDILO-G's ability to predict risk of recidivism over a longer period of time. This would help identify the ability of the tool to predict offences that have low base rates for offending (such as sexual offences) or where there might be a slow build up to offending. A longer follow-up would also result in a greater number of offences being accumulated, allowing for a more detailed analysis of sub-groups offence patterns and the tool's ability to predict recidivism amongst sub-groups. Greater time would ensure clarification around which individuals pose a risk and under which circumstances they might offend, given that time produces greater opportunities and exposure to factors that might trigger offending.

A small number of juvenile participants meant there was insufficient data to determine whether the tools were valid for use on juveniles with an ID. Subsequently, it is imperative that future research explore the development and validation of tools that target juveniles with an ID given the significant needs and vulnerability of this sub-population.

The current study used Police charge as the outcome of interest. Those using offender risk assessment tools, however, would generally like to know not just who might be charged with an offence, but who might exhibit a certain behaviour (such as violence). It is therefore

important that future research examine incidents of behaviour and not just formal charges. Examination of reported behaviour for those with an ID is important given research that those with an ID might not get charged by Police following commission of an act that might be deemed criminal (Lyall et al., 1995).

Whilst the current study raised concerns about the unique contribution of protective variables in the prediction of recidivism, the inclusion of such variables in risk assessment is suspected to be beneficial for those with an ID beyond prediction. Rationale for their inclusion was their likely influence in promoting more positive approaches to intervention and reducing stigmatisation towards those who display challenging behaviour or who have had contact with the criminal justice system. Subsequently, it will be important that future research examines the effect of including protective factors into risk assessment tools, particularly the effect it has on the intervention, treatment and subsequent behaviour of the assessed person.

A clear limitation of this study was the inability to determine whether the success of the ARMIDILO-G using an SPJ approach was owing to the structure of the tool or to the clinical judgement of the assessor. Future research needs to ensure both clinical judgement and SPJ approaches are utilised to account for the role of unstructured clinical judgement. Additionally, future research needs to further understand the process of the SPJ approach to understand the decision making processes and what elements of decision making provides the strongest predictive validity. This should include qualitative research as well as experimental, potentially laboratory based research to identify important biases or cognitive methods or strategies used by more accurate raters. Furthermore, categorisation of risk has been primarily researched, whereas the SPJ approach to risk assessment includes a range of steps, including formulation and scenario planning. Future research must ensure these elements are included to take in the argued benefits of the SPJ approach.

Examination of the ARMIDILO-G's factor structure suggested the current structure is not representative of the way it is scored. It is important that further work on the structure of the ARMIDILO-G is conducted to ensure the most useful items are included and it is set out in a way such that raters do not rate protective items merely as the absence of risk (as hypothesised based on the results of the factor analysis). When this result is combined with the fact that the GRAM performed as well as the ARMIDILO-G across many offences, despite moderate correlation, there is strong argument for examining a convergent approach to risk assessment where the GRAM and ARMIDILO-G are used together (either in their entirety or part thereof) to inform risk of recidivism for those with an ID. Such an approach could use either an actuarial, a SPJ or some combination using those variables that have the strongest correlation with future offending.

Finally, much of the rationale for a dynamic and SPJ approach to risk assessment is the effect it can have on risk management. As yet, very little research has been done into how risk assessment can promote risk management. To date, no study has examined the effect of risk assessment on the reduction of offending behaviour in those with an ID. This is a critical area of research, as there appears to be little relevance to risk assessment if it does not help towards reducing the risk of future offending.

In conclusion, this study addresses a number of gaps in current research and clinical practice regarding the assessment of risk of recidivism for people with an ID who have a history of offending behaviour. The study, however, highlights the need to progress this work into the direction of risk management and the reduction of challenging behaviour that results in people with an ID being exposed to the criminal justice system. This research agenda is likely to benefit clinicians, the community and people with an ID such that appropriate decisions can be made that keep everyone involved safe, whilst ensuring individual rights. It appears this can

only be done with collaborative research that includes large samples of people with a diagnosed ID using comprehensive client, environment and offence data.

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## Appendices

## **Appendix A**

### Systematic Review Protocol

## **Appendix A**

### **Review Protocol**

#### **Method**

*Risk terms*

*AND*

*Disability Terms*

*AND*

*Offence Terms*

#### **Search terms**

##### Risk Assessment

*All Terms*

risk assess\* or

risk manage\* or risk function\* or risk equation\* or risk calc\* or risk scor\* or risk predict\* or risk factor or risk chart\* or risk appraisal\* or prediction model\* or risk algorithm or predictive validity or actuarial or area under curve or AUC or roc curve or static risk or dynamic risk or clinical judgement or structured professional judgement or HCR\* or SVR\* or static 99 or VRAG or SARA or SAM or RSVP or SORAG or ARMIDILO or PCL\* or LSI\* or YLS CMI or LSCMI or VORAG or VORAS or TIPS-ID or stable 2000 or acute 2000 or SAVRY or DRAMS

*Wildcards*

risk assess\* or risk manage\* or risk function\* or risk equation\* or risk calc\* or risk scor\* or risk predict\* or risk chart\* or risk appraisal\* or prediction model\* or HCR\* or SVR\* or PCL\* or LSI\*



*Highest loading wildcards* (to be used in databases that can only take a maximum of 3 wildcards).

risk assess*	10111
risk manage*	4027
PCL*	1214 (removed as includes 1212 when used without wildcard)
prediction model*	785

This list includes terms from Matheny M, McPheeters ML, Glasser A, et al. Systematic Review of Cardiovascular Disease Risk Assessment Tools [Internet]. Rockville (MD): Agency for Healthcare Research and Quality (US); 2011 May. (Evidence Syntheses/Technology Assessments, No. 85.)

## Disability

### *All Terms*

retard\* OR mental\* disab\* OR mild disab\* OR moderate\* disab\* OR severe\* disab\* OR profound\* disab\* OR multipl\* disab\* OR intellectual\* disab\* OR developmental\* disab\* OR substantial\* disab\* OR cognitive disab\* OR mild\* handicap\* OR moderate\* handicap\* OR severe\* handicap\* OR mental\* handicap\* OR multi\* handicap\* OR profound handicap\* OR developmental\* handicap\* OR developmental\* delay\* OR delay\* development OR mental\* delay\* OR intellectual\* delay\* OR mental\* impair\* OR intellectual\* impair\* OR cognitive impair\* or learning disabilit\* or developmental disorder\* or learning difficult\* or mental deficienc\* or cognitive disabilit\* or cognitive disorder or mental handicap or autis\*

### *Wild Cards*

retard*	48353
cognitive impair*	26305
autis*	25557 (removed due to very low number of those with autism in the criminal justice system) (Ageing, Disability & Home Care, 2012)
learning disabilit*	21863

This list includes terms from Robert W. Sandieson, Lori C. Kirkpatrick, Rachel M. Sandieson, and Walter Zimmerman (2010). Harnessing the Power of Education Research Databases With the Pearl-Harvesting Methodological Framework for Information Retrieval. *The Journal of Special Education* 44(3) 161-175.

### Offence

#### *All Terms*

recidivism or forensic or reoffend\* or crimin\* or delinquen\* or felon\* or incarcerat\* or inmate\* or gaol\* or jail\* or penal or prison or probation or remand\* or correction\* or convict\* or conduct disorder or offen\* or crime\* or challenging behavio\* or behavio\* problem

#### *Wild Cards*

crimin*	40398
offen*	33344
crime*	32868

This list includes terms from Fitzpatrick R, Chambers J, Burns T, Doll H, Fazel S, Jenkinson C, et al. (2010) A systematic review of outcome measures

used in forensic mental health research with consensus panel opinion. *Health Technology Assessment* 14(18) 1-94.

## ***Search strategy***

### Sources

Bibliographic databases:

- PsycINFO
- National Criminal Justice Reference Service (NCJRS)
- MEDLINE
- Trove (<http://trove.nla.gov.au>) – which includes the Australian National Bibliographic Database (ANBD)
- Web of Knowledge
  - Web of knowledge recognises search phrases through use of quotation marks around terms. Where phrases were identified as a term these were entered into Web of Knowledge with quotation marks around it.
- CSA Illumina – which includes the International Bibliography of the Social Sciences (IBSS)
  - Issue: 579 references were identified in the search, however these could not be extracted on 24/06/2012 due to an error in the database.
  - Solution: This database was excluded from the search.
- DART
  - Issue: DART would only allow one search term per search.

- Solution: The search term with highest number of hits within DART from each search domain was used. These were risk assessment, disab\* and offend\*.
- Google Scholar
  - Issue: Google Scholar could not manage multiple search terms under each search domain of risk assessment, disability and offending.
  - Solution: The top search term for each search domain was used. These were risk assess\*, retard\* and crimin\*
  - Issue: Wild cards cannot be used in Google Scholar.
  - Solution: Terms with the most hits underlying the wildcard were used. The most hits came from terms "risk assessment", retard and criminal and were thus used in the search.
  - Issue: Multiple references cannot be exported from Google Scholar to Endnote.
  - Solution: Publish or Perish (*Harzing, A.W. (2007) **Publish or Perish**, available from <http://www.harzing.com/pop.htm>*) was used to extract references from Google Scholar.
  - Issue: Google Scholar and Publish or Perish only show the top 1000 references rated by relevance.
  - Solution: The top 1000 references were imported into Endnote. The last 100 references were examined for relevance. Of the last 100 references imported based on relevance 0% met inclusion criteria, providing evidence the last 150 references that could not be obtained were unlikely to be relevant to the search.
- JSTOR

- Issue: JSTOR cannot use any more than three wildcards. Terms that received the highest count were selected as the three wild cards.
  - Risk: "risk assess\*"
  - ID: retard\*
  - Offending: crimin\*
- Issue: There is limited space for each search domain.
- Solution: The search terms with the highest relevance were used
  - Offending: recidivism or forensic or reoffend or reoffending or offend or offending or offender or crimin\* or delinquent or felony or incarceration or inmate or jail or prison or probation or remand
  - Disability: retard\* or "intellectual disability" or "learning disability" or "learning disabilities" or "intellectual disabilities" or "mental handicap"
  - Risk assessment: "risk assess\*" or "risk management" or "risk calculation" or "risk score" or "risk prediction" or "risk factor" or "risk appraisal" or "prediction model"

Grey literature:

- American Association on Intellectual and Developmental Disabilities (AAIDD)
- Canadian Association for Community living ([www.calc.ca](http://www.calc.ca))
- Department of Ageing, Disability and Home Care intranet
- <http://www.sexual-offender-treatment.org/>
- <http://www.forensicnetwork.scot.nhs.uk/library/learningdisabilities.html>

- Reference lists of previous reviews and relevant studies.
- Contact with experts and NGOs in the field.
- Craig, L.A., Lindsay, W.R. and Browne, K.D. (2010). "Assessment and Treatment of Sexual Offenders with Intellectual Disabilities: A Handbook".

## **Appendix B**

### **Inclusion/Exclusion criteria**

	<b>Inclusion</b>	<b>Exclusion</b>
<b>Population</b>	<p>People described as offenders or those displaying offending behaviours labelled with an intellectual disability/ with a traumatic brain injury / with an IQ below 70 / with a cognitive disability / with a developmental disability</p>	<p>Offenders who do not have a label of intellectual disability/ on the autistic spectrum/ with a traumatic brain injury/ label of cognitive disability/ IQ below 70.</p> <p>Offenders with a physical disability or mental illness that is not comorbid with an intellectual disability.</p>
<b>Exposure</b>	<p>Administration of a risk assessment (including risk of general risk/recidivism).</p> <p>Actuarial and structured clinical assessments</p> <p>Application of an actuarial model with potential risk factors for recidivism</p>	<p>No risk assessment administered.</p> <p>Unguided clinical judgment assessments.</p> <p>Risk assessment for suicide/self-harming behaviours.</p> <p>Offence related assessment</p> <p>Attitudinal assessment</p>
<b>Outcomes</b>	<p>Self-reported changes in offending behaviour.</p>	<p>No reported recidivism/ reoffending/</p>



	Recorded rates offending behaviour/recidivism/challenging behaviour.  Recidivism/ reoffending/ reconviction/ caution/ institutional incidents	reconviction/cautions/ challenging behaviour.
<b>Study design</b>	Cohort studies  Case control studies,  Meta-analysis	Narratives, reviews, editorials, commentaries or other opinion papers.
<b>Settings</b>	No restrictions (community, prisons, hospitals etc.)	
<b>Language</b>	No restrictions	
<b>Dates of publication</b>	No restrictions	

### Inclusion / Exclusion Form

<b>Author(s):</b>	
<b>Year:</b>	
<b>Title:</b>	
<b>Source:</b>	
<b>Database:</b>	

	Inclusion criteria	Criteria met?		Exclusion Reason
		Yes	No	
<b>Population</b>	Contact with the Criminal Justice System			
	Cognitive Disability			
<b>Exposure</b>	Administered an actuarial or structured risk assessment?			
<b>Outcome</b>	Method of measuring recidivism: Self-report / Recorded rates			
	Recidivism is measured: Conviction / Charge / Caution / Incident Report / Institutional Report			
<b>Study type</b>	Cohort study / Case control study / Systematic Review / Meta- analysis			

## **Appendix C**

### **Quality assessment criteria**

The search strategy will identify all relevant articles. These will all then be subjected to a quality assessment (see appendix 1). Below is the scoring criteria for the Quality Assessment. Quality assessment will be carried out independently by two reviewers (MF and RP). Any disagreements will be resolved by discussion and reference to the original article. If disagreements remain, a third reviewer will be consulted to make the final decision (AB).

## Quality Assessment Scoring Criteria

### *Selection Bias*

1. Is there sufficient description of the groups?
  - 2 – Details are provided about age; IQ; gender; offence type / history / ethnicity (if Australian); criminal justice status; location (e.g. if a high risk population)
  - 1 – Most of the above are provided or some are provided in general terms
  - 0 – A large number of critical factors influencing risk of recidivism are not reported
2. Were any methods employed to ensure samples were representative of the populations being investigated?
  - 2 – comment is made about representativeness to population
  - 1 – comment is made about them in relation to the population (e.g. higher risk)
  - 0 – either no comment or appeared to not be representative
3. Is there sufficient description of how prognostic factors were distributed amongst groups?

2 – If groups are present, important descriptors mentioned above are discussed in relation to groups or there are no groups

1 – Some descriptors are mentioned

0 – Descriptors are not mentioned where groups are present

4. If comparisons were used, were they similar at base line?

2 – Either there were no comparison groups, baseline was irrelevant or they were similar

1 – Comparison groups were somewhat similar across groups or description was vague but consistent

0 – Either no description was provided or groups were dissimilar.

5. Were groups comparable in terms of confounding variables?

2 – Either there were no comparison groups or descriptors mentioned above were similar across groups

1 – Comparison groups were somewhat similar across groups or description was vague but consistent

0 – Either no description was provided or groups were dissimilar.

6. Was there any controls to account for the effects of these confounding factors?

2 – Either no confounding factors, no comparison groups or controls were in place

1 – Some evidence of controls or there was question about the presence of confounds that was not discussed

0 – Confounds were present that different across groups and were not addressed

7. Was everyone included that should be?

2 – Yes

1 – There was uncertainty about the sample or a small number of the sample were omitted that might have had a small effect on outcome

0 – There were omissions that were likely to have biased results

8. In retrospective studies, was the selection of individuals influenced by their outcomes?

2 – The sample was selected without consideration of outcome (e.g. entry in service)

1 – There is a possibility or it is stated there was confound in selection of participants for retrospective studies

0 – The sample were derived from a group that had or had not offended

#### Performance Bias

9. Did all comparison groups receive the same care?

2 – The groups had the same care during the reoffending period

1 – There was no mention of care but it is suspected

0 – The different groups received different services

10. Was the outcome assessment the same for all groups?

2 – All participants received the same measures

1 – Measures were not mentioned but suspected or a small group were measured in a different fashion

0 – A large number were measured in a different manner

#### Detection Bias

11. Were all the risk assessments administered by adequately trained professionals?

2 – It is stated that administrators were trained and / or were suitably qualified

1 – There was question about the suitability of administrators or there was insufficient information about training, but did make mention of this or it can be assumed

0 – Administrators were not trained and / or it appears they were unsuitably qualified

12. Was everyone assessed in the same way?

2 – All participants were reported to be assessed in the same manner

1 – There was insufficient information about the process but it can be assumed or there was differences but was unlikely to significantly affect results

0 – Different measures and processes were used for different participants

13. Were investigators blind to outcomes being measured?

2 – It is reported that for retrospective studies assessors were blind to outcome or the study was prospective

1 – There is no comment on whether assessors were blind to outcome but can be assumed from the method

0 – It states assessors were not blind or it can be assumed from the method that assessors had access to offence records

14. Have they accounted for confounding variables present at time of administering the risk assessment?

2 – Either there are no confounding variables or they are accounted for and addressed

1 – There is no mention of confounds but there is little evidence of such variables or confounds are minimal por confounds are mostly addressed

0 – Confounds are not mentioned but are apparent or there are significant confounds that are not addressed

15. Was the outcome being measured clearly defined?

2 – There is a clear definition of outcome, whether it be conviction, charge or reported behavioural incident

1 – There is reference to offence or behaviour but there is question where information is obtained from and the quality of information

0 – There is an unclear reference to offence or behaviour

16. Were the measurements for outcome objective?

2 – Outcomes were criminal records or where it was behaviour, a description of what counted was provided or noted that there was such description

1 – There was question over the objective nature of outcomes, e.g. definitions of behaviour were vague or ways in which offending was measured was unclear (e.g. conviction or charge)

0 – Outcome measures were subjective or not well enough described to suggest lack of objectivity

17. Was the outcome assessed in the same way across groups?

2 – Outcome was assessed the same across groups in terms of reoffending

1 – It was unclear about how different groups were assessed but could be assumed it was the same across groups

0 – Different outcomes were used across groups



18. Were the participants blind to the outcomes being measured?

2 – The study was prospective or were not otherwise involved in the study

1 – There was question over motivation to be in the study

0 – There was evidence that there was bias in participants outcomes or some participants were treated differently

#### Attrition Bias

19. Was the follow up long enough for the outcomes to occur?

2 – Follow up was at least three months for short term measures, a year for general reoffending and two years for sex offenders

1 – There was at least six months follow up for longer term assessments or a year for sex offenders

0 – Follow up was a matter of weeks or less than a year for sex offenders

20. Did they provide details of the follow up?

2 – details were provided about the nature of recidivism

1 – Some details were provided about recidivism but were general (e.g. didn't provide details about nature of offences or time to reoffend)

0 – No detail about recidivism was recorded

21. Were all groups followed up for an equal amount of time?

2 – All participants were followed up for an equal amount of time

1 – There was no detail about time frames but information suggests time frames were the same

0 – There were different time frames for different participants or no details suggest the time frames were different

22. Was a sufficient proportion followed up?

2 – All participants were followed up or those that were not followed up were unlikely to affect outcomes

1 – It was either unclear about follow up or no details were provided on those who were not followed up

0 – There were some participants that were not followed up and these were anticipated to affect outcome

23. Were dropout rates and reasons similar across groups?

2 – Dropout rates were similar across groups or there was only one group or there was no drop out

1 – There was insufficient reason for dropouts and insufficient detail about rates but appeared to be minimal

0 – Rates and reasons were different across groups or there little detail but could have had an effect

#### Statistical Analysis

24. Was the statistical analysis appropriate?

2 – Statistic was appropriate (used ROC for recidivism or ANOVA when comparing groups)

1 – A non-standard statistic was used when another could have been used but required methodological change

0 – Statistic was inappropriate or could have been better with current method

25. Was there any statistical attempt to deal with missing data?

2 – There was no missing data or adjustment was made

1 – There was no adjustment but there was question about whether an adjustment would assist accuracy of statistics

0 – No attempt was made to adjust despite missing data likely to have a significant effect on results

26. Were participants for whom outcome data could not be collected included in the analysis?

2 – All participants were included or participants were included

1 – There was question about whether participants missing could have been included or were at least described

0 – No attempt was made to consider participants who were not included in analysis yet were suspected as to having a bias on results.

### Quality Assessment Form

Question	Y	P	N	U	Comments
<b>Selection bias</b>					
Is there sufficient description of the groups?					
Were any methods employed to ensure that the samples were representative of the populations being investigated?					
Is there sufficient description of how prognostic factors were distributed amongst the groups?					
If comparison groups were used, were the similar at the baseline (i.e. in terms of gender, IQ levels, type of intellectual disability, co-morbidities, SES, ethnicity, and types of offences committed)					
Were the groups comparable in terms of important confounding variables (e.g. institutionalisation, age of first offence, family structure, type of ID, comorbidities)?					List any confounding variables that were missed
Was there any control/adjustment in the design/analysis to account for the effects of					

these confounding factors?					
Was everyone included that should be?					
In retrospective studies, was the selection of individuals influenced by their outcomes?					
<b>Performance bias</b>					
Did all comparison groups receive the same care, apart from the assessments being measured?					
Was the outcome assessment the same for all participants?					
<b>Detection bias</b>					
Were all risk assessments administered by appropriately qualified investigators?					
Was everyone assessed in the same way?					
Were investigators blind to all outcomes being measured?					
Have they accounted for any confounding variables present at the time of administering the risk assessment?					
Was the outcome being measured clearly					

defined?					
Were the measurements for outcome objective?					
Was the outcome assessed in the same way across groups?					
Were the participants blind to the outcomes being measured?					
<b>Attrition bias</b>					
Was the follow-up long enough for the outcomes to occur?					
Did they provide details of the follow-up?					
Were all groups followed-up for an equal length of time?					
What proportion of the cohort was followed-up?					
Does the study indicate the proportion of people who dropped out/could not be followed up?					
Were drop-out rates/people who could not be followed up and reasons for this, similar					

across groups?					
<b>Statistical analysis</b>					
Was the statistical analysis appropriate?					
Was there any statistical attempt to deal with missing data?					
Were participants for whom outcome data could not be collected included in the statistical analysis?					

### **Appendix 3. Data Extraction Form**

#### **General information:**

Date of data extraction: Reference manager ID:

Identification of reviewer:

Title:

Author(s):

Year published: Language:

Country of origin: Jurisdiction:

<i>Type:</i>	Journal article	Primary study
	Book chapter	Systematic review
	Grey literature	Literature review
	Conference paper	Meta-analysis
	Government report	Dissertation

Cohort study / case control study

#### **Population characteristics**

Target population:

Recruitment procedures:

Sample size:

Age (average):

% males and females:

*Setting of sample:* Community (supported living, independent, drop in support)

In-patient (prison, hospital)

mixed

Were baseline characteristics similar across groups?



## **Diagnosis**

Definition used (e.g. learning disabilities or mental retardation?)

Method of identifying ID (e.g. IQ <70/80 or < borderline?)

Diagnosed using ICD-10 or DSM-4:

Severity of ID (mild, moderate, high):

Any co-morbidities?

## **Characteristics of offence**

*Criminal Justice response:* Convicted/ bailed/ cautioned/ other

*Type of offence:* Sexual only / violent only / general / general (non-violent)  
unstated / unclear

Contact Non-contact

Interpersonal Against property / company

Victim known Victim stranger

Adult victims Child victims

Male victims Female victims

Any other offence-related details:

## **Study design**

### **Exposure**

Prospective / retrospective / unclear

Risk assessment measure(s) used:

### **Outcomes**

*Measurement:* Recorded rates  
Self-reported

*Type:* Reoffend Institutional incident  
Caution Mixed

## Reconviction

Number of participants who did have a criminal justice response:

Number of participants who did not have a criminal justice response:

Length of follow-up:

*Type of tool used: actuarial / structured professional judgement*

### **Analysis**

#### **Validity of study**

Inter-rater reliability score:

Was the assessor blind to outcome?

How was the validity of self-reported behaviour maximised?

Proportion of sample unable to follow up:

Reasons for inability to follow-up:

How were confounding factors controlled for?

Was a power size calculated?

#### **Statistical analysis**

Statistics used:

Treatment of confounding variables:

How was missing data dealt with?

AUC:

Sensitivity:

Specificity:

#### **Notes/Comments**

## **Appendix D**

Assessment of Risk Manageability of Individuals with Developmental and Intellectual  
Limitations who Offend (Generally) Scoring Sheet



# ARMIDILO-G

Assessment of Risk Manageability of Intellectually Disabled Individuals who Offend (General)

## ARMADILO SCORING SHEET V3\_1

Client Name	Period Assessed	til
-------------	-----------------	-----

Residence	_____	Support Type	_____
Provider	_____	Interviewee	_____
Interviewer	_____	Date of Interview	_____
Interview Method	_____		

### ASSESSMENT FINDINGS

<b>Static Risk Rating</b>	<b>Score</b>	_____
ARMIDILO Client Risk	Score	_____
ARMIDILO Client Protective	Score	_____
ARMIDILO Environment Risk	Score	_____
ARMIDILO Environ Protective	Score	_____
<b>ARMIDILO Total Client</b>	<b>Score</b>	_____
<b>ARMIDILO Total Environment</b>	<b>Score</b>	_____

### RISK TREND

Date of Previous ARMIDILO				
Prev ARMIDILO Client Risk	Score	_____	Change	_____
Prev ARMIDILO Client Protective	Score	_____	Change	_____
Prev ARMIDILO Environ Risk	Score	_____	Change	_____
Prev ARMIDILO Environ Protect	Score	_____	Change	_____

# BEHAVIOURAL REVIEW

The information below is a description of behavioural incidents expressed by the client that have occurred over the assessed period as described in incidents reports or legal documentation.

Date	Behaviour	Level of Incident	Category	Description	Action taken
		<input type="checkbox"/> Incident report <input type="checkbox"/> Charge <input type="checkbox"/> Conviction	1		
		<input type="checkbox"/> Incident report <input type="checkbox"/> Charge <input type="checkbox"/> Conviction	1		
		<input type="checkbox"/> Incident report <input type="checkbox"/> Charge <input type="checkbox"/> Conviction	1		
		<input type="checkbox"/> Incident report <input type="checkbox"/> Charge <input type="checkbox"/> Conviction	1		
		<input type="checkbox"/> Incident report <input type="checkbox"/> Charge <input type="checkbox"/> Conviction	1		
		<input type="checkbox"/> Incident report <input type="checkbox"/> Charge <input type="checkbox"/> Conviction	1		
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		<input type="checkbox"/> Incident report <input type="checkbox"/> Charge <input type="checkbox"/> Conviction	1		
		<input type="checkbox"/> Incident report <input type="checkbox"/> Charge <input type="checkbox"/> Conviction	1		
		<input type="checkbox"/> Incident report <input type="checkbox"/> Charge <input type="checkbox"/> Conviction	1		
		<input type="checkbox"/> Incident report <input type="checkbox"/> Charge <input type="checkbox"/> Conviction	1		
		<input type="checkbox"/> Incident report <input type="checkbox"/> Charge <input type="checkbox"/> Conviction	1		

# CLIENT SPECIFIC ITEMS

Coding	Risk		Protective
	N (0)	No, not a problem or no evidence of it as a problem	No protective features associated with the domain
	M (1)	Maybe a problem or somewhat of a problem	Maybe or some protective elements associated with the domain
	Y (2)	Yes, a definite problem	Yes, definitely protective

Further information on coding specific items can be found in the ARMIDILO-G Assessment Guide

## 1. Goals

This item explores the extent to which a client is achieving their personal goals. This should be measured against their Individual Plan (for larger goals) and from discussions / behaviour for short term goals. Goals may include getting to do preferred activities through to purchasing new items of clothing or regaining decision making power from substitute decision makers (even if this is against the wishes of services providing support). Staff should report progress on goals, whether it be activity that brings the client towards or away from their goals. Incompletion of goals may be due to client or environmental factors.

### Situation

--

### Risk Picture

Risk looks like:

- Disengaging from goals
- Acting opposite to the intention of goals
- Undermining some goals

### Protective Picture

Protective looks like:

- Achieving some goals
- On the path to achieving some goals
- Showing active steps to engage with goals

--

### Recommendation

--

## 2. Compliance with Supervision

This item should consider compliance with legal and disability service supervision. This includes attending probation services and accepting support by staff in the community. It is important that the supervision should be around offending matters and not aspects that do not relate to offending (e.g. you would not score if the client moves away from staff in the community if they are not an absconding risk and their victim group etc is not in the vicinity). Supervision also refers to compliance with legal conditions such as not consuming alcohol, not attending places where children frequent or not being within proximity to particular people.

### Situation

--

### Risk Picture

Includes:

- Refusing supervision in the community
- Avoids the accommodation
- Breaches legal conditions

### Protective Picture

Includes:

- Actively seeks out staff / supervision
- Will independently inform staff of behaviour when not under supervision to gain support / guidance

--

### Recommendation

--

## 3. Compliance with Treatment

Treatment includes compliance with behaviour support plans, accepting medication for issues related to offending, (e.g. anti-psychotics, methadone or anti-libidinal) attendance at therapy or similar appointments. It should be remembered that this is a client item and therefore does not relate to access to treatment. Therefore, the lack of treatment available should not be factored into scoring. Rather, it is the client's response to treatment that has been made available. A client's efforts to seek further treatment, however, would be considered in the protective domain. Another factor to consider is whether the treatment is appropriate for the individual. A client should not be scored down if the client fails to engage in therapy when there is evidence the therapy is delivered in a manner inappropriate for the client (e.g. attending a non-adapted group therapy program).

### Situation

--

### Risk Picture

Includes:

- Refuses interventions provided (e.g. medication or therapy provided to manage risk)
- Does not participate in aspects of behaviour intervention (e.g. reward program)

### Protective Picture

Includes:

- Seeks out extra treatment
- Actively involved in implementing treatment (e.g. will complete homework or ask for medication)
- Works to reduce barriers to treatment
- Enjoys treatment

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**Recommendation**

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## 4. Pro-Criminal Attitudes

Pro-criminal attitudes refer to beliefs and attitudes that directly promote offending behaviour. This may include sexual deviance (i.e. inappropriate sexual thoughts), anti-authoritarian views, a sense of revenge, extremist or militant beliefs or a strong sense of entitlement to others property. This item does not include denial of previous offences or controversial views that are not closely related to the client’s history of offending (e.g. racism when there is no evidence that the client has targeted victims of a particular cultural group).

**Situation**

--

**Risk Picture**

Includes:

- Has made sexual statements about children
- Promoting violence as an effective way to manage problems
- Makes derogatory comments about Police

**Protective Picture**

Includes:

- Negative comments about others offending behaviour
- Talking down about previous offending behaviour

--	--

**Recommendation**

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## 5. Inappropriate Preoccupation

While criminal attitudes look to beliefs and attitudes consistent with offending, this item considers behaviours that, whilst not offending in itself, are consistent or correlated with offending. Generally this is considered to relate to criminal culture and preoccupation with factors associated with offending. This would include involvement with anti-social peers, bullying other clients, threatening staff, being preoccupied with the fire brigade (if an arsonist), watching children’s shows (if a child sex offender), collecting weapons or break-in implements or wearing gang ‘colours’ (badges, jackets).

**Situation**

--

**Risk Picture**

Includes:

- Interest in fire brigade / bushfires if arsonist
- Involvement with anti-social peers
- Collection of photos with children if paedophilic

**Protective Picture**

Includes:

- Engages in pro-social groups
- Conducts talks on previous behaviour
- Mentors offenders e.g, AA or NA

--	--

**Recommendation**

--

## 6. Offence Management

This refers to the extent to which the client is adhering to their cycle of offending, and more specifically whether they are acting in a way that suggests they are getting closer to another offence. This would include attending locations related to offending, associating with particular peers or interacting with their victim group. Other features of the offence cycle include access to means, (e.g. lighters, weapons, car jacking implements) mood and grooming.

**Note:** A client’s path to offending (offence cycle) must be understood in order to score this item.

**Situation**

--

**Risk Picture**

Includes:

- Has means to offend (e.g. housing implements)
- Is acting in manner similar to previous when about to offend (e.g. increased time with anti-social peers or drinking)

**Protective Picture**

Includes:

- Client is aware of their offence cycle
- Makes active efforts to avoid it
- Has been seen to implement strategies to avoid high risk situations

--	--

**Recommendation**

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## 7. Emotional Coping Ability

This item describes whether a client is able to self-manage their expressed emotional state and deal with unpredicted or negative events in their lives. This does not relate to whether the client has experienced negative events, but how they have coped with such events and how high or low their emotions get. Emotions include anxiety, sadness, anger and excitement. Examples of behaviour that supports this item would be reactive violence where little effort seems

## ARMIDILO-G Scoring Sheet

to be made by the client to control anger or other negative mood states and oppositional interactions with others (e.g., supervisory staff, other clients). As well, clients may show poor problem-solving ability when under stress or experiencing difficult emotions. Clients will show different degrees of ability, for example, to cope with change, particularly if the change is due to changes such as those that are due to unpredictable events (e.g., an unexpected move to a new facility, or a death in their family).

### Situation

#### Risk Picture

Includes:

- High level of reactive aggression
- Frequent crying
- Self harmed
- Reacts emotionally to stress (may be avoidance / substance use)

#### Protective Picture

Includes:

- Seen to use strategies to manage emotions
- Wants to discuss issues upsetting them

### Recommendation

## 8. Self-Efficacy

Self-efficacy refers to a client's belief in their own ability to perform in a manner that allows them to attain their chosen goals. Internal attribution (seeing one's self as being responsible), effective problem solving and assertiveness are all evidence of self-efficacy.

### Situation

#### Risk Picture

Includes:

- Blames others for behaviour
- Manipulates environment to get needs met
- Dependent or passive-aggressive style

#### Protective Picture

Includes:

- Owns their behaviour
- Shows effective problem solving
- Takes on responsibilities (e.g. at home or in doing chores)
- Skill level is irrelevant here

### Recommendation

## 9. Relationships

This item relates to the client's personal relationships. It includes both intimate (e.g. girlfriend) and platonic relationships and includes informal (family) and formal (staff) ones. It may also include relationships with more distant providers such as P&P officers and case managers, provided that they have a relationship that is more than something formal and plays a significant role in mitigating offending.

### Situation

#### Risk Picture

Includes:

- Shows poor relationship skills
- Creates problems with a number of relationships
- Socially isolated

#### Protective Picture

Includes:

- Easily develops new relationships
- Is able to work towards managing existing ones
- Appears sociable

### Recommendation

## 10. Substance Abuse

Substance abuse includes the use of illicit drugs and the misuse of alcohol or prescription medication (in that it specifically increases risk of re-offending or there is a condition of release that the client cannot use alcohol).

### Situation

#### Risk Picture

Includes:

- Regularly using illicit substances
- Uses alcohol to excess
- Requires external influences to stop drinking
- Has a condition to not use substances but continues to do so

#### Protective Picture

Includes:

- Demonstrates anti-drug attitudes
- Applies strategies from treatment
- No history of substance abuse



**Recommendation**

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## 11. Impulsivity

Impulsivity refers to behaviour which is not planned and is committed without any consideration of the consequences to ones self or others. Impulsivity in this item refers to behaviour (inability to sit still) and cognition (e.g. inability to maintain concentration) but not emotion, as it has been covered earlier. Evidence of impulsivity would include client problems with boredom, hitting without thinking, perseveration on tasks, distractibility and impatience.

**Situation**

--

**Risk Picture**

Includes:

- Very distractible
- Inability to finish tasks
- Acts spontaneously without thinking (excluding emotional reactions)

**Protective Picture**

Includes:

- Uses strategies to deal with impulsivity
- Uses reminder cards
- Takes medication for impulsivity (e.g dexamphetamine)
- Has no history of difficulty with impulsivity

--

**Recommendation**

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## 12. Employment

This item relates to the engagement of activity that would viewed by the client or others as relating to a vocation. This can be paid or unpaid provided it is activity performed within a commercial context. A TAFE course, however, would be considered education whilst on the job training (e.g. apprenticeship) would be considered employment. This item also refers to the client's actions and not access to services, as this is covered in the Environment section.

**Situation**

--

**Risk Picture**

Includes:

- Reports they do not wish to engage in employment
- Makes active steps to avoid employment
- Employment promotes offending

**Protective Picture**

Includes:

- Client is in employment
- Client obtains sense of achievement / mastery / identity from employment
- Client is showing significant effort to find employment

--

**Recommendation**

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## 13. Education

This item addresses education that is both formal and informal provided that it occupies time and is aimed at developing skills that can assist adaptive functioning or employment prospects. An art class would generally be perceived as leisure rather education unless the class was aimed at generating employment. This domain does not consider treatment as this is covered by *Compliance with Treatment*. Like *Employment*, this domain refers to the client's behaviour and not the availability of educational options as this is addressed in the Environment section.

**Situation**

--

**Risk Picture**

Includes:

- Reports they do not wish to engage in education
- Makes active steps to avoid education
- Education promotes offending

**Protective Picture**

Includes:

- Client is in education
- Client obtains sense of achievement / mastery / identity from education
- Client is showing significant effort to find education

--

**Recommendation**

--

## 14. Recreation & Leisure

This item relates to meaningful day activity that does not relate to either employment or education. This could include engagement in hobbies, sport, computer gaming, art or music. This can be formally organised or something the client undertakes by themselves.

**Situation**

--

**Risk Picture**

**Protective Picture**

Includes:

- Reports they do not wish to engage in structured leisure
- Makes active steps to avoid structured leisure
- Leisure activity promotes offending

Includes:

- Client is in a number of structured leisure activities
- Client obtains sense of achievement / mastery / identity from activities
- The activities occupy a significant amount of time
- The activity is a functional replacement for offending

**Recommendation**

## 15. Mental Health

Mental health refers to any mental disorder other than intellectual disability (as defined by the DSM-IV-TR). This means both Personality Disorder and acute Axis I disorders. This diagnosis must have been reported in a formal report written by a Clinical Psychologist or Psychiatrist.

**Situation**

**Risk Picture**

Includes:

- Active mental disorder with clear symptoms in the period assessed and it is influencing offending

**Protective Picture**

Includes:

- Seeking treatment for disorder
- Actively engages in strategies / takes medication
- No history of mental disorder

**Recommendation**

## 16. Finance

This item explores the extent to which the client is able to manage their finances and how the management of their finances impacts on their offending. This includes their relationship with Trustee services, their ability to budget and whether a lack of funds tends to promote theft.

**Situation**

**Risk Picture**

Includes:

- Spends beyond means
- Financial situation is causing stress
- Lacking in financial skills and no Trustee
- Lack of finances promotes theft to obtain basic goods

**Protective Picture**

Includes:

- Client manages money well and promotes sense of mastery
- Financial system established for client works well

**Recommendation**

## 17. Behaviour

This item explores the client's actual behaviour over the course of the period of assessment. It examines both challenging and offending behaviour. This is identified through charges, convictions and incident reports.

**Situation**

**Risk Picture**

Includes:

- Charged with an offence
- Behavioural incident reflecting offending behaviour

**Protective Picture**

Includes:

- Acting in way opposite to offending (e.g. buying goods)
- Using intervention skills (such as self-soothing or problem solving)
- Walking away from a high risk situation

**Recommendation**

# ENVIRONMENT ITEMS

## 1. Consistency of Supervision

Consistency of supervision refers to the utilisation of the same group of staff or supports over time. It also refers to a consistent approach used by all staff such that strategies are implemented in the same manner all the time. The client’s opinion on this item may be valuable, as what someone else may see as stable, the client may interpret as inconsistent.

**Situation**

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**Risk Picture**

Includes:

- No core group of staff
- High percentage of casual staff
- Lack of engagement with client

**Protective Picture**

Includes:

- Large stable group of permanent staff
- Staff have worked with the client for a long time

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**Recommendation**

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## 2. Attitudes toward the Client

This refers to attitudes around both offending and ID. This might include beliefs about how offending behaviour should be dealt with (e.g. retribution for sex offences) and how to support those with an ID (e.g. a maternalistic view). This refers to direct support staff, management and staff from other services (e.g. guardian) with most weight placed on those with the closest influence. The appropriateness of the attitudes should be with reference to the agreed clinical approach, as described in their behaviour support documentation (e.g. formulation, assessment, Behaviour Support Plan)

**Situation**

--

**Risk Picture**

Includes:

- Attitudes inconsistent with expectations of behaviour support / formulation
- Attitudes of staff promote challenging behaviour / lack engagement

**Protective Picture**

Includes:

- Staff accept the client regardless of behaviour
- Staff show empathy of the client’s world view.
- Approach reflects that described in the behaviour support plan

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**Recommendation**

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## 3. Communication

Communication refers to communication between all members of the intervention team. This would include all services that have an influence in risk of re-offending (including guardian, psychologist, corrective services and police). Communication includes use of weekly team meetings, progress notes, hand-over time / checklists, open 360 communication between staff and management and the timeliness of communication between the various parties. Communication also includes the availability of relevant documents (such as IPs and Behaviour Support Plans). A review of a client’s local file will be a good indicator of how effective communication is within the service.

**Situation**

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**Risk Picture**

Includes:

- Lack of team meetings / handover periods / communication books
- Poor communication between staff and management (e.g. information filters slowly)

**Protective Picture**

Includes:

- Clear communication structures and processes
- Multiple levels of management in meetings
- Staff are open about discussing problems or getting feedback

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**Recommendation**

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## 4. Client Specific Knowledge

This refers to staff knowledge of the client’s offence cycle (triggers to offending, consequences, factors in offending that it more likely the client will again re-offend), their plans and routine in general.

**Situation**

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**Risk Picture**

Includes:

- Cannot describe client’s formulation

**Protective Picture**

Includes:

- Staff play a role in updating behaviour support plan

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- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>- Staff unable to identify key principles of the client’s behaviour support plan</li> <li>- Staff were unable to predict situations where challenging behaviour occurred despite presence of known triggers</li> </ul> | <ul style="list-style-type: none"> <li>- Staff can predict incidents intuitively and will talk about triggers beyond the detail in the plan</li> <li>- Staff can discuss the offence cycle at length</li> </ul> |
|---|---|

**Recommendation**

## 5. Situational Consistency

Situational consistency refers to the extent to which the accommodation setting fits the client’s needs and whether there have been shifts between different models of service. This item encompasses changes in accommodation, changes in house mates and changes in services. It also refers to the extent the client has remained in the setting throughout the period of assessment or whether there have been periods of itinerancy or unplanned and unsupervised leave.

**Situation**

**Risk Picture**

Includes:

- Client has moved in the past 3 months
- Other clients have entered service in last 3 months
- Client has been away from the service unplanned without support
- Drastic change in service provision

**Protective Picture**

Includes:

- Client has clear routine and structure
- Client has been in the one service for a significant period of time

**Recommendation**

## 6. Changes in Social Relationships

This refers to the extent people approach and move away from the client. This includes intimate, social and professional relationships. Emphasis should be placed on those relationships the client is known to place most investment in.

**Situation**

**Risk Picture**

Includes:

- Important relations to the client have broken down or severed (e.g. relationship break up, move away from parents, removal of child)
- Change in relationship causes instability (e.g. parent remarries)

**Protective Picture**

Includes:

- Supportive relationship improves
- Important relations increase engagement
- Negative relations move away

**Situation**

## 7. Changes in Access to Victims or Means

This refers to changes in the physical environment which allows for access to victims or means to engage in offending behaviour. Unlike the offence management item in the *Client Items*, this item explores the extent to which the environment facilitates the engagement of the client in their offence cycle. Things to consider in this domain include access to weapons, implements used to break and enter, access to areas that prevent supervision or access to items that allow for engagement with the offence cycle (e.g. access to child pornography).

**Situation**

**Risk Picture**

Includes:

- Access to victim group increases
- Access to means to offend (e.g. break / enter implements) increases
- Increase in access to triggers to offending

**Protective Picture**

Includes:

- Environment has functional equivalent to offending (e.g. increase excitement / activity)

**Recommendation**

## 8. Changes in Access to Intoxicants

Substance abuse includes the use of illicit drugs and the misuse of alcohol or prescription medication (in that it specifically increases risk of re-offending or there is a condition of release that the client cannot use substances). Unlike the *Client* item, this item explores the extent to which the environment supports access to such substances and facilitates use.

**Situation**

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**Risk Picture**

Includes:

- Easy access to alcohol in environment
- Close proximity to drug dealers
- Available funds to purchase substances

**Protective Picture**

Includes:

- AoD program been put in place
- Urinary analysis occurs
- Ecological controls have been put in place
- Client has never used substances

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**Recommendation**

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## 9. Access to Services

This item relates to the extent services support access to education, employment and leisure options. Access to can be seen to be supported through funding programs (such as funding AoD treatment) providing transport, the accommodation being proximal to necessary services or by helping the client create a daily routine that promotes the ability to attend activities.

**Situation**

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**Risk Picture**

Includes:

- Barriers are in place to service provision (e.g. distance, lack of transport)
- Services have been withdrawn

**Protective Picture**

Includes:

- New services have been acquired
- Efforts are evident to improve service quality or number

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**Recommendation**

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# ARMIDILO-G

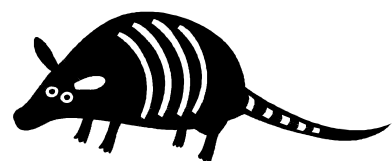
The Assessment of Risk and Manageability of  
Intellectually Disabled Individuals who Offend

(General Version)

Research Version 6.2

## Scoring Manual

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# INTRODUCTION

## Overview

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The following item descriptions provide some general guidelines for the scoring of the ARMIDILO-G items. We recommend that you first read the client's file, then interview the staff member(s), and then interview the client. In most cases an interview with the client is not feasible given time restraints, but would be helpful. We do not recommend attempting to complete an ARMIDILO based on a client interview, without having reviewed the file or interviewing the relevant staff members. On the contrary, we suggest the latter two activities are critical and the client interview optional, if at all necessary. We have provided some example questions to ask the staff and the client, but you are welcome to devise your own along these thematic lines. Please note that we have used male pronouns throughout the manual for ease of reading, but we recognize that some clients will be female.

Please note that as an assessor your job is not to merely find information, but to find relevant risk-related information. The job is to find information that helps the client manage more effectively and to aid staff who work with the client do so more effectively. Ask yourself, is this bit of information "risk-relevant"? For example, if a client swears at staff and is argumentative, but generally follows supervision and takes risk-relevant programming, is he non-compliant with supervision in a risk-relevant manner?

Regardless of your ratings, you will always need evidence to rate in a risk-increasing or a risk-decreasing fashion. In closing, remember this paradox - absence of evidence (of a trait) is not the same as evidence of absence of the trait. You need to establish that a trait or variable is not a problem - not by its mere absence, but by finding evidence to the contrary. Conversely, finding evidence of something being a problem is also critical - do not assume something is likely a problem because it often is with ID offenders!

## How to Use the Manual

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### Definition

This manual should be used every time the ARMADILO is completed. The definition provides scope around what the item covers when considering if it is protective or risk orientated and what should be commented upon (e.g. while impulsivity is often thought of in terms of emotional impulsivity, the definition of the item for impulsivity makes it clear it refers to cognitive and behavioural impulsivity).

### Useful Questions

This provides direction for scorers on the sorts of issues the item covers and the sorts of information that is important in terms of thinking about the presence of risk / protective factors and also what might be discussed in the comment section.

### Scoring Key

This is to provide explanation on how the issues raised under the item should be prioritised to determine if there is clinically significant risk or protective aspects that should be highlighted. Doing this helps prioritisation of the issue for discussion and intervention, therefore is a critical issue.



## **Rationale**

Rationale provides explanation of why the topic is considered. While it is not necessary to consider for using the item, it may help the individual completing the tool think about its importance for the current client and may improve the knowledge of the staff member in understanding the tool.

## **Completion When in Custody**

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The completion of ARMIDILO can be complicated when a client has entered or exited custody. The following rules are to apply in such scenarios:

If a client has been in custody for the previous period and is expected to remain in custody for the entire next period the ARMIDILO does not need to be completed.

If the client entered custody for this assessment period (e.g. 5<sup>th</sup> July) but the assessed period was for the previous period (e.g. from 1 May til 30<sup>th</sup> June) the ARMIDILO must be completed.

If the client entered custody part way through the period being assessed, the ARMIDILO must be completed.

If the client has been in custody for the entire period of assessment, but they are expected to be released for the next period, the *Individual Domain* should be completed based on correctional staff interview.

## **General Principles**

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### **1. Focus on managing risk of re-offending**

The underlying purpose of the ARMADILLO is the identification and management of factors that may increase or decrease a client's risk of re-offending. This means that the ARMADILLO is a document that reflects a process focused on reducing risk of re-offending. Therefore, discussion and recommendation around domains should reflect risk of re-offending. Adaptive functioning supports and goals, whilst having a role to play in risk management, should be considered in their own right and is discussed below.

### **2. Comment only on the period of assessment**

The ARMADILLO is a 'dynamic' risk tool. This means that the information and decisions about risk reflect a clear period of time. This means comments, recommendations and indication of risk / protective factors should reflect the period of time since the last ARMADILLO was completed. This means that behaviour or factors that occurred during the previous period of assessment should not be included. This ensures information remains current and historical incidents are not over-emphasised. It also ensures progress is captured and reinforced.

### **3. Clearly identify protective factors**

Risk is only one half of the picture in considering risk management. Protective factors are not simply the lack of risk, but are factors that strengthen the client's situation to reduce risk of re-offending. For example, while a lack of anti-social attitudes reduces risk, protective would be the presence of pro-social views, such as high levels of empathy or respect for women or the elderly. As such, under each

domain it is important to report protective factors and make recommendations on how to boost them or prevent the loss of them.

#### **4. Score after the interview**

It is most important to obtain all necessary information from the interview. Attempting to decide on whether risk or protective factors are present at that time may interfere with obtaining information from the interview. Rather, collect the information, then as soon as the interview is complete go through the information and determine the scoring of items.

#### **5. If in doubt, provide a 'maybe'**

In many situations it may not be clear if an item is a risk or there may be conflicting information as to whether a factor is there. Under such circumstances, a 'maybe' should be given. This ensures possible factors are not ignored and places some priority towards exploring the issue. Using this approach is most likely to place the majority of clients and issues in the middle category, allowing for clear identification of high risk clients and domains for special consideration.

#### **6. Presence of risk & protective factors should reflect the entire domain**

When considering the presence of risk and protective factors, ensure answers are based on all aspects of the domain over the entire period. For example, if a risk was present at the start of the period, but is no longer a risk, a 'maybe' should still be reported to reflect the risk was present during the time period.

#### **7. Specify the risks & protective factors**

If risk or protective factors are identified, these should be clearly stated in the comments section to help support services intervene. For example, if client or staff attitudes are identified as a risk, these should be described in the comment section.

#### **8. Score relative to the client**

Risk and protective factors should be considered relative to the client. For example, the precise number of days of work may have different implications for risk for different clients, with one client possibly being at risk if not occupied every day, whilst another being relatively without risk if busy two days a week.

#### **9. Be concise**

This document is used to flag issues of risk to inform intervention and should not be a lengthy, strenuous process. Emphasis should always be on the intervention. Only enough information should be given to help inform management of the issue and the type (not details) of the response you think is necessary.

#### **10. This is not a performance management tool**

Information in the Environment items should reflect issues of risk for the client and should not be concerned with staff compliance, effort or indiscretion. Staff names should not be used throughout the document and staff should be referred to in general terms.

#### **11. Report on what has been observed**

It is important that scoring is based on what has actually been seen or heard. For example, if staff have not heard anti-social attitudes in the last assessment period but the client may have expressed these elsewhere (though there is no evidence to that effect) then it has to be assumed anti-social attitudes are not present.

## BEHAVIOURAL REVIEW

### Category

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#### **Incident Report**

This section is to record all incident reports that have been prepared for the given client during the assessed period. Incident reports refer to formal documents prepared by the service that register challenging behaviour. Only reports where the client in the perpetrator should be identified. The behaviour does not need to relate to the client's history of offending.

#### **Charge**

This refers to a formal charge served to the client for an action they committed during the assessed period. Where the client was later convicted for the charge, the charge is recognised as a conviction.

#### **Court Outcome**

This refers to a conviction or court order served to a client on the basis of a previous behaviour where the client had been charged. Outcomes may include legally binding orders under a mental health legislation (e.g. s.32, s.33 of the Mental Health (Criminal Procedures) Act in NSW), conviction or bond.

### Behaviour Type

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This refers to the type of behaviour as defined by BOCSAR's categorisation system. Only one should be given per behaviour.

### Description

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This should be a very brief description of the behaviour identified in no more than 50 words. Where a conviction or charge has been served, this should be specified.

### Frequency

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Frequency should always be recorded as one unless the same exact behaviour / charge / conviction have occurred multiple times.

### Date

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This refers to the date the behaviour occurred rather than the date the charge was given or conviction served.

## ASSESSMENT INTRODUCTION

When conducting the interview, it is important for staff that you provide an introduction to the rules of the interview and what to expect. It is also important that expectations around information and time needed are clearly explained to the respondent before the interview is made.

When introducing the assessment, the following points should be covered:

- “Thanks for finding the time to be able to speak to me today.
- As you know I’m wanting to talk to you today about \_\_\_\_\_.
- This should take about an hour and a half. I know you have a lot to say but please try and focus on the specific question I ask you as I’m sure the topic will come up at some point in the interview.
- Because of the short time frame there will be times where I will have to cut you off to make sure we get through the interview quickly and because the information will be asked at a later point.
- I’m interested in how he has been for the last three months. It can be difficult to think only about the last three months, but please try and stick to information that is relevant only to this period
- Very recent events may have a tendency to affect your responses about how Mr. \_\_\_\_\_ has been acting over the past three months. Please try to think of Mr. \_\_\_\_\_’s behaviour over the past three months when I ask these questions.
- I am also interested in the views of the team who work with him, and not just your opinion. Though I realise you have great insight into his situation.
- I’ll also be asking you questions about the client’s environment and how the staff are with him. This is not to criticise the team but to understand the impact he has on the team and vice versa.
- I’d also appreciate it if you did not discuss individual staff members as this is not a performance review. If you have issues with individual staff you should talk to your line manager.
- Finally, this information will be discussed with your management, so please only tell me information you would feel comfortable speaking about with your own management.”

## CLIENT ITEMS

**Client items should be addressed first before the environment items. Ideally the person interviewing direct support staff should already know the client well and be aware of file information.**

### 1. Goals

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#### **Definition:**

This item explores the extent to which a client is achieving their personal goals. This should be measured against their Individual Plan (for larger goals) and for shorter terms goals against discussions / behaviour. Goals may include getting to do preferred activities through to purchasing new items of clothing or regaining decision making power from substitute decision makers (even if this is against the wishes of services providing support).

Staff should report progress on goals, whether it be activity that brings the client towards or away from their goals. Incompletion of goals may be due to client or environmental factors.

#### **Useful Questions:**

- What are the client's short term goals?
- What are the client's long term goals?
- Is the client engaged or interested in obtaining goals?
- Are they moving towards or away from their goals?
- What goals has the client achieved in this assessment period?
- How far towards their goals has the client got in this assessment period?
- Is this less or more than anticipated by the client?
- What got in the way of moving towards their goals this period?

#### **Scoring Guide:**

##### Risk Rating

A 'yes' would be scored if the client is taking active steps to disengage from his / her goals. This may include spending significant time away from the service or acting in a way that is opposite to their identified goals (e.g. using substances when they have identified they want to quit).

A 'maybe' would be scored if the client is engaging in some goals but actively undermining others. Alternatively the service may have not been actively supporting the client in achieving goals where possible.

A 'no' would be scored if the client does not appear to be actively undermining their attempts to achieve their goals or there appears no barriers within the service to goals being achieved.

### Protective Rating

A 'yes' would be scored if the client is achieving most of their goals, or at least on a path towards achieving their major ones. These goals do not necessarily have to be clearly pro-social.

A 'maybe' would be scored if they are achieving some of their smaller goals or making small progress on major goals. Alternatively the client may be making poor inroads, but the service is placing significant effort into helping the client obtain their goals.

A 'no' would be scored if the client is not achieving their goals.

### **Rationale:**

The Good Lives Model (Ward) for offender rehabilitation identifies that the promotion of client goals in the context of rehabilitation may improve the therapeutic relationship and increase motivation to change around offending behaviour. Supporting a client's goals also provides a client with a sense of self-efficacy and shows the client that support services are interested in their wellbeing, beyond their offending behaviour. Promotion of goals is also likely to have a distal effect on offending behaviour as engagement in goals can create meaningful day activity. It also creates something that the client may fear to lose should they return to custody. The mere influence it may have on engagement is also particularly useful given: firstly, the lack of enforcement abilities most community rehabilitation services have and secondly, the evidence that the therapeutic relationship has the strongest impact on outcome for psychological therapies.

## 2. Compliance with Supervision

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### Definition:

This item should consider compliance with legal and disability service supervision. This includes attending P&P, and accepting support by staff in the community. It is important that the supervision should be around offending matters and not aspects that do not relate to offending (e.g. you would not score if the client moves away from staff in the community if they are not an absconding risk and their victim group etc is not near by). Supervision also refers to compliance with conditions such as not consuming alcohol, not attending places where children frequent or not being within proximity to particular people.

### Useful Questions:

- What types of supervision does the client receive?
- Is the client under formal supervision of Probation & Parole services or other similar service?
- What is the nature of disability support and supervision provided? (e.g. hours of drop in support)
- Does the client follow expectations of the service and legal orders?
- Does the client attempt to avoid or gravitate towards supervision?
- What has the client's level of engagement been like with staff?
- When does the client have difficulty in adhering to his supervision?
- What have been the consequences for the client adhering and not adhering to conditions?

### Scoring Key:

#### Risk Rating:

A 'yes' would indicate the person refuses to attend appointments or refuses supervision in the community in most circumstances or avoids the accommodation placement. A 'yes' should be given if there is regular breaching of conditions or avoidance of supervision or the breach / lack of supervision poses serious risk to offending.

A 'maybe' would be irregular interaction with P&P / CCG or similar offender service or some attempts to leave care in the community. Alternatively, the avoidance of supervision is regular, but limited to times that are low risk for offending. For example, the client is a child sex offender, is compliant in the community but refuses psychological intervention. A 'maybe' would also be scored if the client attempts to avoid supervision at specific times. For example, a client known to shoplift goes out of sight in shops when in the community. A 'maybe' may also be given when there is evidence that the client displays concerning behaviour when supervision is not in place.

A 'no' would be when the client generally attends appointments and accepts support. Occasional comments about not enjoying the level of supervision would still be a 'no'. A 'no' can also be maintained if a meeting with P&P or similar agency has been missed due to innocent or unforeseen circumstances.

**Protective Rating:**

A 'yes' would be scored when the client actively seeks out supervision or engages with supervision when it is not required. This may include calls to staff, dropping in at offices or actually requesting more support. A 'yes' may also be scored if the client is open and forthcoming about behaviour when it is not observed (e.g. calling up to say they have acted inappropriately in order to get support around how to manage the incident).

A 'maybe' would be scored when a client generally attempts to associate with staff. A 'maybe' may also be scored if the client is observed to permit supervision or facilitates it (e.g. attempts to be home when supervision is expected). A 'maybe' would also be scored if the client is prepared to answer truthfully, if asked about their behaviour.

A 'no' would be scored when there is no evidence that the client does not make extra effort to facilitate supervision.

**Rationale:**

A lack of cooperation with supervision is related to the likelihood of re-offending by offenders with a history of sexual offending (Boer, Hart, Kropp, & Webster, 1997; Hanson & Harris, 2000) and violent offending (Quinsey, Harris, Rice, & Cormier, 2006).

In the intellectually disabled (ID) population, the degree of insight and executive functioning enabling comprehension of the importance of complying with supervision is compromised compared to individuals without such disability. The assessor is also interested in attempts to evade supervision, disobey rules, manipulate supervisory staff, including their key worker (or personal support provider).



### 3. Compliance with Treatment

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**Definition:**

Treatment includes compliance with a behaviour support plans, accepting medication for issues related to offending, (e.g. anti-psychotics, methadone or anti-libidinal) attendance at therapy or similar appointments. It should be remembered that this is a client item and therefore does not relate to access to treatment. Therefore, the lack of treatment available should not be factored into scoring. Rather, it is the client's response to treatment that has been made available. A client's efforts to seek further treatment, however, would be considered in the protective domain. Another factor to consider is whether the treatment is appropriate for the individual. A client should not be scored down if the client fails to engage in therapy when the therapy is delivered in a manner inappropriate for the client (e.g. attending a non-adapted group therapy program).

**Useful Questions:**

- Does he receive treatment? (medication, therapy, behaviour support)
- What is his view of the treatment?
- What is his engagement like? (does he ever miss sessions / does he participate/take the medication?)
- Have there been any positive or negative results of treatment?
- Does he complete homework or express skills learnt?
- Has the client sought out treatment?
- Has he attended appointments in the last period?

**Scoring Key:****Risk Rating:**

A 'yes' would be scored if the client refuses to engage in a majority of interventions or those interventions which are expected to have the largest impact (e.g. refusing anti-psychotic medication but psychosis showing closest relationship to the client's violence).

A score of 'maybe' should be given if the client refuses some aspects of treatment or engages at a superficial level (e.g. has reinforcement chart pinned up and only refers to it occasionally when making demands of staff).

A score of 'no' should be given if the client does not refuse treatment or refusal is around a small aspect of treatment without being significantly deleterious to the overall intervention (e.g. obeys house rules but argues about or disagrees with a number of rules).

**Protective Rating:**

A 'yes' would be appropriate where the client attempts to engage in extra treatment independently or is pre-occupied with implementing the intervention. Other signs might include obvious enjoyment of treatment, requesting medication when getting agitated, reminding staff of a reinforcement program, reviewing their behaviour support plan or diligent completion of homework.

A 'maybe' would be scored where the client attempts homework tasks and shows effort in attending treatment, or complying with it. The client may also show motivation to resolve barriers to treatment (such as organising transport) or facilitates the participation of others. The client may also be enthusiastic with elements of their behaviour support plan but not engage in other appropriate components. Engagement over the long term would also be at least partially protective, depending on the time frame.

A 'no' would be scored where the client participates in the treatment but does not do anything that goes beyond expectations within the treatment setting (e.g. attends but does no or little homework). Alternatively the client receives no intervention.

**Rationale:**

The willingness to comply with and response to treatment is of importance for risk management. A negative attitude toward intervention has been associated with violent recidivism (Dempster & Hart, 2002) and failure to complete treatment has been found to be a consistent marker for both sexual and general recidivism (Hanson & Bussière, 1998). There is reliable evidence that offenders who attend and cooperate with treatment programmes are less likely to reoffend than those who reject intervention (Blud, Travers, Nugent, & Thornton, 2003). Short periods of treatment and unplanned discharge have been associated with recidivism in offenders with intellectual disabilities (Lindsay, 2002).

## 4. Pro-Criminal Attitudes

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### Definition:

Pro-criminal attitudes refer to beliefs and attitudes that directly promote offending behaviour. This may include sexual deviance (i.e. inappropriate sexual thoughts), anti-authoritarian views, a sense of revenge, extremist or militant beliefs or a strong sense of entitlement to others property. This item does not include denial of previous offences or controversial views that are not closely related to the client's history of offending (e.g. racism when there is no evidence that the client has targeted victims of a particular cultural group).

### Useful Questions:

- What, if any are the clients pro-criminal attitudes?
- What, if any are the client's pro-social attitudes?
- Does he have anti-Police or law attitudes?
- Does he promote strong themes of revenge or violence to achieve needs?
- Does he have a strong sense of entitlement (i.e. he is allowed to do as he wishes as he is special)?
- Does he have deviant beliefs (i.e. excitement towards objects that would not normally be associated with such feelings, such as children or animals)?
- Does the client have any particular pro-social beliefs?
- Does he make positive or negative comments related to his offending (e.g. brag about the offences, state they don't worry about consequences)?
- Have these attitudes changed? Have they got better or worse?

### Scoring Key:

#### Risk Rating:

A 'Yes' would be scored if the client is identified as expressing criminal attitudes during the period of assessment. This may include a client saying he has a right to sell drugs, or that physical violence is the only way to get anything done. This means it cannot be inferred by behaviour, but has been clearly stated by the client. For example, one cannot infer by a client sexually offending against a child that he has paedophilic thoughts, as the offence may have been an issue of access or knowledge. One should also not include possible jokes as evidence, as this may be simply a way of coping with guilt over behaviours. High scores on measures such as the *Questionnaire on Attitudes Consistent with Sexual Offending* or the *Criminal Sentiments Scale* over the assessment period would also warrant a 'Yes'.

A 'Maybe' would be scored if there is partial evidence of criminal attitudes or the attitudes are not directly related to offending. For example, having a strong degree of entitlement is not in itself pro-criminal, unless it clearly relates to taking others property. Where a client is known to have anti-social attitudes but none have been heard in the assessment period, a 'maybe' is warranted.

A 'No' would be scored when there is little or no clear evidence of pro-criminal attitudes. This may still occur in the context of a high rate of re-offending. This may often be the case when offences occur in company or the client is known to be impulsive or be emotionally dysregulated.

**Protective Rating:**

A 'Yes' would be scored if the client demonstrates attitudes that are inconsistent with offending. This might be demonstrating concern for others or comments about other clients needing to "grow up" due them demonstrating behaviour they used to exhibit. In this situation, it is important to differentiate 'talking the talk' from real beliefs. This can be asking how the opposite may be true (e.g. in what ways is being aggressive helpful). This would provide evidence the client has really considered the options and is not merely saying what the interviewer wants to hear.

A 'Maybe' would be scored if the client has some attitudes that are inconsistent with their own history of offending. Pro-social sexual beliefs would not count if the client is not a sex offender. Another possibility is if the client expresses pro-social attitudes in certain circumstances. For example, the client may have pro-social attitudes when not psychotic or when not in the presence of peers.

A 'No' would be scored if there are no evident attitudes that are inconsistent with the client's offending behaviour. This is not to say the client does not have pro-social attitudes, but that none are evident that contradict his offending, or could be used to challenge his anti-social ones. A 'No' would also be scored where there may be pro-social attitudes but they have not been witnessed.

**Rationale:**

Criminal attitudes have been identified as one of the 'big four criminogenic needs' (or dynamic risk factors) by Andrews & Bonta (Andrews & Bonta, 2006) that are most directly related to risk of re-offending and should be a primary target for intervention. There is ample evidence of the importance of this factor as a causal mechanism behind violent behaviour (Novaco & Taylor, 2004). Intellectually disabled (ID) sex offenders have also been shown to demonstrate sexually deviant attitudes (Broxholme & Lindsay, 2003). Recent meta-analyses (e.g., Craig, Browne, Stringer, & Beech, 2005) have consistently found deviant sexual interests as a primary determinant of sex offender recidivism. In sex offenders, persistent deviant sexual behaviour is hypothesised as a result of deviant sexual preferences, which are mediated by distorted cognitions toward victims, selective attention and inappropriate sexual arousal (Lindsay, 2004).

## 5. Inappropriate Preoccupation

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### Definition:

While criminal attitudes look to beliefs and attitudes consistent with offending, this item considers behaviours that, whilst not offending in itself, are consistent or correlated with offending. Generally this is considered to relate to criminal culture and preoccupation with factors associated with offending. This would include involvement with anti-social peers, bullying other clients in the house, threatening staff, being preoccupied with the fire brigade (if an arsonist), watching children's shows (if a child sex offender), collecting weapons or break-in implements or wearing gang 'colours' (badges, jackets).

### Useful Questions:

- Did the client show any inappropriate preoccupation related to his past offences in the last period of assessment? Give examples.
- Is he a member of a gang?
- Has the client associated with people who have a criminal background or promote offending (other than those he lives with) during the assessment period?
- Is he religious or does he belong to or engage in any pro-social groups or activities?
- Has the client been engaged or interested in activities associated with his history of offending during this past period of assessment?
- To what extent has his preoccupation changed in the last period of assessment?

### Scoring Key:

#### Risk Rating:

A 'Yes' would be scored where there is clear preoccupation with criminal culture during the assessment period. The interest should relate to their own offending behaviour (e.g. fire if history of arson). The focus of interest itself does not need to be anti-social (e.g. schools, fire brigade). Voluntary involvement with anti-social peers with a history of offending in the community should score a 'Yes'. This excludes where the interaction is forced, e.g. with clients within the service the person resides or in structured setting like group therapy, unless he also chooses to socialise with this group in his free time.

A 'Maybe' would be recorded when the interest, whilst associated with the offending behaviour, cannot be clearly understood to increase risk. For example, a client may become interested in the fire brigade as a way of achieving the function served by lighting fires or is a sign of an increase in insight into the negative impact the behaviour causes. The presence of clothing or artwork affiliated with offending would also warrant a 'Maybe' when there is little evidence of on-going peer association (e.g. shirts promoting substance use or motorcycle gang affiliation without associating with the group). A 'maybe' would also be appropriate where anti-social behaviour of peers are suspected but not confirmed.

A 'No' would be recorded when the client elicits anti-social views but does not act in a way that promotes such views. T-shirts promoting music interests (e.g. rap, metal) does not constitute anti-social affiliation. Furthermore, dressing in a manner consistent with a sub-culture (goth, punk, emo) also does not constitute preoccupation with criminal culture.

**Protective Rating:**

A 'yes' would be scored if the client is engaged in a pro-social cultural group (such as a non-extremist religious group) or acts in a manner that goes against such cultures (such as working for groups to help keep others out of custody).

A 'maybe' would be scored where the client may be involved in some pro-social groups or behaviour but also have some anti-social association. A 'maybe' may also be warranted where the association may be questioned in terms of whether the interest counters criminal culture. For example, the client may do presentations about their reformed ways, but that is not to say these talks actually counter other associations or interests.

A 'no' would be reported where the client may engage in a number of activities but they do not counter criminal culture. These may include engagement in leisure, educational or employment. Whilst aiding in reducing risk of re-offending, they are not necessarily inconsistent with engagement in a criminal culture or pre-occupation with factors associated with offending.

**Rationale:**

Association with anti-social peers has been identified as one of the four most influential factors in general risk of recidivism (Andrews & Bonta, 2006). Similarly, interest with offending specific issues has shown increased risk for specific offences, such as arson (MacKay et al., 2006), drug offences and sex offences. In sex offenders, pornography has only shown at best a weak relationship to risk of re-offending (Endrass et al., 2009; Seto & Eke, 2005), with the content of the pornography being important and only amongst high risk offenders (Kingston, Fedoroff, Firestone, Curry, & Bradford, 2008). Interest in factors proximal to crime have also been shown to be relevant in people with an ID, with ID arsonists also showing an interest in topics related to fire (Devapriam, Raju, Singh, Collacott, & Bhaumik, 2007). Gang involvement in particular is suspected to have a strong influence on offending due to its association with anti-social peers, weapons and their likelihood of promoting anti-social acts (such as drug production / distribution) (Jenson & Howard, 1998).

## 6. Offence Management

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### **Definition:**

This refers to the extent to which the client is adhering to their cycle of offending, and more specifically whether they are acting in a way that suggests they are getting closer to another offence. This would include attending locations related to offending, associating with particular peers or interacting with their victim group. Other features of the offence cycle include access to means, (e.g. lighters, weapons, car jacking implements) mood and grooming.

Note: A client's path to offending (offence cycle) must be understood in order to score this item.

### **Useful Questions:**

- What is the usual pattern of offending, from start to end?
- Is there a lead up that occurs over time?
- What needs to happen / be available for the offence to occur?
- What is likely to trigger the person for the behaviour to occur?
- Have these triggers been present in the past month?
- What sort of victims has the client previously targeted?
- How have they approached or groomed victims previously?
- Has there been any similar behaviour in the last period of assessment?
- In what situations is the client most likely to display the behaviour?
- Has the behaviour appeared planned, opportunistic or impulsive?
- Has the client had access to these means to offend recently?
- What consequences have there been to the behaviour over the past month if it has occurred (both good and bad)?
- Is there anything about the offence itself that promotes further offending (e.g. guilt)?
- Is the client aware of their offence cycle?
- To what extent has the client's engagement in factors that relate to their offending increased or decreased in the last month?

### **Scoring Key:**

#### Risk Rating:

A 'Yes' would be given when the client has access to all means (victims, lack of supervision, implements) to engage in the offence and also appear to have the motivation to offend. Another way of putting this is that the client is engaged in their 'offence cycle' at a point where they are imminently likely to offend or there have been clear attempts to engage with the victim group in a manner that promotes offending.

A 'Maybe' would be given when a client is identified as having access to some but not all of the means and having motivation to commit the behaviour. This may include increasing isolation, depressed mood, negative self talk, increased involvement with a certain group of peers or sabotaging behaviour. A 'maybe' may also be scored if the client's offence cycle is unknown.

A 'No' is where the client is acting in a way that does not reflect their offence cycle or they do not have access to critical means to offend (e.g. weapons or victim type).

**Protective Rating:**

A 'yes' would be recorded where the client is aware of their offence cycle and makes efforts to avoid it. The client is able to identify high risk situations and has been seen to implement strategies in order to reduce risk.

A 'maybe' would be recorded where a client is aware of their offence cycle but does not act in a way to avoid it. They may also be able to talk about strategies but be unable to implement them. Alternatively they may be able to recognise they are engaged in their cycle but have not acted in a way to address it.

A 'no' would be reported when a client is not aware of their offence cycle, is in denial of their offending or does not see their role in addressing their risk of re-offending.

**Rationale:**

People with an ID have been shown to be less specific in their victim group than non-ID offenders, at least in relation to sex offenders but is also suspected for other offences (Blanchard, Watson, Choy, Dickey, Klassen, Kuban, & Feren, 1999). A high frequency of grooming behaviour (i.e., manipulating a potential victim for sexual purposes) has been found in this population, and this behaviour is typically less sophisticated than that used by non-ID sex offenders (Parry & Lindsay, 2003). Grooming and acquisition of potential victims is generally of a predictable nature and it is important to note if the client is deviating from his/her pattern or if the pattern is being replicated in some fashion. It is likely that these issues would be problematic for ID clients who have not been charged with sexual offences, but show sexually challenging behaviours.

There is strong evidence that ID sex offenders have unique pathways into and during their offending behaviour that vary slightly according to the situation and opportunity and is likely to be similar for other forms of offending (e.g., Lindsay, Steptoe, & Beech, 2008).



## 7. Emotional Coping Ability

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### Definition:

This item describes whether a client is able to self-manage their expressed emotional state and deal with unpredicted or negative events in their lives. This does not relate to whether the client has experienced negative events, but how they have coped with such events and how high or low their emotions get. Emotions include anxiety, sadness, anger and excitement. Examples of behaviour that supports this item would be reactive violence where little effort seems to be made by the client to control anger or other negative mood states and oppositional interactions with others (e.g., supervisory staff, other clients). As well, clients may show poor problem-solving ability when under stress or experiencing difficult emotions. Clients will show different degrees of ability, for example, to cope with change, particularly if the change is due to changes such as those that are due to unpredictable events (e.g., an unexpected move to a new facility, or a death in their family).

### Useful Questions:

- What has been the client's most common way of dealing with upsetting events over the period of assessment (e.g. crying, avoidance, anger)?
- Would you consider him very emotionally reactive? How out of control does he become? When does he become out of control?
- How has the client's mood changed over the past assessment period?
- What emotional responses have been most common over the period of assessment?
- Over the period of assessment, has the client had severe mood swings? In what situations?
- To what extent do you think the client's responses have been reasonable to the actual problem?
- Does the client get emotional when reacting to situations or does the client use anger / emotion to get things done for him (e.g. angry when robbing someone)?
- Did the client act in an emotional way that you did not expect over the assessment period?
- Are there examples when he has hung in and managed emotions even when it would have been understandable if he had been upset?

### Scoring Key:

#### Risk Rating:

A 'yes' would be scored if the client exhibits high levels of reactive aggression, crying or anxiety (including escape) to situations that are likely to be perceived by the client as stressful. Reactions are also likely to be fast and responses extreme. A client who has self harmed would warrant a 'yes'.

A 'maybe' should be recorded if the individual sometimes responds in a very emotional manner or their responses, whilst not extreme are moderate but regular. Clients who have strong responses but take a long time to build to such emotions should also be scored a 'maybe' due to the increased opportunity to intervene.

A 'no' should be recorded if aggression is instrumental (uses aggression to obtain needs rather than in response to threat). A 'no' is also warranted if the client expresses emotions in a way that is relative to their experiences and copes in a way

that does not create additional harm to themselves or others. Those with flat affect would also warrant a 'no'.

**Protective Rating:**

A 'yes' should be recorded if the client is able to identify and implement strategies to regulate their emotions. Implicit in this is the client's ability to effectively label their emotions and show insight into their emotions. Client's who have flat affect do not necessarily score a 'yes' on this item, but rather need to show appropriate ways of coping with situations that would be anticipated to result in strong emotional responses in others.

A 'maybe' would be recorded if the client shows some emotion regulation skills. The labelling of emotions does not necessarily result in a 'maybe' but must be accompanied by appropriate responses. Efforts or interest in addressing dysregulation is also evidence to support a 'maybe'.

A 'no' should be scored if the individual shows no effort in implementing regulation skills. This may be appropriate for those clients who, whilst not showing high levels of emotion or avoid situations which create high emotion, do not show clear skills when exposed to emotional situations.

**Rationale:**

Emotional dysregulation has been identified as being a significant factor in violent offences (both sexual and non-sexual) due to its influence in reactive aggression. Juvenile offenders have been shown to experience higher levels of negative affect compared to non-offending juveniles (Plattner et al., 2007) while disorders that include emotional dysregulation, such as Borderline Personality Disorder and Bipolar Disorder have also shown links with aggression and anti-social behaviour (Barlow, Grenyer, & Ilkiw-Lavalle, 2000; Lieb, Zanarini, Schmahl, Linehan, & Bohus, 2004). There is evidence to suggest people with an ID are more likely to have poor emotional coping abilities due to poorer verbal and problem solving and general emotional regulation skills (Janssen, Schuengel, & Stolk, 2002).

## 8. Self-Efficacy

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### **Definition:**

Self-efficacy refers to a client's belief in their own ability to perform in a manner that allows them to attain their chosen goals. Internal attribution (seeing one's self as being responsible), effective problem solving and assertiveness are all evidence of self-efficacy.

### **Useful Questions:**

- During the assessment period, to what extent has the client seen themselves or others as responsible for what is happening in their life?
- Over the assessment period, has there been an occasion when something bad has happened? Who did the client blame: himself or external forces? Was this accurate?
- Over the assessment period, has there been an occasion when something good has happened? Who did the client attribute this to: himself or external forces? Was this accurate?
- Does the client give up easily on tasks, even tasks he wants to do or capable of doing?
- In a difficult situation, is he likely to ask for help or attempt to solve the problem first (not just react to it)?
- Are there examples when he has put a lot of effort in to succeed in the recent period of assessment (even when success looks unlikely)?

### **Scoring Key:**

#### Risk Rating:

A 'yes' should be scored if there is evidence the client has an external attribution style, has poor problem solving skills or manipulates the environment to get their needs met. A passive, dependent or passive-aggressive style should also be considered a risk factor and is relevant to this item. Quickly giving up or relying on others for simple tasks are also evidence.

A 'maybe' should be scored if the client sometimes demonstrates some of the above styles or does so to a small degree. Alternatively, they may act in that way but there is competing evidence about having a sense of self-efficacy.

A 'no' should be scored if the client does not demonstrate an external attribution style and is not overly a passive in their interaction style.

#### Protective Rating:

A 'yes' should be scored if the client demonstrates an internal attribution style. This could be identified by the client saying things are their fault, persisting in difficult circumstances, showing effective problem or taking on challenges by them selves in the belief they may have a positive impact. The client may also take on a high level of responsibility in programs or at home. The effectiveness of the skills used is irrelevant as the issue is about whether the person believes they are in control of their destiny.

A 'maybe' should be scored if the client has been displaying some behaviours that suggest self-efficacy but also demonstrating behaviours or beliefs that demonstrate

otherwise. Poorly implemented problem solving would also be considered as 'maybe' protective.

A 'no' should be scored if the client shows little evidence of self-efficacious, assertive behaviour or attitudes.

**Rationale:**

A lack of personal power, low-self esteem and lack of assertiveness have been related to reoffending in offenders with intellectual disabilities (Hayes, 1991; Hudson, et al., 1999; Lindsay, Elliot, & Astell, 2004). Problem-solving, communication skills and assertiveness are common areas of treatment for ID sex offenders (Clark, Rider, Caparulo, & Steege, 2004) implying deficits in personal problem-solving and general coping ability for ID offenders. In addition, deficits in formulating reasonable plans are also known to be related to risk for sexual violence (Boer, et al., 1997) and general violence (Webster, Douglas, Eaves, & Hart, 1997). For ID clients, it is likely that their ability to plan is somewhat underestimated or at least underused given that their support network may not feel the client is able to plan effectively, or this role has been usurped by the support person(s) in the client's life.

Conversely, the ability to withstand urges and "do the right thing" contribute to a sense of self-efficacy or resilience in the face of adversity or temptation.

## 9. Relationships

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### Definition:

This item relates to the client's personal relationships. It includes both intimate (e.g. girlfriend) and platonic relationships and includes informal (family) and formal (staff) ones. It also includes relationships with more distant providers such as P&P officers and case managers, particularly if it is felt they have an influence over risk of re-offending.

### Useful Questions:

- Who would the client see as their important relationships?
- Does the client have any relationships outside his formal supports and family that he has been engaged with over the assessment period?
- Does the client instigate conversations with others?
- What has the client done to maintain relationships?
- Has the client shown interest or effort in developing / improving relationships?
- What is his relationship like with his family?
- Does the client have a sexual relationship?
- Does he have an opportunity to meet people?
- Would staff describe him in positive terms?
- Has the client had any arguments with others in the last assessment period?

### Scoring Key:

#### Risk Rating:

A 'Yes' should be reported if the client is experiencing interpersonal difficulties with a significant number of relationships or those that are particularly important (e.g. girlfriend or parent) and they are not managing it well. A yes would also be reported if the client is demonstrating very poor relationship skills even if they think there are no problems with their relationships (e.g. spousal abuse). Social isolation should also be considered under this category.

A 'maybe' should be recorded where the client is contributing to relationship difficulty with some relationships or significant difficulty with less important relationships which the client refers to (e.g. a brother he sees rarely but thinks about a lot).

A 'no' should be recorded if there is a general absence of difficult relationships or lack of unhelpful interaction patterns, (though this may still mean the client is isolated).

#### Protective Factors Rating:

A 'yes' should be reported where the client demonstrates good ability to manage relationships and establish new ones. Evidence of a 'yes' would be others describing the client in positive terms. A client who scores 'yes' would be expected to be outgoing, sociable and have good communication skills. They may also have a stable intimate relationship and a large, stable group of friends (though this is not essential).

A 'maybe' should be recorded where the client shows some ability to manage relationships, though does not necessarily have to have good communication skills and may still be somewhat avoidant. They may also have a large group of friends, but this is not necessarily stable.

A 'no' would be reported when few effective relationship skills are noted.

**Rationale:**

Relationship conflict has been identified in a number of meta-analyses as being a strong predictor of general re-offending (Gendreau, Little, & Goggin, 1996). Relationship problems including an inability to understand normal sexual relationships, a lack of relationship skills (in intimate and non-intimate relationships), difficulty mixing with the opposite sex and poor peer relations have been noted as typical characteristics of ID sex offenders (Lindsay, 2002). These same difficulties may well be equally profound in ID clients who exhibit other sorts of challenging behaviours, including physical violence. This is not to discount that a strong relationship with some peer groups, (namely anti-social) is well known to promote offending. In addition, the risk literature widely acknowledges the inability to form lasting intimate relationships or maintain non-abusive relationships as increasing risk for sexual (e.g., Boer, et al., 1997; Hanson & Thornton, 1999, 2003), physical (Webster, et al., 1997), or spousal violence (Kropp, Hart, Webster, & Eaves, 1995). Perhaps less problematic in terms of violence likelihood, but ID clients often profess good interpersonal relationships or skills, only to show minimal social interactions, estrangement from family, and negative peer relations.

## 10. Substance Abuse

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### **Definition:**

Substance abuse includes the use of illicit drugs and the misuse of alcohol or prescription medication (in that it specifically increases risk of re-offending or there is a condition of release that the client cannot use alcohol).

### **Useful Questions:**

- Does the client have any history in using illicit substances or consuming alcohol?
- Has the client taken illicit substances or alcohol in the last assessment period?
- Which substances?
- How often has the client been using substances?
- Does the client have a history of offending whilst under the influence?
- Has he made attempts to get alcohol or drugs?
- Which substances?
- Does he ask to have access to substances or bring up the topic? How often?
- Is the client open in talking about their substance use?
- Is the client engaged in AoD treatment or use strategies from previous treatment?

### **Scoring Key:**

Note: If the client has no history of substance abuse a 'no' should be reported for Risk and 'yes' for Protective.

#### Risk Rating:

A 'yes' should be scored if the client has regularly uses illicit substances or abused alcohol in the assessment period. Abuse of alcohol is apparent if the client requires external influence to end a drinking session or if the client usually shows challenging behaviour (or offending behaviour) when drinking, e.g. becomes violent. Irregular use may be scored a 'yes' if the drug used is hard or has been shown to strongly influence offending when used (e.g. Ice or Heroin).

A 'maybe' should be scored if the use of illicit substances is suspected but cannot be confirmed. Alternatively the client drinks regularly and there is question about the impact it has on their behaviour.

A 'no' should be scored if the client has not used illicit substances or there is good evidence the substance used has shown no relationship with offending for the behaviour (e.g. alcohol) or is suspected to have a protective effect (e.g. CNS suppressants).

#### Protective Rating:

A 'yes' should be scored if the client demonstrates strong anti-drug attitudes, or engages effectively in AoD treatment (this would also include using strategies previously taught to remain abstinent when not in therapy). A 'yes' should also be scored if the client has no history of substance abuse.

A 'maybe' should be scored if there is some engagement in therapy but the client does not engage in all aspects (e.g. fails to complete homework) or there are some anti-drug attitudes. A 'maybe' may also be scored if it is believed the client avoids areas where he might obtain drugs.

A 'no' should be scored if the client is not in therapy and does not have anti-drug beliefs or is saying they want to start using again.

**Rationale:**

Substance use has been shown to be a strong risk factor in risk of recidivism and in the development of offending behaviour for the general population, across offence types (Bonta & Andrewes, 2007; Moffitt, Caspi, Harrington, & Milne, 2002). Although some studies have shown differential impact depending on the type of substance, with question revolving about the impact of Marijuana (Taxman & Thanner, 2006). Substance abuse is also a reliable predictor of reoffending in ID offenders in general (Klimecki, Jenkinson, & Wilson, 1994), and the likelihood of offending is increased if the individual is dependent upon substances or uses illicit drugs (Winter, Holland & Collins, 1997). Although a recent study showed that out of the 'big eight' risk factors, juvenile ID offenders were less likely than non-ID offenders to have substance use issues (Frize, Kenny, & Lennings, 2008). Although the impact of substance abuse on people with an ID may be severe, as ID clients may have additional difficulties in relationships, employment, financial management, or accommodation due to substance abuse. Clients may also have limited understanding of the role that substance abuse plays in their behaviour, and perhaps make choices that elevate substance abuse over pro-social choices for treatment, relationships, or other activities that would increase their manageability.



## 11. Impulsivity

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### **Definition:**

Impulsivity refers to behaviour which is not planned and is committed without any consideration of the consequences on self and others. Impulsivity in this item refers to behaviour (inability to sit still) and cognition (e.g. inability to maintain concentration) but not emotion as it has been covered earlier. Evidence of impulsivity would include client problems with boredom, hitting without thinking, perseveration on tasks, distractibility and impatience.

### **Useful Questions:**

- Does he act without thinking?
- Does the client find it difficult to maintain attention on one activity for a long period of time?
- What has this been like relative to the previous assessment period?
- Does the client start a number of activities but fail to complete them?
- Is the client able to sit still for long periods of time (e.g. an 1 hour)
- Does he seem to not be aware of the consequences of his actions?
- Is his impulsivity consistent across settings?
- Has the client shown efforts to control their impulsivity recently that was unexpected? What did they do?
- Does he seem like he just can't manage his responses?
- In what situations does he show greater control?

### **Scoring Key:**

#### Risk Rating:

A 'yes' should be scored if the client has shown high levels of distractibility, hyperactivity or impatience in the last period of assessment. They are also likely to have had difficulty in completing tasks and engaging in activities for long periods of time. The client is likely to act spontaneously without consideration of timing or consequences if an opportunity presents itself. It is also important that issues of impulsivity have relevance to the offending behaviour. A diagnosis of ADHD does not automatically warrant a 'yes', but is likely to increase likelihood of identification.

A 'maybe' should be reported if the client shows some distractibility, hyperactivity or impulsivity but it does not significantly impact in their daily functioning (e.g. does not prevent them from completing work or therapy).

A 'no' should be reported if the client does not appear to have difficulty in concentration or attention. The client is likely to be able to focus on a task they enjoy for a long period of time and will consider courses of action before acting. The client may also show restraint in obtaining short term rewards in order to achieve long term goals.

#### Protective Rating:

A 'yes' should be recorded if the client is known to use strategies to manage their impulsivity. This may include 'stop, think, do' strategies, use of reminder cards as prompts or psychotropic medication related to attention (e.g. dexamphetamine). Problem solving strategies would also be appropriate here.

A 'maybe' should be recorded if the client makes some attempt to manage their impulsivity through strategies listed above but is generally unsuccessful. A 'maybe' may also be recorded if the client recognises their impulsivity and wishes to address it.

A 'no' should be recorded if the client does not attempt to use strategies to manage their impulsivity.

**Rationale:**

There is an extensive literature relating impulsivity to violent and non-violent offending (McKee, 2004). Childhood histories of ADHD have also been shown to be elevated in criminal populations (Soderstrom, Sjodin, Carlstedt, & Forsman, 2004). ID offenders are alleged to show a pattern of impulsivity, an inability to delay gratification and poorly controlled behaviour (Glaser & Deane, 1999). Impulsivity, either on its own or as a feature of personality disorder, is widely acknowledged as increasing risk for sexual (e.g., Boer, et al., 1997; Craig, et al., 2005), physical (Webster, et al., 1997), or spousal violence (Kropp, et al., 1995). Despite the association between impulsivity, offending and ID, there has been little research examining the three together.

## 12. Employment

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### **Definition:**

This item relates to the engagement of activity that would be viewed by the client or others as relating to a vocation. This can be paid or unpaid provided it is activity performed within a commercial context. A TAFE course, however, would be considered education whilst on the job training (e.g. apprenticeship) would be considered employment. This item also refers to the client's actions and not access to services, as this is covered in the Environment section.

### **Useful Questions:**

- Is he in a job? What is it?
- Does he enjoy the work he does?
- Is the job appropriate to his ability?
- What is his attendance like?
- What does he get out of working?
- Is he likely to offend whilst at work?
- Does the activities he engages in promote anti-social attitudes or behaviour?
- Is he looking for work?

### **Scoring Key:**

#### Risk Rating:

A 'yes' would be scored if the client reports they do not wish to engage in employment or they make active steps to avoid employment. A 'yes' would also be scored if the employment itself promotes offending or is illegal (e.g. drug dealing).

A 'maybe' would be scored if the client is unemployed and makes half hearted efforts to find employment or the client regularly misses work. Poor behaviour at work does not necessitate risk, as the key to this item is whether the person is occupied and gains a sense of achievement, purpose, mastery or enjoyment out of the activity.

A 'no' would be scored if the client appears to not have any issue with a willingness to attend pro-social work.

#### Protective Rating:

A 'yes' would be scored if the client is engaged in regular employment that occupies the client's time on a regular basis and the client derives a sense of achievement, mastery or enjoyment. Alternatively the client is displaying significant effort to find work.

A 'maybe' would be scored if the client has irregular attendance, makes irregular effort to find work or there are difficulties at work that may result in the client losing their job.

A 'no' would be scored if the client does not access work.

### **Rationale:**

Meaningful day activity in the context of school or work has been identified as one of the 'big eight' criminogenic needs by Andrews & Bonta (2006), suggesting that it is a primary risk area if not addressed. Employment provides activity, achievement and

meaning to an individual that is protective against crime as it helps develop an internal attribution style and focuses attention away from criminal activities. Enjoyable work also provides motivation to not re-offend for fear of losing the work. It also reduces contact with anti-social peers and provides finances which may be the function of theft. People with an ID often find it difficult to gain access to employment due to limits in their capacity. An offending background is likely to create further barrier to employment due to attitudes of others and their ongoing challenging behaviour (Martorell, Gutierrez-Recacha, Pereda, & Ayuso-Mateos, 2008). The fact offenders with an ID also tend to be in the milder range of ID (Lindsay, 2002) suggests that sheltered workshops may not be stimulating enough for many ID offenders, posing further risk for this group through drop out due to boredom, making this area a challenging one for service providers.

## 13. Education

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### Definition:

This item addresses education that is both formal and informal provided that it occupies time and is aimed at developing skills that can assist adaptive functioning or employment prospects. An art class would generally be perceived as leisure rather than education unless the class was aimed at generating employment. This domain does not consider treatment as this is covered by *compliance with treatment*. Like 'Employment', this domain refers to the client's behaviour and not the availability of educational options as this is addressed in the Environment section.

### Useful Questions:

- Is he engaged in education? What is it?
- Does he enjoy or dislike the education he does?
- Is the education appropriate to his ability?
- What is his attendance like?
- Is he likely to offend whilst in the current educational setting?
- What does he get out of studying (mastery? Achievement?)
- Does the activities he engages in promote anti-social attitudes or behaviour?
- Is he looking for educational activities?

### Scoring Key:

#### Risk Rating:

A 'yes' would be scored if the client reports they do not wish to engage in education or they make active steps to avoid education. A 'yes' would also be scored if the education itself promotes offending (e.g. applying to become a teacher if a child sex offender).

A 'maybe' would be scored if the client is not engaged in education and makes half-hearted efforts to find education or the client regularly misses classes. Poor class behaviour does not necessitate risk, as the key to this item is whether the person is occupied and gains a sense of achievement, purpose, mastery or enjoyment out of the activity.

A 'no' would be scored if the client appears to not have any issue with attending educational activities.

#### Protective Rating:

A 'yes' would be scored if the client is engaged in regular education that occupies the client's time on a regular basis and the client derives a sense of achievement, mastery or enjoyment. A 'yes' may also be given if there is evidence that the client has developed skills that promote adaptive functioning or is actively looking for educational opportunities.

A 'maybe' would be scored if the client shows some enjoyment or some development of skill or alternatively is making some effort to look for education.

A 'no' would be scored if the client does not access educational activities.

**Rationale:**

As stated for the above item, meaningful day activity in the context of education or work has been identified as one of the 'big eight' criminogenic needs by Andrews & Bonta (2006), highlighting it as a key area of risk and need that should be addressed. Early exiting of secondary studies, along with behaviour in an educational context has also been shown to be strong risk factors for further violent offending (Quinsey, Harris, Rice, & Cormier, 1998). Education provides many of the similar benefits that employment does. Although, education provides the additional advantage of skill development that may be directed towards employment or recreation, thereby building these domains to reduce risk of re-offending. For people with an ID, education around functional skills may be particularly helpful, though the need to adapt education programs and use of aids or one to one programs may be required.

## 14. Recreation & Leisure

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### **Definition:**

This item relates to meaningful day activity that does not relate to either employment or education. This could include engagement in hobbies, sport, computer gaming, art or music. This can be formally organised or something the client undertakes by themselves.

### **Useful Questions:**

- What does the client enjoy doing outside work / study?
- Does the client currently do any structured or organised sport or exercise? How often?
- What unstructured leisure options does he engage in?
- Is the activity appropriate to his ability?
- Is he likely to offend whilst engaged in the current recreational activity?
- What is his attendance like?
- Do the activities he engages in promote anti-social attitudes or behaviour?
- What does he get out of the activities?
- Has the recreational or leisure activity increased or decreased in the past period of assessment?

### **Scoring Key:**

#### Risk Rating:

A 'yes' would be scored if the client shows little interest in organised activities or activities that utilise his time. A 'yes' would also be scored if the leisure it self promotes offending (e.g. going to a public pool if a child sex offender). A functional replacement for the behaviour, however, does not mean high risk. For example, a client who enjoys breaking into cars may reduce the behaviour if they attend car racing events.

A 'maybe' would be scored if the client makes minimal effort to engage in leisure activities or only engages when outside parties pressure the client. Alternatively, 'maybe' should be recorded if the client appears to go through the motions of the activity without appearing to gain a sense of achievement, mastery or enjoyment. Poor behaviour during the activity does not necessitate risk, as the key to this item is whether the person is occupied and gains a sense of achievement, purpose, mastery or enjoyment out of the activity. A 'maybe' may also be scored if it is questionable whether the activity promotes offending (e.g. learning to box if the client is a violent offender).

A 'no' would be scored if the client appears to not have any issue with engaging in leisure options.

#### Protective Rating:

A 'yes' would be scored if the client is engaged in a number of leisure options on a regular basis and the client derives a sense of achievement, mastery or enjoyment. The client is also likely to seek out further activities and it may be seen to serve the function of the offending.

A 'maybe' would be scored if the client continues to search out leisure options but their time is not well occupied or they generate some level of enjoyment but are still somewhat dissatisfied. Similarly, they may find ways to spend their day but not in structured activities, e.g. playing computer games or watching TV as opposed to attending club sports or attending the PCYC.

A 'no' would be scored if the client does not seek out leisure options. Or they partake in unstructured activities but regularly say they are bored or the activity has no impact in keeping them out of trouble.

**Rationale:**

While leisure activity may seem to be more closely related to client goals than as an important factor in reducing risk of recidivism, recreation / leisure has consistently been shown as one of the most important factors to consider in reducing risk of recidivism for both juveniles (Cottle, Lee, & Heilbrun, 2001) and adults (Gendreau et al., 1996). Particularly important is the inclusion in formal activities, such as organised sport and crafts. It can often be difficult to find leisure activities that are appropriate for people with an ID, let alone when they are also at risk of expressing interpersonal violence. Despite this, the advantages of engagement are strong, with an increase in meaningful day activity, connection with pro-social peers and sense of achievement being provided. A number of studies have also shown reductions in challenging behaviour of people with an ID through the inclusion of recreational activity (Gencoz, 1997).



## 15. Mental Health

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### **Definition:**

Mental health refers to any mental disorder other than intellectual disability (as defined by the DSM-IV-TR). This means both Personality Disorder and acute Axis I disorders. This diagnosis must have been reported in a formal report written by a Clinical Psychologist or Psychiatrist.

### **Useful Questions:**

- What have they been diagnosed with?
- What are their typical symptoms when things are going badly with the disorder?
- Is the client still experiencing symptoms of this disorder?
- What have the symptoms been like during the previous period of assessment?
- How does the disorder impact on their offending?
- Is this disorder being treated? How? If so, how well is it being managed?

### **Scoring Key:**

#### Risk Rating:

A 'Yes' should be recorded if the client is showing strong evidence of a previously diagnosed mental disorder over the last assessment period. A 'yes' should also be recorded if the person has been diagnosed with a psychotic illness (e.g. schizoaffective disorder or schizophrenia) and they are having delusions or hallucinations or a disorder like Major Depressive Disorder and they are extremely teary, suicidal or lethargic. As substance use is captured elsewhere, substance use disorders do not count, though symptoms in Personality Disorders should be considered (such as a Borderline with suicidal ideation or self-harm).

A 'maybe' should be recorded if the client has a current mental disorder but there are few symptoms or the disorder has resolved during the period of assessment. Alternatively, 'maybe' should be used where the mental disorders mentioned above are queried but have not been confirmed and the client is showing symptoms.

A 'no' should be reported when the client has no evidence of current mental disorder.

#### Protective Rating:

A 'yes' should be given if the client is seeking treatment for the disorder and the client is benefiting from this. Actively participating in the treatment is insufficient to warrant a 'yes'. No evidence of a history of mental disorder should also be a 'yes'.

A 'maybe' should be awarded if the client is seeking help for the disorder but it is superficial (e.g. GP rather than Psychiatrist) or if the client is partially engaging in treatment and getting better or if they are engaging well but not improving.

A 'no' should be given if the client is not taking active steps to address the disorder/s or none is present.

### **Rationale:**

There is a relatively large literature regarding mental illness and violent or sexual offending by non-ID persons (e.g., see Boer, et al, 1997 and Webster, et al, 1997). And the rapidly expanding area of "dual diagnosis" and "forensic intellectual

disability" - reflecting the presence of mental illness in ID persons, indicates that paying attention to mental health is compulsory for both good assessment and treatment. A paper by Kerker, Owens, Zigler and Horwitz (2004) examined 200 papers on this topic and found that ID persons tend to be diagnosed more often than non-ID persons with anxiety and psychotic disorders. These same authors found that as severity of ID increased, diagnostic frequency of other disorders also increased.

ID clients experience a similar spectrum of mental health problems to non-ID persons, but arguably at a higher frequency and greater disruptiveness to overall functioning. Offenders with ID have a higher prevalence rate of mental illness than those who do not offend (Smith & O'Brien, 2004). Major mental illness is a likely causal factor that may lead to impulsive or irrational decisions to act in a sexually / violent manner (Dempster & Hart, 2002), loosen inhibitions or promote aberrant behaviour (Lindsay, 2004). The psychiatric assessment process for an individual with an intellectual disability may require collateral sources of information further than that in the general population. The ability to recognise the onset of symptoms, likely decompensation periods, seek appropriate treatment and comply with treatment regimes indicates the ability to self-manage mental illness.

Finally, self-harm risk and other-harm risk (history of actual of or threats thereof) are seen as reliable risk markers for violence by violent and sexually violent offenders who are experiencing a mood disorder (e.g., Boer, et al., 1997; Webster, et al., 1997; Kropp, et al., 1995). However, these variables are less clearly linked to violence by ID offenders.

## 16. Finances

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### **Definition:**

This item explores the extent to which the client is able to manage their finances and how their finances impact on their offending.

### **Useful Questions:**

- How much control does the person have over their finances?
- Does the client have a substitute decision maker who controls their finances (e.g. is there Guardianship)?
- Is the client's offending related to their financial situation (i.e. do they steal to have sufficient money to pay for their lifestyle or buy drugs)?
- Does the client ever get into financial trouble (e.g. run out of money so they can't buy preferred items such as cigarettes)?
- How does the client feel about their financial situation at the moment?

### **Scoring Key:**

#### Risk Rating:

A 'yes' should be scored if the client shows evidence they are unable to manage their finances and refuses support around the issue or is creating clear stress. Alternatively, the client is spending far beyond their means. A 'yes' should always be reported if financial issues appear to directly relate to risk of offending (e.g. theft, frustration with Public Trustee).

A 'maybe' should be scored when the financial difficulties are only occasional or there is a tentative link with offending.

A 'no' should be recorded when there are no apparent difficulties with managing their finances or the difficulties do not appear to influence risk of re-offending.

#### Protective Rating:

A 'yes' should be scored if the client has very good financial management skills and their management promotes opportunities for mastery, achievement or pleasure or that this domain is not related to their risk of offending. Alternatively the system set up for the client works effectively and they work well with this system.

A 'maybe' should be scored where the client has some skills or perceives their situation as positive or alternatively has expressed interest in gaining support to address their financial skills.

A 'no' should be scored when there is no evidence to suggest the client has effective financial management skills.

### **Rationale:**

Socio-economic status has long been argued a significant factor in risk of offending. The 'strain theory' by Mertons (1957) suggested that the pressures of poverty were an important factor in the decision to offend. More recently, this theory has been largely rejected. Rather, SES and financial status has been shown to have a complex interaction with offending, with poor environments also being associated with anti-social peers, poor mental health, job prospects, abuse and lack of leisure

options (Kubrin & Stewart, 2006). This is not to say that poverty or an inability manage finances is not implicated directly in risk of re-offending for specific offence types. For example, a lack of finances has long been shown to be implicated in the offence cycles of heavy substance abusers who requiring money to fund their habit (Webster, 1986). Recent research in New South Wales has also reflected a complex interaction between socioeconomic status and offending for people with an ID, with those in lower SES areas showing higher rates of ID offenders in court and increased levels of mental health issues (Hayes, Levy, Vanny & Greenburg, 2009).

## 17. Behaviour

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### **Definition:**

This item explores the client's actual behaviour over the course of the period of assessment. It examines both challenging and offending behaviour. This is identified through charges, convictions and incident reports.

### **Useful Questions:**

Note: Information for this section should be contained in the behaviour category at the start of the document, based on incident reports / court information.

- Has the client had any incident reports? What for? How many?
- Were they related to his offending behaviour?
- Has the client been charged or convicted of any offences? What?
- Is any behaviour of concern been suspected but not verified?

### **Scoring Key:**

#### Risk Rating:

A 'Yes' should be recorded if the client has been charged with an offence or it is known for a fact they have offended but have not been caught. Alternatively an incident report has been completed that relates to their offending behaviour (e.g. physical aggression, inappropriate sexual behaviour).

A 'maybe' should be reported if there is evidence of challenging behaviour (but it was of low severity, did not warrant an incident report or was unrelated to offending) or there has been suspected offending without confirmation.

A 'no' should be reported when the client has not offended or engaged in challenging behaviour.

#### Protective Rating:

A 'yes' should be given if the client is acting in a manner that is directly inconsistent with their offending behaviour (e.g. they are witnessed in buying goods or using intervention strategies such as self soothing).

A 'maybe' should be given if the client is acting to some degree in a way that may be inconsistent with offending, or attempting strategies but these are ineffective.

A 'no' should be given if the client is not acting in a way that is inconsistent with their offending behaviour.

### **Rationale:**

The need to examine past behaviour to determine the likelihood of future offending behaviour should be obvious. As early as 1911, Throndyke suggested "the best predictor of future behaviour is past behaviour". This statement still rings true, with the meta-analysis conducted by Cottle Lee & Heilbrun (2001) on juvenile offenders finding age of first conviction and age of first contact with the law as being the overall best predictors for recidivism and number of convictions being in the top ten. In adult offenders, offending history was found to be the strongest predictor of future

offending (Gendreau et al., 1996). In people with an ID, challenging behaviour frequently has been shown to be associated with poor adaptive functioning, poor mental health and further challenging behaviour (Allen & Davies, 2007). Meanwhile actuarial risk assessments that focus on offence history (e.g. VRAG) have shown strong predictive validity in those with an ID, highlighting that previous offending is just as important to consider in those with an ID. Unfortunately, to date, the relationship between past challenging behaviour and future offending behaviour has generally not been explored, other than at a theoretical level (Doyle, 2004).

## Environmental Items

The following section should be only completed **AFTER** the Client items section, as the interviews with the staff about the client are critical to assessing the staff items in this section.

### 1. Consistency of Supervision

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**Definition:**

Consistency of supervision refers to the utilisation of the same group of staff or supports over time. It also refers to a consistent approach used by all staff such that strategies are implemented in the same manner all the time. The client's opinion on this item may be valuable, as what someone else may see as stable, the client may interpret as inconsistent.

**Useful Questions:**

- What sort of supervision does the client have?
- Do they have legal supervision as well as disability services supervision?
- What percentage of staff are permanent?
- How long have staff worked with the client?
- How large is the staffing pool?
- When is the client not being supervised?
- When / where is it most likely staff might let their guard down in supervision?
- Is a weekly routine in place?
- Do staff implement procedures (house and Behaviour Support) consistently?

**Scoring Key:**

Risk Rating:

A 'yes' should be given if there is a high rate of casual staff, there is no core stable group of staff or there are reports that there are great differences in the manner in which staff implement strategies. A combination of few stable staff and their inability to engage the client may also warrant a 'yes'.

A 'maybe' should be given where casual staff are regularly used but there is a stable group of staff or there is a large group of part time staff but no core group of full time staff. There may be some discussion of poor consistency, but overall staff are not applying opposite strategies. Alternatively, the client may not be in the environment enough to benefit from any consistency of staffing that is present, reducing the ability of staff to form rapport.

A 'no' would be given where the majority of staff working with the client are regular and there are no complaints about a lack of consistency in the application of strategies.

**Protective Rating:**

A 'yes' should be given if a large group of staff have been working with the client for a significant amount of time and the client knows most very well.

A 'maybe' should be given if there is at least one major figure that has worked with the client over a long period who the client also gets on very well with. Alternatively the group has been stable but the client is not aware or well engaged with staff.

A 'no' should be awarded if no staff have been there for a number of years, or such staff have little to do with the client or are not liked by the client.

**Rationale:**

Recent research supports that offenders are best supported when there is a small consistent group of people providing treatment and supervision (Robinson, 2005). Intellectually disabled (ID) clients are arguably more dependent on consistent care and supervision from front-line staff (e.g., support workers) than non-ID clients as a result of their disabilities. Nonetheless, ID clients are adept at exploiting inconsistencies amongst staff. In addition, staff members may find themselves treating clients differentially as a result of the differing personalities and behavioural patterns of the individual clients. While this is somewhat of a natural human tendency (to focus positive attention on those who provide us with reinforcement), this also speaks to the importance of maintaining professional behaviour and boundaries. ID clients can often discern differential treatment (e.g., favouritism and its opposite) and this reinforces positive and negative behaviour patterns.



## 2. Attitudes toward the Client

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### **Definition:**

This refers to attitudes around both offending and ID. This might include beliefs about how offending behaviour should be dealt with (e.g. retribution for sex offences) and how to support those with an ID (e.g. a maternalistic view). This refers to direct support staff, management and staff from other services (e.g. guardian) with most weight placed on those with the closest influence. The appropriateness of the attitudes should be with reference to the agreed clinical approach, as described in their behaviour support documentation (e.g. formulation, IPRP, assessment, Behaviour Support Plan)

### **Useful Questions:**

- How do staff find working with the client?
- What are the attitudes of staff towards the client?
- Do staff find it difficult to work with the client or find it easy to work with them?
- Do staff have attitudes about the client that seems to upset the client, or would upset them if they knew of them?
- Do staff have very emotional reactions to the client's behaviour? In what way?
- How would staff act if the client were to re-offend? What or who would they blame?
- Do staff show concern or a lack of concern for the client?

### **Scoring Key:**

#### Risk Rating:

A 'yes' should be reported if there is a general attitude amongst staff around the individual related to their offending or disability that is reported to result in challenging / offending behaviour or is directly contrary to that described in the Behaviour Support Plan / IPRP. This may be a lack of empathy, over-vigilance, permissiveness or persecution. Alternatively there may be a splitting between staff of opposite views (e.g. permissiveness and over-vigilance).

A 'maybe' should be reported if the above views are identified in a few staff members or such beliefs exist across all staff, but only to small degree.

A 'no' should be reported if staff generally have consistent views and are not extreme and persecutory.

#### Protective Rating:

A 'yes' should be reported if staff show empathy, concern and validation for the client's view's of the world. They are also likely to be accepting of the client, regardless of their behaviour (not to say they will not call the Police if appropriate according to Behaviour Support Plans). The general approach should reflect what has been identified in behaviour support material (e.g. authoritarian, mentoring etc)

A 'maybe' would be warranted if staff show some of the above qualities.

A 'no' would be reported if the general attitude of staff does not reflect the above qualities.

**Rationale:**

Supervision of ID offenders is a difficult task for many reasons. The cognitive, emotional and behavioural difficulties that define this client group are very complex and varied requiring skilled intervention and patience. Non-compliance with rules by ID clients is arguably a pervasive feature of this client group. However, ID clients may be more non-compliant with insensitive staff members. “Challenging” behaviour may be violent and even sexually violent towards other clients, staff members, and members of the public and it is rare that ID clients get charged with such behaviour, particularly if such behaviour occurs in residential care (Lyll, Holland, & Collins, 1995). As a result of the complex nature of the work and clients, and the importance of an effective therapeutic relationship as a basis for intervention and maintenance of treatment change, staff member attitude is a critical variable in effective work with this client group.

### 3. Communication

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#### **Definition:**

Communication refers to communication between all members of the intervention team. This would include all services that have an influence in risk of re-offending (including guardian, psychologist, corrective services and police). Communication includes use of weekly team meetings, progress notes, hand-over time / checklists, open 360 communication between staff and management and the timeliness of communication between the various parties. Communication also includes the availability of relevant documents (such as IPs and Behaviour Support Plans). A review of a client's local file will be a good indicator of how effective communication is within the service.

#### **Useful Questions:**

- What is the communication like in the team?
- Do staff have team meetings?
- Is a staff communication book in place?
- Is there sufficient time for transition meetings in the house?
- Do people complain about being kept in the dark or never knowing what's going on?
- Do staff and management talk openly?
- What is the relationship like between management and clinical services?
- Is the service open with internal communications to outside bodies?

#### **Scoring Key:**

##### Risk Rating:

A 'yes' should be reported if there is a lack of formal communication channels (such as team meetings, handover periods, use of progress notes ) or there is poor communication between management and staff (slow flow of incident reports or slow implementation of recommendations provided to management). Evidence of this would include a number of complaints about communication.

A 'maybe' should be provided if formal structures are in place but not utilised well or there is regular misinformation or significant contradictions in reports. A 'maybe' would also be appropriate where most formal communication structures are in place.

A 'no' should be provided if communication structures are in place and communication seems to flow from management to staff easily.

##### Protective Rating:

A 'yes' is warranted if a service / staff are open about discussing problems. Involvement of multiple levels of staff in meetings highlights trust in staff and effective communication. Independent communication from the service to support services (such as clinical support) would also be considered protective. Staff would also be expected to be open to feedback and alternative views to aid development of the service.

A 'maybe' should be scored if a service makes added attempts to improve communication in some areas but not others or the staff are very open to feedback and have shown implementation of feedback.

A 'no' would be appropriate where there are no additional methods / processes / behaviours that reflect a focus on effective and timely communication.

**Rationale:**

Effective communication amongst the supervisory team (e.g., care or support workers, clinicians, probation officers) is essential for effective risk management. Anyone who has worked in residential care with ID clientele knows that there are times when information, sometimes critical information, is not passed along to subsequent shifts and the lack of information can cause client management problems. Often such gaps in communication is due to lack of basic training about ID clients, such as the importance of consistency in terms of responses to client behaviours, understanding background factors and triggers for challenging behaviours, or relevant environmental cues. If a staff member does not know what to communicate it is difficult to communicate effectively! The importance of structured team meetings to review communication strategies and the client's progress and support plan is critical to effective client management (McVilly, 2002).

## 4. Client-Specific Knowledge

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### **Definition:**

This refers to staff knowledge of the client's offence cycle (triggers to offending, consequences, factors in offending that it more likely the client will again re-offend), their plans and routine in general.

### **Useful Questions:**

- Do staff know the client's background? What percentage?
- Do staff know the behaviour support plan without looking at it? What percentage of staff?
- Would staff be able to identify the client's formulation (historical factors, triggers, setting events, behaviours, consequences, cognitive distortions)?
- Do staff seem to have intuition about the client's behaviour that allows them to act in situations to prevent incidents?

### **Scoring Key:**

#### Risk Rating:

A 'yes' would be scored if staff are generally unable to discuss the key principles of the behaviour support plan without looking at it and are not able to describe the clinical formulation. There would also be evidence that staff are unable to predict situations where challenging behaviour would occur or what they would need to do to prevent incidents.

A 'maybe' should be given if there is evidence that some staff have poor knowledge or that staff in general know the behaviour support plan in general terms but not in detail or do not understand the client's background. Alternatively there is disagreement within the service about important client information.

A 'no' should be given when staff generally know the behaviour support plan and the client's history (as it relates to their formulation).

#### Protective Rating:

A 'yes' would be given if staff not only know the behaviour support plan, but play a role in up-dating it. Staff also appear to be hyper-sensitive to the client's emotional state and can predict behaviours just by observing the client's behaviour and facial expressions. Staff would also be able to discuss the client's offence cycle at length and there are likely to be staff who have a very good understanding of the client's psychosocial history.

A 'maybe' would be given if some of the above factors are present, or it exists in a few keys staff or in the key worker.

A 'no' would be given if staff appear not to have knowledge beyond that which has been written down for them.

### **Rationale:**

It is crucial that support workers and other staff members working with ID clients are aware of the client's behavioural patterns, particularly in terms of violent or sexually violent challenging or offensive behaviour. These sorts of behaviours occur in

predictable patterns variously called offence patterns, behavioural progressions, relapse cycles, etc, all of which describe the same thing: a pattern of behaviour, thoughts and feelings that individuals progress through, with some variability over time, when acting out violently. Staff members need understand these patterns and associated triggers to help the client avoid engaging in new violent acts. This includes understanding the client's manipulative strategies in setting up situations to offend such as gaining access to potential victims. Support workers are well-placed for developing such knowledge and communicating it to others. However, it is important to remember that staff members are also people who form supportive relationships with their clients and may underestimate risk over time.

## 5. Situational Consistency

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### **Definition:**

Situational consistency refers to the extent to which the accommodation setting fits the client's needs and whether there have been shifts between different models of service. This item encompasses changes in accommodation, changes in house mates and changes in services.

### **Useful Questions:**

- Have there been any significant events in the client's environment in the last assessment period?
- What impact has the accommodation setting had on the client's behaviour?
- Who has come and gone in the living situation?
- When was the last time the client's environment changed significantly?
- Has the client had a recent move but is still talking about it, or reacting in a way that may suggest they are not comfortable with it yet?

### **Scoring Key:**

#### Risk Rating:

A 'yes' should be given if the client has moved accommodation in the past three months or if other clients have moved into their accommodation in that time period. A 'yes' may also be warranted if the client moves to another location on the same site with different staff and clients, there has been a drastic change to the environment itself or there is a change in a regular (e.g. five times a week) service. An imminent move in the next three months that the client is aware of is also warranted a 'yes'.

A 'maybe' should be given if a move occurred 3-12 months ago or is about to occur in the next 3-12 months that the client is aware of.

A 'no' should be scored if there has been no change in accommodation or service in the past year.

#### Protective Rating:

A 'yes' should be provided if there has been clear routine and structure during the assessment period.

A 'maybe' should be given if the accommodation / service or day activity has been consistent for some time but routine is not clear or there is only routine some of the time. The client may also continue to refer to the previous placement or others in the service might not be well settled even if the environment for client in question appears stable and routine in place.

A 'no' should be given if there have been moves in accommodation within the assessment period or no routine is in place.

### **Rationale:**

This item assumes that the current setting that the client is living in is suitable to meeting his/her needs. If this is not the case, then this item may be moot as a risk management item as an unsuitable environment is a risk-increasing factor for the client (e.g., for violent behaviour, for mental health deterioration). If the current living

environment is unsuitable for the client, this is probably best addressed as a “change in victim access or means” under item 7, but given that it is a prerequisite to the importance of situational consistency is it raised here first. If the current living environment is suitable, it is arguable that individuals with intellectual disabilities are more dependent on a consistent living situation than non-ID clients. Also, the greater the level of ID, the more important this issue becomes to the client and his/her management.



## 6. Changes in Social Relationships

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### **Definition:**

This refers to the extent people approach and move away from the client. This includes intimate, social and professional relationships. Emphasis should be placed on those relationships the client is known to place most investment in.

### **Useful Questions:**

- Has anyone moved away from or gotten closer to the client?
- Has anyone been impressed by or gotten angry / frustrated with them?
- Has anyone's situation close to the client significantly changed that is likely to have impacted on how they treat the client?
- Have they developed any new social relationships?

### **Scoring Key:**

#### Risk Rating:

A 'yes' should be awarded if relationships considered important by the client have broke down or exited. This may include the termination of an intimate relationship or the moving away of his parents. Removal of a child by DoCS would also warrant a 'yes' on this item. Note, access to anti-social peers does not by itself increase risk on this item.

A 'maybe' should be awarded if there have been changes in social relationships that are important to the client. Alternatively, it may be just that the relationship has changed (e.g. the mother re-marries) or the person has moved a little bit further away, making access slightly more difficult.

A 'no' should be awarded if there has been no significant change in social relationships.

#### Protective Rating:

A 'yes' should be awarded if supportive relationships improve. This might include the client getting a girlfriend, parents moving closer or an improvement or significant increase in supportive social relationships.

A 'maybe' should be given if the client appears to be having more visitors or is more social. Alternatively, there may be more contact with close relations, whom there may also be a history of conflict with.

A 'no' should be given where there is no improvement in the client's social circle.

### **Rationale:**

Relationship conflict has been identified in a number of meta-analyses as being a strong predictor of general re-offending (Gendreau et al., 1996). Relationship problems including an inability to understand normal sexual relationships, a lack of relationship skills (in intimate and non-intimate relationships), difficulty mixing with the opposite sex and poor peer relations have been noted as typical characteristics of ID sex offenders (Lindsay, 2002). These same difficulties may well be equally profound in ID clients who exhibit other sorts of challenging behaviours, including physical violence. This is not to discount that a strong relationship with some peer groups,

(namely anti-social) is well known to promote offending. In addition, the risk literature widely acknowledges the inability to form lasting intimate relationships or maintain non-abusive relationships as increasing risk for sexual (e.g., Boer, et al., 1997; Hanson & Thornton, 1999, 2003), physical (Webster, et al., 1997), or spousal violence (Kropp, Hart, Webster, & Eaves, 1995). Perhaps less problematic in terms of violence likelihood, but ID clients often profess good interpersonal relationships or skills, only to show minimal social interactions, estrangement from family, and negative peer relations.

## 7. Changes in Access to Victims or Means

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### **Definition:**

This refers to changes in the physical environment which allows for access to victims or means to engage in offending behaviour. Unlike the offence management item in the *client items*, this item explores the extent to which the environment facilitates the client to engage in their offence cycle. Things to consider in this domain include access to weapons, implements used to break and enter, access to areas that prevent supervision or access to items that allow for engagement with the offence cycle (e.g. access to child pornography).

### **Useful Questions:**

- Has the environment changed at all in the last month (at home or in the community where the client frequents)?
- Does the environment contain possible means to offend?
- Does the regular environment provide access to likely victims?
- Has any change made it easier or harder for the client to get access to their victim group or means to commit their offence type/s?
- Has the triggers in the environment to offend increased or decreased in the period of assessment?

### **Scoring Key:**

#### Risk Rating:

A 'yes' should be given when there is evidence that one of the highly frequented environments (home, day activity) allows for access to the victim group and the means to carry out the offence. For an arsonist, this would mean the environment provides easy access to fuel and ignition sources or for someone who thieves, access to unattended belongings. It may also be that there are clear triggers in the environment.

A 'maybe' should be given where one of the highly frequented environments allows for either access to the victim group or means to carry out the offence (but not both). Alternatively, the environments provide some very limited access to both.

A 'no' should be given when the environments do not provide access to means or victims.

#### Protective Rating:

A 'yes' should be given when the environment provides / facilitates a functional equivalent to the offending behaviour. E.g. the environment may promote the development of appropriate relationships (reducing risk of sexual recidivism) or support the expression of autonomy.

A 'maybe' should be given where the environment supports some degree of functional equivalent to the offending behaviour, but does not address all behaviours or only does it to a small degree.

A 'no' should be reported where the environment fails to provide a functional equivalent to the offending behaviour.

**Rationale:**

The risk of offensive or challenging behaviour of a violent or sexual variety increases when individuals have frequent or unsupervised access to potential victims and such changes in victim access may come about without active planning by the client. Changes in residential location may cause unintended changes in victim access or access to means to carry out an offence. For example for an individual with a sex offence, changes in the community or residence may result in providing the client with situations where they have more contact with their preferred victim group (e.g., children, vulnerable individuals, new staff members). Similarly, clients with violent behaviour histories may gain access to new potential victims as a result of changes in the community or the client's residence or gain access to weapons. Such changes could even be the addition of new staff members who may be sexually victimized by clients.

## 8. Changes in Access to Intoxicants

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### **Definition:**

Substance abuse includes the use of illicit drugs and the misuse of alcohol or prescription medication (in that it specifically increases risk of re-offending or there is a condition of release that the client cannot use alcohol). Unlike the 'Individual' item, this item explores the extent to which the environment supports access to such substances and facilitates use.

### **Useful Questions:**

- Does the client have a history of substance abuse?
- Are substances available in the environment (e.g. house mates)?
- Is the client more or less likely to be able to access substances due to changes in the client's environment?
- Has supervision changed around locations where substances can be accessed or consumed?

### **Scoring Key:**

Note: If the client has no history of substance abuse a 'no' should be reported for Risk and 'yes' for Protective.

#### Risk Rating:

A 'yes' should be scored if the client can easily access illicit substances or alcohol (unsupervised) in the environment. Factors to consider here include availability of funds to purchase goods, access to dealers and access to paraphernalia (needles etc). Access to prescription medication should also be considered here if the client has a history of abuses such substances.

A 'maybe' should be given if the client can access some aspects or limited quantities. A 'maybe' is also appropriate if it is unknown whether the client can access substances near by.

A 'no' should be given if it appears that the client would be unable to access illicit substances / alcohol / prescription medication or the client does not have an interest or history of substance abuse.

#### Protective Rating:

A 'yes' would be scored if interventions have been put in place to limit or eliminate use. This might include supporting an AoD program, urinary analysis and intentional efforts to prevent access. A 'yes' should also be scored if the client has no history or interest in substance use.

A 'maybe' would be scored if the environment provides low level strategies to manage substance use or there some barriers in the application of primary treatments (e.g. inconsistent availability of transport to get to AoD appointments) or poor application of behavioural interventions in the service.

A 'no' should be recorded if the environment does not facilitate treatment or management or barriers are extensive preventing them from being implemented.

**Rationale:**

Sudden changes in access to intoxicants may result in increases or decreases in client manageability. If a client exercises little control over substance abuse, they are then more susceptible to temptation in this regard. Decisions to not abuse drugs or other substances when faced with increased availability are all indicative of increased risk manageability. Ironically, incarceration often results in increased access to drugs compared to residential placements. Increased access, along with impaired risk coping ability, often results in ID clientele being highly susceptible to drug or alcohol use, especially in the presence of peer-pressure. A decrease in access to intoxicants is obviously related to increased manageability, regardless of the client's ability to control his/her substance abuse problems.

## 9. Access to Services

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### Definition

This item relates to the extent services support access to education, employment and leisure options. Access to can be seen to be supported through funding programs (such as funding AoD treatment) providing transport, the accommodation being proximal to necessary services or by helping the client create a daily routine that promotes the ability to attend activities.

### Useful Questions:

- What services does the client have access to or engage in?
- What extra services have been provided or lost?
- Are active efforts being made to seek new services?
- What environmental factors prevents access to services?

### Scoring Key:

#### Risk Rating:

A 'yes' should be scored if there are aspects about the service that serve as barriers to the provision of services. When the barrier is associated with the provision of treatment directly related to risk of re-offending, even a slight barrier should be considered a 'yes'.

A 'maybe' should be scored when the barriers to provision of service are minimal or the services themselves are not considered critical by the support staff or the client.

A 'no' should be recorded when there are no apparent barriers to the delivery of services associated with treatment or day activity.

#### Protective Rating:

A 'yes' should be scored if there are efforts made by the service to improve the number or availability of services to the client. This might include diligent casework or applications for further funding.

A 'maybe' should be scored where services appear to be directed towards finding more services but have not shown efficacy in obtaining them.

A 'no' should be scored when there is evidence to suggest the supporting organisation has not attempted to obtain additional services for the client.

### Rationale:

Many of the 'Client' items identify how important engagement with various formal services is in order to reduce risk of re-offending. This includes access to employment, education, treatment and leisure options. Therefore, geographical and financial barriers to accessing these play a critical role in considering risk to re-offending. Importantly, noting the external barriers also indicate how the system is responding to the clients needs and in fact whether risk is increasing due to client motivation / ability or forces outside their control.

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## **Appendix E**

Historical Clinical Risk – 20  
Intellectual Disability Supplement and Scoring Sheet

Draft date: August 2, 2008

## **Suggested Adaptations to the HCR-20 for Offenders with Intellectual Disabilities**

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### **Introduction**

Although there are a number of well-researched structured professional judgement (SPJ) instruments available for risk assessment purposes of violent offenders, none of these instruments provide explicit rules for the differential assessment of intellectually disabled (ID) offenders<sup>1</sup>. That is, there are no generally accepted guidelines for the application of the standard items in commonly used SPJ instruments to ID clients. As a result, researchers and clinicians who have found evidence that SPJ instruments are valid with ID offenders have adapted the items in these instruments in idiosyncratic ways and to date have not always been clear as to how this was done for the purposes of their research. For example, there is evidence that the Historical-Clinical-Risk – 20 (HCR-20; Webster, Douglas, Eaves, & Hart, 1995) is valid for violent offenders with ID (e.g., Lindsay, Hogue, Taylor, Steptoe, Mooney, O'Brien, Johnston, & Smith, 2008), but these authors do not explicitly explain how they adapted the HCR-20 in their study.

The present book chapter aims to provide some guidelines for the use of the HCR-20 with ID individuals who have been charged with non-sexual violent crimes. Furthermore, we would also propose that the principles and strategies elucidated in this chapter applied in risk assessment of offenders with ID could potentially be adapted to provide an assessment framework for people with ID who, though not ever (or at least not currently) involved in the criminal justice system, exhibit behaviours labelled as *challenging*. That is, “culturally abnormal behaviours of such an intensity, frequency or duration that the physical safety of the person or others is likely to be placed in serious jeopardy, or behaviour which is likely to seriously limit the use of, or result in

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<sup>6</sup> In this chapter ID individuals are seen as those individuals with a full-scale IQ of less than 75 and those individuals with a measured IQ of less than 80, but with significant adaptive behaviour deficits. An IQ cutoff of 75 takes into account the standard error of measurement of most of the commonly used intelligence tests. It is noted that Morrissey (2006) suggested that her PCL-R guidelines be applied to offenders with ID and that ID is to be inclusive of individuals with diagnosed intellectual disability (i.e., those with an IQ of less than 70) and also those individuals with borderline intellectual disability (i.e., those with an IQ of less than 80) who also have significant adaptive behaviour deficits.

the person being denied access to ordinary community facilities” (Emerson, 2001; p.3). While some ID individuals may commit violent behaviour, such behaviours are not always legally consequenced due to issues regarding mental capacity and intent – both of which are somewhat beyond the scope of this chapter – although both are addressed briefly under item “H1” of the HCR-20 (see below).

### **Application to ID offenders**

A recent set of studies by Morrissey and colleagues on the applicability of the Psychopathy Checklist – Revised (PCL-R; Hare, 2003) to ID offenders (e.g., Morrissey, Hogue, Mooney, Allen, Johnston, Hollin, Lindsay, & Taylor, 2007) was based on a set of guidelines produced by Morrissey in 2003 and revised in 2006 available from the author<sup>2</sup>. These guidelines formed the basis of a systematic study of a reasonably large sample of ID offenders in several settings in the UK. The present chapter attempts to emulate Morrissey’s guidelines for assessing ID offenders with the HCR-20. However, unlike Morrissey’s guidelines, the following guidelines do not have empirical support – these are suggested alterations only, and these suggestions require empirical validation before adoption as anything but research suggestions or clinical guidelines.

In keeping with Morrissey (2006), we are suggesting that the present guidelines be applied only to offenders with ID and that ID is to be inclusive of individuals with diagnosed intellectual disability (i.e., those with an IQ of less than 70) and also those individuals with borderline intellectual disability who also have significant adaptive behaviour deficits. Most of the general principles listed below are modelled on those elucidated by Morrissey in her 2006 edition of guidelines for assessing psychopathy in ID offenders.

### **General Principles**

- Although these guidelines change the content of the items to varying degrees, no change to the flavour or intent of the items of the original HCR-20 manual was intended.
- We acknowledge that the current research findings are more supportive of the validity of these instruments with males with mild ID. There is some evidence of validity of the HCR-20 with females with ID. Of course, the fact that Morrissey (2006) did not evaluate the PCL-R with female offenders with an ID limits the applicability of the HCR-20 with such female offenders.
- As with the diagnostic criteria for personality disorder for patients with ID in the Diagnostic Criteria – Learning Disability from the United Kingdom (DC-LD; Royal College of Psychiatrists, 2001), we suggest that the HCR-20 not be used with adults under 21 years. This is based on the delayed development of individuals with ID.
- The current version of the HCR-20 incorporates the PCL-R or PCL:SV. Thus, it is recommended that prior to giving an ID offender a personality disorder diagnosis, including that of psychopathy (arguably an extreme form of anti-social personality disorder); assessors need to consider other possible reasons for an offender’s presentation and behaviour. With ID individuals, this would include the influence of conditions such as autistic spectrum disorder, foetal alcohol spectrum disorder (FASD) amongst others. Of course, the presence of any particular disorder may not necessarily preclude a high

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<sup>2</sup> Please contact Catrin Morrissey at [catrin.morrissey@nottshc.nhs.uk](mailto:catrin.morrissey@nottshc.nhs.uk) for a copy of the PCL-R and PCL:SV ID guidelines.

risk finding on any of these instruments, but certain items may reflect one syndrome more so than another and therefore needs to be considered carefully. For example, impulsivity is a key characteristic of FASD as well as a risk issue for SPJ instruments and the PCL-R, and the role of impulsivity may be functionally quite different in such cases.

- We do not suggest the use of these guidelines with individuals with an IQ of less than 55, due to limitations in the assessment of psychopathy (i.e., poor inter-rater reliability and low numbers in Morrissey’s samples) with ID offenders.
- We endorse the general guidelines in the HCR-20 manual – the use of a good clinical interview, a thorough collateral file review (i.e., obtain all reports, such as care and support worker reports, school reports, and any relevant agency reports), as well as consultation with significant others whenever possible.

Finally, please note that the authors of the HCR-20 have not granted their official approval for these replacement items for use with ID offenders, nor are we suggesting that these items are any better or more useful than any the reader could derive themselves. However, there is a trade-off in not having some standard suggested items for ID usage. If all users of the HCR-20 were to derive their own item applications, then logically there would be greater variability and lack of precision in ID offender assessment – the very problem we are seeking to help reduce. The HCR-20 manual itself indicates that some flexibility is required in that “any overly complicated scheme would stand little chance of success” and therefore its “main value at this point may lie in the general principles it espouses rather than in its detail” (p. 5). However, we would strongly suggest that researching similar items for use with ID increases our ability to do good work for our ID clients and further our ability to increase effective reintegration and increase public safety.

### **HCR-20**

The HCR-20 (Webster, et al., 1995) has been the most widely used and well-researched SPJ with ID offenders. It is organised into three sections – historical (10 items), clinical (5 items) and risk (5 items), with each item rated on a three point scale from 0, no evidence of the variable, through 1, some evidence of the variable, to 2, clear evidence of the variable. The total score is the sum of the items although the authors do not generally recommend making decisions on the basis of the total score. Rather, they recommend that the items are structured in order to help the consideration of a comprehensive range of variables with a view to arriving at a final judgement. In this way, historical variables are combined with an assessment of current clinical status and consideration of future risk variables.

The HCR-20 has been the subject of a considerable quantity of research work in a range of settings for mainstream offenders in both correctional and mental health facilities. Since it has a range of clinical variables, it is unsurprising that much of the research has been carried out in forensic psychiatric settings or with mentally disordered offenders. A number of reports have now appeared reviewing the predictive accuracy and value of the HCR-20 in clinical practice and the prediction of re-offending with ID forensic clients.

Gray, Fitzgerald, Taylor, and Snowden (2007) reviewed the predictive accuracy of the HCR-20 in relation to the Violence Risk Appraisal Guide (VRAG; Quinsey, Harris, Rice, & Cormier, 2003) and Psychopathy Checklist – Screening Version (PCL-SV, Hart, Cox & Hare, 1995). They employed 118 men and 27 women with ID who had all been discharged from hospital following admission for conviction of a criminal offence or exhibiting behaviour that might have led to a conviction in different circumstances. This ID group were compared with a similar

control group of 843 men and 153 women who were mainstream, mentally disordered offenders without ID. Following up these individuals for a period of five years, they found that all three instruments predicted violent recidivism with large effect sizes. For violent offending, the HCR historical items predicted recidivism with an AUC of 0.81, the clinical items with an AUC of 0.71 and the risk management items with an AUC of 0.64. These predictive values were considerably better than those found for the non ID group which were 0.69, 0.55 and 0.63 respectively. Generally the HCR-20 had predictive values which were at least as good as those found for the VRAG and PCL-SV although there were no significant differences in the predictive accuracy between assessments.

In related research, Morrissey et al. (2005) investigated the relationship between the Psychopathy Checklist – Revised (Hare, 1991), the VRAG and the HCR-20, in addition to measures of personality disorder and emotional problems. This was an exploratory study primarily aimed at investigating the usability of the PCL-R but these authors reported convergence between the HCR-20 total score (with the PCL-R item removed), the three subscales of the HCR-20 and the PCL-R. This study was conducted on 212 offenders with ID drawn from a range of community, low secure, medium secure and maximum secure settings and Morrissey et al. (2007) went on to investigate the predictive value of these instruments in relation to institutional aggression. They found that the HCR-20 total score was significantly correlated with aggression in contrast to the PCL-R item totals which were not significantly correlated with any type of institutional aggression. The HCR-20 was also significantly more accurate in predicting violence than the PCL-R (AUC = 0.68-0.77). In a final report on this population of offenders with ID, Morrissey et al. (2007) showed that the HCR-20 total score significantly predicted positive treatment progress but that the PCL-R total demonstrated incremental predictive power over the HCR-20.

Lindsay et al (2008) employed the same population in a comparison of the predictive validity of a number of risk assessments including the HCR-20. Participants were followed up for a period of one year for the recording of violent and sexual incidents. They found that the VRAG and HCR-20 had similar predictive validity with AUCs of 0.71 and 0.72 respectively. Therefore there is some evidence from these two research groups (Gray et al. and Morrissey/Lindsay et al.) that the predictive accuracy of the HCR-20 is reasonable in offenders with ID.

### ***Adapted HCR-20 items – “qualifiers”***

Please note – the following suggestions are to be used in parallel sequence with, not in replacement of, the original HCR-20 item. In other words, read the manual item, then the ID item “qualifier” – the additional information that may influence your item rating. Then rate the item using the existing coding from the manual, unless new coding is indicated by research on the suggested parallel items. We have used the male pronoun throughout the following items; although we endorse the use of these items with female ID clients as well (there are simply more of the former).

## H1. Previous Violence

This item encapsulates one of the main differences between ID and non-ID clients, namely, that of intent. The HCR-20 manual defines violent behaviour as “actual, attempted, or threatened harm to a person or persons”.

This definition implies that there is intent on the part of the individual to cause harm. The issue of intent subsumes, to some degree, the issue of challenging behaviour versus offending behaviour. Doyle (2004), suggests that offending behaviour (albeit specifically focussing on sexual offending, the argument can be said to transfer to non-sexual behaviour) may be viewed as “challenging” when the perpetrator committing the behaviour is doing so without intent to harm another person. Challenging behaviour can still be criminal in that the victim of the unintentional behaviour may be injured or even killed, thus, making the behaviour illegal. Further, lack of intent does not reduce the person’s potential to cause harm in the future.

### *Scoring*

When this item is applied to ID clients, the assessor should examine intent of previous violence, the extent of previous violence, as well as frequency and severity of violence. As a matter of course, assessors need to examine the client’s file. Is there a history of violence in the file? Who are the targets of the violence? Is he the victim who fights back, or the perpetrator?

It is quite possible that ID clients may have a high baseline frequency of low-moderate severity violent actions (e.g., throwing plates at staff, biting other residents) as opposed to non-ID offenders (e.g., assaulting others with weapons). We have assumed a very simple operational definition of a violent act: any behaviour of a violent or threatening nature that has been recorded in any of the client’s files and a result constitutes a problematic issue for the client. The issue becomes more of a problem the more seriously and repetitively the behaviour occurs and how it is consequenced (e.g., perhaps less serious behaviour is initially ignored, but more serious behaviour could result in loss of privileges or relocation to a more secure environment). This sort of simple definition obviates whether the violent action is considered a “challenging” behaviour or one that is considered serious enough to be reported to the authorities. That is a separate decision – both sorts of behaviours are considered “previous violence”, albeit probably of differing degrees of severity and intent.

The above operational definition also allows for the same scoring as described in the HCR-20 manual but utilising a client’s file information.



## H2. Young Age at First Violent Incident

The authors of the HCR-20 note that their prescribed age divisions are arbitrary. With regards to ID clients, it could be argued that age divisions may be different to non-ID clients depending on level of ID or adaptive behaviour deficits. For example, due to developmental differences, ID clients may have lower mental ages than their non-ID peers of similar age.

In addition, violent behaviour potentially emerges earlier in clients with ID compared to non-ID clients due to, for example, deficits in impulse control or problem solving. It is therefore likely, that a greater proportion of ID clients fall in the “under 20 years at first known violent act”, in which case recommended HCR-20 coding categories may not allow for meaningful differentiation between risk levels. This is an empirical issue to be resolved.

### *Scoring*

Scoring as it applies in the HCR-20 manual should be retained. If the assessor has serious concerns about the mental age of the client (and is of clinical opinion that

### H3. Relationship Instability

The HCR-20 manual confines this item to romantic and intimate relationships and explicitly excludes relationships with friends and family. In a study of a community forensic ID service, Lindsay and colleagues (2004) reported that only around 2% of male ID offenders had been in a stable intimate relationship.

If the item is based on the importance of stable social support, the ability of an individual to take advantage of such support, and the protective effect of stable social support against further violence, then this item needs to be expanded for ID application. For individuals with ID, it is appropriate to consider their general attachment ability and style with individuals in their life irrespective of whether or not these relationships are romantic. In this way, prior relationships with peers, siblings and caseworkers are all likely to be important in considering this item.

For ID clients who have not had the opportunity (or do not have the skill or functioning level) to develop any sort of intimate relationship, we should look at their ability to initiate/maintain any sort of close relationship, (friendships, family, carers, support workers, house mates). We should contrast appropriate relationship-seeking with attempts to develop inappropriate relationships.

The basic point here is that stable, supportive social relationships mitigate violence by showing that the person can maintain a stable relationship (thereby suggesting the importance of reasonable interpersonal skills and the converse – violent interactions reduce the likelihood of support people remaining supportive).

If the person engages in stable, but inappropriate relationships (e.g., is violent in the context of friendships or intimate relationships) clearly then stable social relationships may be indicative of increased risk.

#### *Scoring*

When scoring this item, a person who is able to maintain stable and positive relationships but has had limited opportunity to develop intimate relationships should score a 0. A score of 1 would be appropriate where the client shows some difficulty maintaining their relationships (e.g. reports the client is difficult to get along with) but have not lost supports due to behaviour or personality or they have had some opportunity but failed to engage in intimate relationships. A score of 2 should be assigned when the person has a history of difficulty in maintaining supports or where the person has not had their autonomy limited and by definition should have been able to develop intimate relationships but appears to not have been able to do this.

## H4. Employment Problems

Lindsay and Taylor (2008) opined that most individuals with ID have the opportunity to engage in supported activities through ID services such as attendance at voluntary or paid employment placements, attendance at special needs college courses, attendance at social work resource centres, day programmes, and so on. The ID individual's ability to engage with these occupation centres should be reviewed in a similar light to open employment for mainstream offenders. Therefore, the person's record of ability to engage with occupation, education and recreation services throughout their adult life is relevant to this item and should be considered in the scoring.

### *Scoring*

Employment problems should be extended to meet the broadened definition of employment. Regular lateness or failure to attend (of course differentiating such difficulties due to transport or staffing issues) should score a 1 and refusing to attend or being dismissed from programmes due to behaviour or attitude would count as a 2 for this item.

## H5. Substance Use Problems

The HCR-20 manual includes misuse of prescription drugs as substance abuse. The ability to misuse drugs implies the ability to access drugs and/or self-administer medication, activities that ID clients may not have the opportunity to do in many situations. Also, inappropriate administration of medication by staff or family would not count. And, if given the opportunity to access medication, sometimes the misuse would be unintentional for ID clients.

It is worth noting that studies on offenders with ID which include one significant item on alcohol abuse have consistently produced significant predictive results for recidivism (e.g., Lindsay & Taylor, 2008).

### *Scoring*

If the drug or alcohol usage is clearly intentional and related to offending behaviour, it seems appropriate to consider this item in the same way as one would for mainstream offenders.

## H6. Major Mental Illness

The diagnosis of mental illness with intellectually disabled clients is problematic. White, Chant, Edwards, Townsend, and Waghorn (2005) found evidence of a high level of dual diagnoses with ID clients in a large Australian sample. In fact, 8% of the ID sample had been diagnosed as depressed and another 14% with an anxiety disorder. In 2004, Kerker, Owens, Zigler, and Horwitz found that some mental illnesses were more prevalent in the ID than in the non-ID population. These authors reflected on the problems in making accurate diagnoses with ID patients in their excellent article.

### *Scoring*

The HCR-20 manual identifies that a person with an intellectual disability would score a 2 automatically. However for the sake of manageability it is also critical that the assessor identify histories of other major mental illness as defined in the HCR-20 manual. A client with an IQ in the borderline range would also score a 1.

## H7. Psychopathy

This item is valid for an intellectually disabled population (e.g., Gray, et al., 2007; Gray et al., 2003; Lindsay et al., 2006; Morrissey, et al., 2007). The reader is referred to Morrissey's ID guidelines (2006) for practical direction. Given Gray's research using the PCL-SV, it may be the case that the PCL-SV is generally used in preference to the full PCL-R, but if psychopathy is a possible issue (i.e., a diagnosis thereof is important to the case or to the management of the case), then it is probably better practice to administer the full test (using the Morrissey items). Any user of the PCL-R is cautioned to ensure that they have met at least the minimum training standards for the use of that instrument and are aware of local validation samples (if any) for the use of the test in their jurisdiction. The PCL-R is not a SPJ instrument in the pure sense – the scores are validated for use within certain populations and therefore it cannot be assumed that the test is valid in a new setting or with an unusual population of clients.

### *Scoring*

No additional scoring criteria.

## H8. Early Maladjustment

Maladjustment during childhood may disrupt appropriate socialization. With intellectually disabled individuals, disruptions with appropriate bonding may occur to factors outside the child's control such as a services inability to provide adequate support so the person gets "shuffled" around. This sort of socialization disruption would be unusual for non-intellectually disabled children.

In addition, children with an intellectual disability would appear to be at greater risk of victimisation because of their vulnerability due greater levels of family psychopathology, psycho-social deprivation, behavioural disturbances at school, psychiatric illness, social naivety, and poor ability to form normal sexual and personal relationships, (e.g., Winter, Holland, & Collins, 1997).

### *Scoring*

In scoring this item, the same scoring criteria as the original HCR-20 criteria should apply. However, the assessor should be careful to ascertain the reason for maladjustment.

As out-of-home placements are not uncommon for intellectually disabled clients, a high rate of these placements does not always entail maladjustment. Reasons behind the placements should be considered: Maladjustment should only be considered where the out-of-home placement was for reasons of behaviour (parent or client) as opposed to medical requirement.

## H9. Personality Disorder

It can be difficult to distinguish characteristics related to intellectual disability from those related to personality disorder, including impulsivity, emotional dysregulation, attachment difficulties, self-injury, attention-seeking behaviour, amongst other characteristics. In addition to behavioural disorders, communication problems and physical or sensory disorders often associated with ID adversely affect the accuracy of diagnosis of personality disorder in the ID person (Khan, Cowan, & Roy, 1997). Khan and colleagues noted that the issue of accuracy is further complicated by their finding that personality disorders are sometimes diagnosed as behavioural disorders in the severe ID person as personality diagnosis requires subjective reports of thoughts and feelings which may be difficult to elicit (or identify to the neophyte clinician) in the severely ID. The opposite was found with those with a mild or moderate level of ID, that is, particular patterns of behaviour were more often diagnosed as a personality disorder than a behavioural disorder in higher functioning clients.

It is well known that the development of personality characteristics takes longer in people with ID than in non-ID people (Royal College of Psychiatrists, 2001).

The difficulty in accurate diagnosis is exemplified by a review conducted by Alexander and Cooray (2003) in which they found a range from less than 1% to over 90% in community samples and a range of 22% to 92% in hospital settings. Clearly such variability is too large to be explained by real differences between such settings. Alexander and Cooray (2003) concluded that specific criteria be developed for the diagnosis of personality disorders in ID for various developmental levels, and suggested that objective proxy measures such as behavioural observations be used particularly for those with severe disabilities.

Further, the criteria for some of the personality disorders (e.g., dissociative and paranoid) seem to assume a level of cognitive ability which may be absent in those with an ID (Goldberg, Gitta, & Puddephatt, 1995).

### *Scoring*

When scoring this item, a 1 should be provided when the person is under the age of 25 (to account for the longer development of personality) unless it is very evident that the cognitions underlying the personality disorder are present and very stable. A 1 should be scored where there is no diagnosis but file information has noted cognitive traits of a Personality Disorder, for example severe and persistent fears of abandonment.



## H10. Prior Supervision Failure

With ID clients, this item should include any sort of imposed supervision, not necessarily just those imposed for criminal activity. This would then include supervision or imposed restrictions due to challenging or offensive behaviour.

The scoring of this item should vary with the client's level of understanding of his restrictions, including not just what the restrictions are, but why the restrictions were imposed. With non-ID clients, supervision failure may be more often for nefarious reasons, whereas with ID clients, the supervision failure may be because the person did not understand or know what or why there was a restriction.

The HCR-20 manual says to score '0' if the person has never had a period of institutional or community supervision – legally imposed restrictions. Many ID clients with violent behaviour do not end up having contact with the criminal justice system due to tolerance of violence by staff in support services (Lyll, Holland & Collins, 1995). This means many people with an ID would not have had legally-imposed restrictions if their violent behaviour was classified as challenging as opposed to being an offence. Furthermore many courts might redirect a client to treatment services rather than impose a court order. However, if restrictions were placed on a person to restrict his opportunity to commit violent behaviour and he disregarded the restriction (regardless of understanding) we would suggest scoring a 1 and more serious failures (e.g., new violence or other illegal activity) we would suggest scoring a 2.

We emphasize that the supervision issues in this item have to do with issues related to violent behaviour. We would not include non-compliance with direction like absconding from a house to buy cigarettes, or simply not following the direction of staff say to turn off a TV as worth of scoring. A qualifier to this would be if the person has a history of committing violent acts when unsupervised when they went to obtain their cigarettes. In this situation a 2 would be warranted.

Finally, in almost all jurisdictions, there are community service orders and treatment plans meted out to ID clients. Most of the items in such orders have to do with essentially house-keeping and time structuring for the client. There may be explicit issues related to mitigating risk for violence in such orders and this may be consequenced in house by loss of restrictions. This should be recognised as a supervision failure (e.g., 1 point), or some assessors might forget or ignore these types of supervision.

## *Scoring*

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## C1. Lack of Insight

Intellectually disabled clients vary dramatically in their ability to formulate insight and also the way that insight is revealed is sometimes even more subtle than in persons without an intellectual disability. Of course, lack of insight, if present does not obviate it as a risk factor, nor is it necessarily less of a risk factor where it is due to cognitive deficits.

### *Scoring*

We caution that it is very inappropriate to simply score a 1 or 2 just because of the nature of a client's ID as the client's insight may be undetectable without experience and time. Therefore, it is important to ascertain the client's insight as it relates specifically to their offences and not simply assume this due to their cognitive ability.

## C2. Negative Attitude

Clients with an intellectual disability may be more susceptible to holding or at least appearing to hold negative attitudes due to their desire for inclusion with other ID and non-ID peers. They may not really support or even understand the negative attitudes they appear to display. There is no reason to believe that this would reduce the potency of this risk factor if that were the case. However, there is also evidence to suggest that people with an intellectual disability have higher levels of suggestibility. This requires that an assessor use open ended questions when interviewing a client to obtain attitudes related to offending.

### *Scoring*

No additional scoring criteria apply.

### C3. Active Symptoms of Major Mental Disorder

This item applies fully to the ID client.

#### *Scoring*

The assessor is reminded of the cautions of the *H6. Major Mental Illness* -item in this guide: Symptoms of mental illness must be clearly due to a mental illness as described in *H6* and not to the intellectual disability (or any other mental health problem such as acquired brain injury as per any diagnostic scheme).

## C4. Impulsivity

Parry and Lindsay (2003) found that ID non-sexual violent offenders were more impulsive than ID sexual offenders. But it is not necessarily the case that ID clients are always impulsive. In fact, a perusal of the relevant literature suggests that this is a common but perhaps unfounded assumption warranting more investigation.

Regardless of the dynamics of the issue and whether impulsivity is actually more problematic in the ID client, this factor is still relevant in terms of its role in affecting a client's risk of violent offending.

In the HCR-20, the issue seems to be strongly related to emotional lability, whereas with ID clients this item could also relate to motor impulsivity and emotional lability may or not be an issue.

### *Scoring*

Regardless of the type of impulsivity, this item needs particular knowledge regarding how impulsivity manifests itself with ID clients and how the client's level and type of impulsivity impacts on their risk for violence. Therefore a client that has a high level of motor impulsivity might still only score a 1 if it appears this impulsivity has little relationship with their aggression.

## C5. Unresponsiveness to Treatment

The HCR-20 manual seems more focused on non-compliance with any sort of medical, clinical, or vocational intervention, i.e., intentional unresponsiveness. For some ID clients, this could be an issue, but we assume that a client facility for intentional non-compliance will vary with level of ID.

We also note that the range of interventions will be generally much broader for ID clients – particularly those related to their disabilities (e.g., skill building, or management of other challenging behaviours).

### *Scoring*

For ID clients we are unsure if intentionality necessarily affects risk (culpability surely, not necessarily risk), nonetheless, we would suggest, in general, that a 2 be scored when it is clear that there is intentional non-compliance and a 1 when it is unclear that the non-compliance is intentional. However, we would add the rider clause that if the non-compliance is clearly related to risk that a 2 be scored as per the manual, regardless of intentionality.

Finally, the scoring of the item should also vary if the assessor is unclear whether the person is unresponsive to treatment or whether the treatment was appropriate for the level of cognitive ability of the person or appropriately implemented. If there is doubt, we recommend scoring a 1 and describing the scoring issue as failure in a cognitive therapy does not mean other interventions like medication or environmental management would not be unsuccessful.

## R1. Plans Lack Feasibility

This item is very similar to that of the PCL-R Item 13 or PCL-SV Item 9. As Morrissey (2006) suggested, this item should take into account what is appropriate for persons according to their “level of ability and adaptive skills, and in terms of the person’s comprehension of what is ... (reasonably) attainable for them” (p.8).

We would add that the HCR-20 and PCL items seem to be related mainly to post-release plans and this ignores the fact that many ID clients are not in custody and many of those in the community are actually in long term placement.

Further, it may also be more difficult for people to judge what is realistic for an ID client, in that people often underestimate their abilities or ability to learn.

### *Scoring*

Assessors should not only focus on feasibility, but ability and willingness. If a client is willing and able to discuss and engage in planning goals; and if they are able to formulate good plans or adjust plans to make them realistic with a bit of support, then a 0 is warranted.

Higher scores should be given when the goals are unrealistic, unattainable and this lack of realism and ability to either achieve the goal or realize the inherent infeasibility of the goal actually contributes to the risk the client presents to the community.



## R2. Exposure to Destabilizers

In principle, this item applies fully to ID clients. The nature of the destabilizers may be a little different (in general, less exposure to antisocial peers, less exposure to drugs and alcohol), but also the nature of the professional supervision will be different. For example, instead of weekly or intermittent appointments with parole officers for the non-ID client, ID clients could be living in a residential care setting or have specially-trained case workers assigned to them on an individual or small group basis. Hopefully the specialized training of ID care or support workers would result in many ID clients scoring lower on this item than non-ID clients.

### *Scoring*

While a person with an ID might have less exposure to factors that are significantly criminogenic (thus warranting a 2) a person with an ID might have greater exposure to additional stressors (see R5) that may be destabilizing and require scoring a 1 on this item.

### R3. Lack of Personal Support

This item has some unique ID considerations. For example, depending on level of ID, a person could be living in a residential care setting, have 24 hour active case management, and would automatically score a 0 with the current HCR-20 scoring guidelines. However, we would suggest that the quality of the staff support and care be factored in to reach a score. Inattentive staff, or staff with poor attitudes, poorly-integrated services, and inconsistent, absentee or neglectful parents all may reflect a lack of personal support relative to that needed to manage the level of risk present.

We doubt that many ID clients would decide to not accept support from family, but this is possible. Further, we would contend that more ID clients would have immediate family support (as well as support for the supportive family) for years by comparison to non-ID clients.

#### *Scoring*

When scoring this item, a 0 should reflect a level and quality of support required to address the behaviour. A 1 would be where the level of support is sufficient but the lack of quality is likely to lead to violent behaviour. A 2 would be given where necessary supports are not available or where supports appear to promote violent behaviour.

## R4. Noncompliance with Remediation Attempts

In most circumstances, remediation attempts in disability services refer to behaviour intervention plans implemented by support services and the administration of medication. It is important that when considering compliance with such plans, it is compliance with those aspects related to reducing violent behaviour.

Although this item is concerned with the individuals predicted level of future non compliance, this item assumes that there are plans for or have been previous attempts at remediation on which to assess the future. Services supporting those with ID will often not have any remediation plans in place or plans for future ones. Reasons for this include lack of recognition that the client actually requires this or the fact the ID services often operate in crisis mode and future planning is not always a high priority or reality.

In terms of intent when scoring this item for ID comments relating to intent in precious items (H1, H5 and C5) should be taken into consideration. Obviously where the non compliance is clearly intentional it should be scored in the same way as for mainstream offenders. The outcome/result of the non-compliance whether it is assumed the intent is or will be intentional should be the focus, i.e. that it will increase risk. The level of ID will also impact on the on the level of intentional non-compliance.

This item specifically mentions medication as a remediation. Individuals with an ID are more likely to be on medication than the mainstream population.

### *Scoring*

The type of remediation or intervention and its relationship to offending should be taken into consideration in terms of intent when scoring this item. It is suggested that the probability of non-compliance to planned future interventions not directly related to offending behaviour be scored as a 1 (e.g. daily routine) and those directly related to offending (e.g. Line of sight supervision) a 2.

In scoring this item it is suggested that if the medication is not related to offending and predicted non-compliance may be for a valid reason, (eg not wanting to take the medication due to side effects), then a 0 is given. If the medication is not related to offending & the reason for non-compliance relates to attitudes or personality factors that are consistent with re-offending (e.g. being disagreeable) a 1 is scored. If the medication is being refused is directly related to offending then a score of 2 is given regardless of the reason for refusal.

## R5. Stress

Individuals with ID are likely to be vulnerable to similar types of stressors as the mainstream population. The three general areas family, peer and employment (day occupation) would be valid for the ID population.

Individuals with ID are likely to have additional stressors due to their cognitive and functional (including communication) deficits. They have an increased need to rely on others and are often living in congregate care not necessarily with others who are compatible. In addition they often have less resources, capacity and opportunity to escape from stressors and are often forced to remain in highly stress provoking situations. Coupled with their cognitive and functional deficits (e.g. decreased coping, problem solving and communication skills) it would be expected that ID individuals would potentially score higher on this item than mainstream individuals.

Given probable communication deficits the assessor should take into account the possibility that the individual with ID may be display offence unrelated challenging behaviours as a way of expressing their level of stress.

Individuals with an ID because of their vulnerability are often victims of violence themselves so Felson's (1992) point, that persons who were under stress were more likely to be violent than those who were not under stress only if they also had been victims of violence is particularly relevant.

### *Scoring*

The definition of 'serious stressors' is open to a broader interpretation for this group given the points above. In scoring though, the item does take into consideration the individual's ability to cope with them.

### **Discussion**

There are several studies indicating that the HCR-20 has predictive validity for non-sexually violent ID offenders (e.g., Morissey, et al., 2007). However, the elaboration of test items or the validation of such tests with ID offenders does not help in all cases because many ID individuals are not charged for their offending (or challenging) behaviour and hence these instruments (indeed all commonly used risk assessment instruments, including all the actuarial tests) would be inapplicable. For the assessment of risk for ID individuals with actual charges or convictions for non-sexual violent offences we suggest that the literature supports the use of the HCR-20 and a relevant actuarial instrument for the risk assessment of non-sexually violent ID individuals.

In order to use the HCR-20 more appropriately with ID clients who either offend or show violent challenging behaviour, we have offered some suggestions to conceptualize or expand the current SPJ items within an ID context. We suggest that the convergence of the risk posed by the original and parallel sets of items will help to provide an overall picture of the level of risk posed by the individual in the context of the environmental variables that comprise the individual's current circumstances. It is our opinion that only by contextualizing the individual's risk within an ecological framework can an accurate portrayal of current dynamic risk (and hence the management of that risk) be construed.

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## HCR-20 CODING SHEET

### Assessment of

Name:	Age:	DOB:
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### Conducted by

Name:	Position:	Date of Assessment:
-------	-----------	---------------------

Specify Time Period for Evaluating **Recent Change**:

Psychosocial Adjustment	Presence (2,1,0)	Change (+,0,-)
1 Previous Violence		
2 Young Age at First Violent Incident		
3 Relationship Instability		
4 Employment Problems		
5 Substance Use Problems		
6 Major Mental Illness		
7 Psychopathy (PCL-R / SV Score: _____)		
8 Early Maladjustment		
9 Personality Disorder		
10 Past Supervision Failure		

Clinical	Presence (2,1,0)	Change (+,0,-)
11 Lacking Insight		
12 Negative attitudes		
13 Active Symptoms of Major Mental Illness		
14 Impulsivity		
15 Unresponsiveness to Treatment		

Risk Management	Presence (2,1,0)	Change (+,0,-)
16 Lacks Realistic Plans		
17 Exposure to Destabilisers		
18 Lack of Personal Support		
19 Non-compliance with Remediation Attempts		
20 Stress		

Other Considerations	Presence (2,1,0)	Change (+,0,-)

### TOTAL SCORE

	Summary Risk Rating		
	Low	Moderate	High
<b>Risk of Physical Violence:</b>	<input style="width: 50px; height: 20px;" type="text"/>	<input style="width: 50px; height: 20px;" type="text"/>	<input style="width: 50px; height: 20px;" type="text"/>





## **Appendix F**

### **Psychopathy Checklist Revised Item Scoring Sheet**

## THE HARE PSYCHOPATHY CHECKLIST- REVISED (PCL-R) CODING SHEET

<u>Assessment of</u>		
Name:	Age:	DOB:

		Total	Factor 1	Factor 2
1	Glibness/Superficial charm	<input type="text"/>	<input type="text"/>	
2	Grandiose sense of self worth	<input type="text"/>	<input type="text"/>	
3	Need for stimulation	<input type="text"/>		<input type="text"/>
4	Pathological lying	<input type="text"/>	<input type="text"/>	
5	Conning/Manipulative	<input type="text"/>	<input type="text"/>	
6	Lack of remorse or guilt	<input type="text"/>	<input type="text"/>	
7	Shallow affect	<input type="text"/>	<input type="text"/>	
8	Callous/lack of empathy	<input type="text"/>	<input type="text"/>	
9	Parasitic lifestyle	<input type="text"/>		<input type="text"/>
10	Poor behaviour controls	<input type="text"/>		<input type="text"/>
11	Promiscuous sexual behaviour	<input type="text"/>		<input type="text"/>
12	Early behavioural problems	<input type="text"/>		<input type="text"/>
13	Lack of realistic, long term goals	<input type="text"/>		<input type="text"/>
14	Impulsivity	<input type="text"/>		<input type="text"/>
15	Irresponsibility	<input type="text"/>		<input type="text"/>
16	Failure to accept responsibility of own actions	<input type="text"/>	<input type="text"/>	
17	Many short term marital relationships	<input type="text"/>		<input type="text"/>
18	Juvenile delinquency	<input type="text"/>		<input type="text"/>
19	Revocation of conditional release	<input type="text"/>		<input type="text"/>
20	Criminal versatility	<input type="text"/>		<input type="text"/>

<b>Raw Sum</b>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>Number of missing items</b>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>Adjusted Sum</b>	<input type="text"/>	<input type="text"/>	<input type="text"/>

<u>Conducted by</u>		
Name:	Position:	Date of Assessment:    /    /
Signature:		

## **Appendix G**

### Level of Service Inventory Revised Coding Sheet

# LSI-R: The Level of Service Inventory - Revised

by D. A. Andrews, Ph.D., and James L. Bonta, Ph.D.

Name: \_\_\_\_\_ Identifying Number: \_\_\_\_\_  
 Date of Birth: \_\_\_ / \_\_\_ / \_\_\_ Sex: M F Date: \_\_\_ / \_\_\_ / \_\_\_  
 Referral Source: \_\_\_\_\_ Reason for Referral: \_\_\_\_\_  
 Disposition: \_\_\_\_\_ Present Offenses: \_\_\_\_\_

The LSI-R is a quantitative survey of attributes of offenders and their situations relevant to the decisions regarding level of service. The LSI-R is composed of 54 items. Items are either in a "yes-no" format, or in a "0-3" rating format, based on the following scale:

- 3: A satisfactory situation with no need for improvement**
- 2: A relatively satisfactory situation, with some room for improvement evident**
- 1: A relatively unsatisfactory situation with a need for improvement**
- 0: A very unsatisfactory situation with a very clear and strong need for improvement**

Place an "X" over the appropriate response for each question, whether it be a simple "yes" or "no", or a rating number. The answers will transfer through to the scoring sheet beneath for quick tallying of the LSI-R score. Be sure to see the manual for guidelines on rating and scoring. For missing information, circle the question number.

## Criminal History

No	Yes	1.	Any prior adult convictions? Number: _____
No	Yes	2.	Two or more prior adult convictions?
No	Yes	3.	Three or more prior adult convictions?
No	Yes	4.	Three or more present offenses? Number: _____
No	Yes	5.	Arrested under age 16?
No	Yes	6.	Ever incarcerated upon conviction?
No	Yes	7.	Escape history from a correctional facility?
No	Yes	8.	Ever punished for institutional misconduct? Number: _____
No	Yes	9.	Charge laid or probation/parole suspended during prior community supervision?
No	Yes	10.	Official record of assault/violence?

## Education/Employment

When in labor market:

No	Yes	11.	Currently unemployed?
No	Yes	12.	Frequently unemployed?
No	Yes	13.	Never employed for a full year?
No	Yes	14.	Ever fired?

School or when in school:

No	Yes	15.	Less than regular grade 10?
No	Yes	16.	Less than regular grade 12?
No	Yes	17.	Suspended or expelled at least once?

For the next three questions, if the offender is a homemaker or pensioner, complete #18 only. If the offender is in school, working, or unemployed, complete #18, #19 and #20. If the offender is unemployed, rate 0.

3	2	1	0	18.	Participation/performance
3	2	1	0	19.	Peer interactions
3	2	1	0	20.	Authority interactions

## Financial

3	2	1	0	21.	Problems
No	Yes	22.	Reliance upon social assistance		



# LSI-R: The Level of Service Inventory - Revised

by D. A. Andrews, Ph.D., and James L. Bonta, Ph.D.

Remember, the rating scale is as follows:

- 3: A satisfactory situation with no need for improvement
- 2: A relatively satisfactory situation with some room for improvement evident
- 1: A relatively unsatisfactory situation with a need for improvement
- 0: A very unsatisfactory situation with a very clear and strong need for improvement

Question  
Numbers

## Family/Marital

Dissatisfaction with marital or equivalent situation	3	2	1	0	23.
Non-rewarding, parental	3	2	1	0	24.
Non-rewarding, other relatives	3	2	1	0	25.
Criminal-Family/Spouse	No	Yes			26.

## Accommodation

Unsatisfactory	3	2	1	0	27.
3 or more address changes last year	No	Yes			28.
High crime neighborhood	No	Yes			29.

## Leisure/Recreation

Absence of recent participation in an organized activity	No	Yes			30.
Could make better use of time	3	2	1	0	31.

## Companions

A social isolate	No	Yes			32.
Some criminal acquaintances	No	Yes			33.
Some criminal friends	No	Yes			34.
Few anti-criminal acquaintances	No	Yes			35.
Few anti-criminal friends	No	Yes			36.

## Alcohol/Drug Problem

Alcohol problem, ever	No	Yes			37.
Drug problem, ever	No	Yes			38.
Alcohol problem, currently	3	2	1	0	39.
Drug problem, currently	3	2	1	0	40.
Law violations	No	Yes			41.
Marital/Family	No	Yes			42.
School/Work	No	Yes			43.
Medical	No	Yes			44.
Other indicators	No	Yes			45.

## Emotional/Personal

Moderate interference	No	Yes			46.
Severe interference, active psychosis	No	Yes			47.
Mental health treatment, past	No	Yes			48.
Mental health treatment, present	No	Yes			49.
Psychological assessment indicated	No	Yes			50.

## Attitudes/Orientation

Supportive of crime	3	2	1	0	51.
Unfavorable toward convention	3	2	1	0	52.
Poor, toward sentence	No	Yes			53.
Poor, toward supervision	No	Yes			54.

## **Appendix H**

### Current Risk of Violence

## Current Risk of Violence – CuRV

### Administration

**The CuRV must be completed by an individual staff member or carer, not as part of a team discussion.**

### Appropriate populations

The CuRV is designed for use with adults aged 18 upward who fall in the mild to borderline range of intellectual disability and have a history of aggressive behaviour.

### Reporting staff member's knowledge of the individual

The tool can be used by staff working directly with individuals including support workers, keyworkers, nurses, clinical nurse specialists, speech and language therapists, psychologists, and other clinical staff. Staff members must be familiar with the individual and have known and worked regularly with them for at least **three months**. Specific training is not needed to complete the assessment but staff should have substantial direct experience of the person being rated and of working with other individuals with a mild – borderline intellectual disability.

### Completing the CuRV

Record the demographic information on the following page in the space provided. Then turn to page 3, read the first item and decide whether or not that statement describes your client's behaviour during the past month. Base your answer on how the client compares to other clients and adults with mild – borderline intellectual disability. Consider both your own observations and the reports of colleagues and informed others over the **past month**. Consider his/her general behaviour and interpersonal behaviour towards others. You are asked to respond to the question in blue. More detailed item descriptions are in black, and they are examples of possible behaviours to think about. The client you are rating does not have to have demonstrated this particular example behavior, but behaviours that you think are similar and related to this theme should be rated.

In the box provided next to the item, tick 'yes' if the behaviour described is applicable to your client over the past month and 'no' if not applicable. Repeat the procedure for all items in the CuRV. Please do not leave any items without a Yes or No response. Unless you are clear that you have evidence yourself, or reports from others, that the behaviour described has been present in the past month, you should select a No response. Space is provided on page 9 for additional comments.



## Demographic Information

<b>Client name</b>	
<b>Male or Female</b> (please circle)	
<b>Name of service/service setting</b>	
<b>Name and job title of person completing the risk assessment</b>	
<b>Date of rating</b>	

<b>1.General impulsivity</b>	
<p><b>In the past month, did the individual appear to react to situations without thinking?</b>  <i>The individual may have acted without planning or thinking about the consequences of their actions, acting on the spur of the moment.</i></p>	Yes
	No
<b>2.Anger</b>	
<p><b>In the past month, did the individual appear to be frustrated often or lose their temper easily?</b>  <i>The individual may have visibly lost their temper or seemed to become frustrated more easily than usual. They may have reported feeling offended or wronged, or appeared tense and agitated.</i></p>	Yes
	No
<b>3.Irrational beliefs</b>	
<p><b>In the past month, did the individual talk out loud about irrational thoughts or engage in unusual behaviours?</b>  <i>Individuals may have reported strange or peculiar experiences or talked out loud irrational thoughts about people or situations. They could have appeared confused or disorientated.</i></p>	Yes
	No
<b>4. Lack of insight</b>	
<p><b>In the past month, did the individual appear unaware of the consequences of their actions?</b>  <i>It might seem that the individual did not have a clear understanding of expectations, boundaries, and consequences of their behaviour. For example, they may not have insight into their own behavioural problems and did not recognise when they needed help.</i></p>	Yes
	No
<b>5.Lack of responsibility</b>	
<p><b>In the past month, did the individual show a lack of responsibility for their own behaviour?</b>  <i>The individual might have demonstrated a lack of responsibility for their own behaviour, or minimised the seriousness of their behaviour. They may have tried to blame other people for their problems or behaviour.</i></p>	Yes
	No

<b>6. Feeling aggrieved</b>	
<p><b>In the past month, did the individual talk or act as though they felt aggrieved or were resentful about something?</b>  <i>Individuals may have felt there was lack of equality or fairness in some aspect of their life. For example, the individual may have felt upset that they did not have the same amount of free time as others, or that other people were progressing through the system quicker than they were.</i></p>	Yes
	No
<b>7. Withdrawal</b>	
<p><b>In the past month, did the individual reduce their level of interaction with others?</b>  <i>The individual may have started to spend increasing amounts of time alone, which is not typical behaviour for them. Alternatively, there may have been subtle changes in engagement with professionals and ward staff. For example, the dialogue they engaged in with staff might not have been as deep/detailed as usual. They may have been attempting to sabotage relationships with staff in order to withdraw.</i></p>	Yes
	No
<b>8. Poor coping ability</b>	
<p><b>In the past month, has there been an obvious change in the client's coping ability?</b>  <i>The individual may have seemed unable to deal with internal or external demands recently (e.g. coping with other people, problem solving, an increase in responsibility or choices) and may have felt overwhelmed. The individual may have developed maladaptive coping strategies or tried to avoid situations rather than actively coping with them.</i></p>	Yes
	No
<b>9. Signs of dependence</b>	
<p><b>In the past month, did the individual appear to be more dependent on others?</b>  <i>Individuals may have seemed increasingly insecure and more dependent on others. For example, seeking help or assistance with things they can usually do on their own. There may have been an increase in reassurance seeking behaviours.</i></p>	Yes
	No
<b>10. Self esteem</b>	
<p><b>In the past month, did the individual seem to have low self esteem?</b>  <i>Individuals may have made negative evaluations about themselves and their abilities and generally felt bad about themselves. They may have exhibited low self esteem because they felt like they were not making progress, they believed people did not like them, or they were unsure of themselves.</i></p>	Yes
	No

<b>11.Low mood</b>	
<p><b>In the past month, has the individual's mood been low or fluctuating?</b>  <i>There may have been obvious changes or inappropriate displays of mood/emotion recently. The individual may have appeared sad, hopeless, they may not have been able to enjoy things they usually find pleasurable, or have little interest in activities or events. Physical signs include tiredness, loss of energy.</i></p>	Yes
	No
<b>12.Demand avoidance</b>	
<p><b>In the past month, did the individual feel under pressure or try to avoid demands?</b>  <i>The individual may have been attempting to avoid everyday demands (e.g. encouragement to comply with personal hygiene). They may have felt pressured to live up to others expectations (e.g. from external sources to move on when they are not ready).</i></p>	Yes
	No
<b>13.Physical aggression</b>	
<p><b>In the past month, has the individual been physically aggressive?</b>  <i>The individual may have been 'acting out' recently. Examples may include slamming doors, throwing furniture, causing damage to property or being physically aggressive toward other people (e.g. punching, kicking).</i></p>	Yes
	No
<b>14. Verbal aggression</b>	
<p><b>In the past month, has the individual has been aggressive verbally?</b>  <i>The client may have been bullying or provoking others. Examples may include shouting, making derogatory or inappropriate comments about people.</i></p>	Yes
	No
<b>15.Pro offending attitude</b>	
<p><b>In the past month, did the individual talk/act as though violence is acceptable?</b>  <i>The way the individual has been talking or behaving recently might suggest they think aggression is a good thing. For instance, they may have been boasting about times they have been violent or take pleasure from violence on TV/films. The client may think being aggressive leads to status and kudos.</i></p>	Yes
	No

<b>16. Lack of Compliance</b>	
<p><b>In the past month, did the individual appear to be non compliant or oppositional in some aspect of their life?</b>  <i>The individual may have been acting in a noncompliant, rebellious, stubborn or uncooperative manner. This could relate to any aspects of their life including supervision, management, treatment, medication and compliance with Mental Health Act (MHA) restrictions.</i></p>	Yes
	No
<b>17.Somatic concern</b>	
<p><b>In the past month, has there been an increase in complaints about physical health or attempts to seek medical attention?</b>  <i>The individual may have complained about their health frequently and made excessive requests to see the doctor or nurse. They may have pseudo seizures (i.e., non genuine) to access medical attention.</i></p>	Yes
	No
<b>18.Substance abuse problems</b>	
<p><b>In the past month, did the individual access or attempt to access drugs/alcohol?</b>  <i>There may have been an increase in the use or a misuse of alcohol, illicit drugs, or prescription medication. The individual may have made attempts to get intoxicants into the unit.</i></p>	Yes
	No
<b>19.Anti-social behaviour</b>	
<p><b>In the past month, has the individual been acting in an antisocial manner?</b>  <i>There might have been a change in attitude and/or behaviours that suggested a lack of consideration for others. The individual might have been more rowdy, noisy or threatening than usual. Other clients may have felt unsafe as a result of this individual's behaviour.</i></p>	Yes
	No
<b>20. Medical Complaints</b>	
<p><b>In the past month, has the individual had health complaints?</b>  This item includes genuine health complaints that caused distress for the individual such as constipation, tooth or ear ache, etc.</p>	Yes
	No

<b>21. Communication and consistency</b>	
<p><b>In the past month, has the approach to this individual been inconsistent?</b>  <i>There may have been a lack of regular, open and clear communication amongst the multi-disciplinary team regarding the individual. The team approach may have been inconsistent, or failed to include clear boundaries for this individual. The team might have felt they have had inadequate training, poor supervision, leadership or organisation.</i></p>	Yes
	No
<b>22. Changes in staff team</b>	
<p><b>In the past month, have there been changes in the individual's core staff team?</b>  <i>There may have been a change to the regular staff team, including familiar staff leaving, new staff arriving, or a high turnover of staff.</i></p>	Yes
	No
<b>23. Staff found individual difficult</b>	
<p><b>In the past month, did staff find it difficult to work with this individual?</b>  <i>Relationships between staff and the individual may have been problematic recently. Staff might have found it difficult to work with the individual.</i></p>	Yes
	No
<b>24. Allowances made by staff</b>	
<p><b>In the past month, did staff make allowances for the individual?</b>  <i>Staff may have made allowances for the individual recently or have been lenient or complacent. This could include allowing the individual to be late for therapy sessions or missing appointments.</i></p>	Yes
	No
<b>25. Knowledge of the individual</b>	
<p><b>In the past month, did staff working with the individual feel they knew the client well and were aware of his/her behavioural or risk indicators?</b>  <i>This item refers to direct care/support staff having adequate knowledge and understanding of the individual. This knowledge is gained from previous incidents and an established rapport with the individual. Staff may have felt that they lacked insight into the individual's behaviour patterns, or risk indicators.</i></p>	Yes
	No

<b>26.Change in intimate relationships</b>	
<p><b>In the past month, has the individual experienced a breakdown in a relationship or had trouble maintaining a relationship?</b>  <i>The individual may have been struggling to maintain, or has experienced a disruption to, an intimate relationship with a significant other (not family).</i></p>	Yes
	No
<b>27.Relationships with peers</b>	
<p><b>In the past month, did the individual seem unable to get along with people?</b>  <i>The individual may have had trouble getting on with people recently (not including intimate relationships). They may have been complaining about peers, bullying, antagonising others or they may have been on the receiving end of such behaviours. The individual could have been involving themselves in other clients' business, or engaging in surreptitious (secretive) conversations with peers.</i></p>	Yes
	No
<b>28.Family problems/dynamics</b>	
<p><b>In the past month, did the individual appear apprehensive about a situation involving their family?</b>  <i>An approaching meeting with a family member may have caused anxiety or distress due to a difficult relationship. Alternatively, the individual may have been frustrated at the lack of contact with their family or lack of proximity to family. The client may have felt unsupported by their family.</i></p>	Yes
	No
<b>29.Lifestyle regulation</b>	
<p><b>In the past month, has there been disruption to normal routine, or a lack of structure in the client's life?</b>  <i>There may have been a lack of structure and stability in the individual's life recently. They might have experienced a chaotic lifestyle. The client might have experienced a recent change or a disruption to a normal sleep pattern, for example.</i></p>	Yes
	No
<b>30.Meaningful activity</b>	
<p><b>In the past month, has the individual stopped or reduced the amount of meaningful activity they usually do?</b>  <i>The individual may have chosen not to engage in meaningful activities such as day service sessions, social activities, although they were available (not stopped/reduced due to illness).</i></p>	Yes
	No

<b>31.Recent setback</b>	
<p><b>In the past month, did the client experience a setback or feel frustrated?</b>  <i>There might have been behaviour changes as a result of a perceived setback or disappointment (e.g. an arranged outing being cancelled, staff sickness, or a gradual increase in one disappointment after another, service providers or commissioners failing to deliver promises). It may also be that the case that the individual felt their needs and demands were not being met (things being delayed, expectations not met).</i></p>	Yes
	No
<b>32.Physical environment</b>	
<p><b>In the past month, did the individual appear distressed by or have a problem with the environment they live in?</b>  <i>Living in close proximity to other service users could have been a cause of frustration. For example, the ward environment could be particularly noisy or too quiet for the individual. A peer may have been experiencing mental health problems or exhibiting challenging behaviours that the individual has been affected by.</i></p>	Yes
	No
<b>33.Restrictions in the environment</b>	
<p><b>In the past month, did the individual appear unhappy with restrictions in their environment?</b>  <i>The individual may have felt they were unfairly denied access to tangibles such as cigarettes. They may have seemed unhappy with current restrictions or regimes for access to their room, or free time. This may have resulted in feelings of frustration and resentment that could be made worse by a lack of physical space to escape to.</i></p>	Yes
	No
<b>34.Significant future event</b>	
<p><b>In the past month, did the individual seem concerned about a future event?</b>  <i>Individuals might have become stressed or over stimulated due to anticipation of a significant life event. Such situations could include, for example CPA (Care Programme Approach), MAPPA (Multi Agency Public Protection Arrangements) meetings, tribunals, anniversary of a death, a major change or something the individual perceives as important to their progress within the next year, such as a probation review.</i></p>	Yes
	No

**Comments:**



## **Appendix I**

Letter of Endorsement for Human Research Ethics

Ref: PB/PE

13 September 2010

Professor Alex Blaszczyński  
School of Psychology  
Brennan MacCallum Building – A19  
The University of Sydney  
Email: alex.blaszczyński@sydney.edu.au

Dear Professor Blaszczyński

Thank you for your correspondence received 3 September 2010 addressing comments made by the Human Research Ethics Committee (HREC). The Executive Committee of the HREC, at its meeting of **7 September 2010**, considered this information and approved the protocol entitled **“The Assessment and Management of Dynamic Risk and Protective Factors for General Recidivism Offenders with an Intellectual Disability”**.

Details of the approval are as follows:

**Protocol No.:** 12944  
**Approval Period:** September 2010 to September 2011  
**Authorised Personnel:** Professor Alex Blaszczyński  
Mr Matthew Frize

**Documents approved:**  
**Guardian Consent Form Version 2 30.08.10**  
**Guardian Information Sheet Version 2 30.08.10**  
**Consent Form Version 2 30.08.10**  
**Support Person Consent Form Version 2 30.08.10**  
**Participant Information Statement Version 2 30.08.10**

The HREC is a fully constituted Ethics Committee in accordance with the National Statement on Ethical Conduct in Research Involving Humans-March 2007 under Section 5.1.29.

The approval of this project is conditional upon your continuing compliance with the National Statement on Ethical Conduct in Research Involving Humans. N.B. A report on this research must be submitted every 12 months from the date of the approval, or on completion of the project, whichever occurs first. Failure to submit reports will result in the withdrawal of consent for the project to proceed. Your report will be due on **30 September 2011**, please put this in your diary.

**Chief Investigator / Supervisor’s responsibilities to ensure that:**

1. All serious and unexpected adverse events should be reported to the HREC within 72 hours for clinical trials/interventional research.
2. All unforeseen events that might affect continued ethical conduct of the project should be reported to the HREC as soon as possible.

**Human Ethics Secretariat:**

Ms Portia Richmond T: +61 2 8627 8171 E: [portia.richmond@sydney.edu.au](mailto:portia.richmond@sydney.edu.au)  
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Ms Kala Retnam T: +61 2 8627 8173 E: [kala.retnam@sydney.edu.au](mailto:kala.retnam@sydney.edu.au)

3. Any changes to the protocol must be approved by the HREC before the research project can proceed.
4. All research participants are to be provided with a Participant Information Statement and Consent Form, unless otherwise agreed by the Committee. The following statement must appear on the bottom of the Participant Information Statement: *Any person with concerns or complaints about the conduct of a research study can contact The Manager, Research Integrity (Human Ethics), University of Sydney on +61 2 8627 8176 (Telephone); + 61 2 8627 8177 (Facsimile) or [ro.humanethics@sydney.edu.au](mailto:ro.humanethics@sydney.edu.au) (Email).*
5. Copies of all signed Consent Forms must be retained and made available to the HREC on request.
6. It is your responsibility to provide a copy of this letter to any internal/external granting agencies if requested.
7. The HREC approval is valid for four (4) years from the Approval Period stated in this letter. Investigators are requested to submit a progress report annually.
8. A report and a copy of any published material should be provided at the completion of the Project.

Please do not hesitate to contact Research Integrity (Human Ethics) should you require further information or clarification.

Yours sincerely



**Associate Professor Philip Beale**  
**Chair**  
**Human Research Ethics Committee**

Copy: Matthew Frize

[mfri8279@uni.sydney.edu.au](mailto:mfri8279@uni.sydney.edu.au)