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**AN EXPLORATORY VALIDATION STUDY OF A RISK ASSESSMENT TOOL FOR MALE SEX  
OFFENDERS WITH AN INTELLECTUAL DISABILITY**

**Section A: The Male Intellectually Disabled Sex Offender: Theory and  
Assessment. A Review of the Literature**

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for Male Intellectually Disabled Sex Offenders**

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This work is dedicated to my Dad, where ever he is now, I hope he is proud of what I've achieved, and to my Granddad who sadly passed away during the final stages of this work. I miss you both.

Christian Sindall  
1946-2005

Pop Capobianco  
1919-2011

## Summary

**Section A** The aim of this paper was to review and provide a summary of the empirical and theoretical literature on risk assessment, recidivism and theories of offending in relation to ID sex offenders. This work is still in its infancy when compared with the non-intellectually disabled sex offending and risk assessment research and it was therefore important to include an overview of the general sex offending literature, to establish how this relates to the more recent developments in the study of ID sex offenders.

**Section B** is an exploratory validation study using a longitudinal cohort design. The purpose of the study was to explore the criterion validity and of the ARMIDILO-S risk assessment tool. The study investigated the tool by using it with a clinical population of adult men with an intellectual disability, who had taken part in sex offender group treatment, due to their sex offending behaviour.

**Section C** is a critical appraisal of the process of undertaking this research. It is a reflective and critical account of what skills and lessons the author has learnt, what could have been done differently, and how it might affect clinical work and future research.

## Section A

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**Oliver Sindall BSc Hons. MSc**

**Major Research Project**

**SECTION A  
Literature Review**

**The Male Intellectually Disabled Sex Offender: Theory and Assessment. A Review of the Literature**

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### **Abstract**

The past 20 years has seen a growing interest, both clinically and academically, in the assessment of intellectually disabled (ID) men who sexually offend. The aim of this paper is to review and provide a summary of the empirical and theoretical literature on risk assessment, recidivism and theories of offending in relation to ID sex offenders. This work is still in its infancy when compared with the non-intellectually disabled sex offending and risk assessment research. It was therefore important to include an overview of the general sex offending literature, to establish how this relates to the more recent developments in the study of ID sex offenders. Many different theories of general sex offending have contributed to generational changes in assessment and the creation of risk measures. However, historically little consideration has been given to understanding the theory and risk assessment of ID sex offenders. Although significant progress has been made with this group, this review has clearly demonstrated that this is based on adaptations and interpretations of the existing mainstream literature with no clear evidence that the same principles apply to ID sex offenders. Future research needs to continue the development of risk assessment to allow for a greater understanding of the causes of ID sex offending and to move towards a more comprehensive and extensive theoretical grounding of ID sex offender research.

## **Introduction**

Nearly all of western society acknowledges that sexual assault is a serious problem (Furby, Blackshaw, & Weinrott, 1989) and, with the help of the media, sexual offending has become the crime that invokes the most public concern (Hanson & Morton-Bourgon, 2005). This has led to a large body of research aimed at understanding sex offending, including causes, typologies and risk assessment. Despite this attention, efforts have been much slower in developing parallel approaches for ID sex offenders (Craig, Lindsay, & Browne, 2010). However, interest in the assessment and treatment of this group has grown considerably in the last 20 years. Much of the literature attributes this to the process of deinstitutionalization that took place throughout the 1980s (Caparulo, 1991; Lambrick, 2003; Lindsay 2002; McGrath, Livingston & Falk, 2007). One of the fastest growing areas has been the risk assessment of ID Offenders. The purpose of this review is to summarise the sex offender literature in both mainstream and ID research. It aims to clarify the theories and studies that have led to the current understanding of recidivism and risk in sex offenders with an intellectual disability.

## **Definitional and Methodological Considerations**

A number of studies have highlighted a common problem encountered when researching ID sex offenders: the range of interchangeable terms used to describe individuals, or groups of individuals with intellectual disabilities (Craig, Lindsay, & Browne, 2010) (e.g. ‘learning disability’, ‘developmental disability’, ‘intellectual disability’ and ‘mental retardation’). This may affect the validity and applicability of some of the research findings, despite researchers’ attempts to encapsulate this group. For the purpose of this review the term ‘intellectual disability’ will be used, based on the following definition:

A significantly reduced ability to understand new or complex information and to learn new skills (impaired intelligence), a reduced ability to cope independently (impaired functioning), all arising before adulthood (under 18 years of age) and having a lasting effect on development. (Department of Health, 2001, p.14, as cited in Craig, Lindsay, Browne, 2010)

There are similar concerns with the definitions of sexual abuse. This review reports the interchangeable terms, based on the paper in question. However, overall, the definition preferred is that of the UK based Sex Offender Treatment Services Collaborative in Intellectual Disabilities (SOTSEC-ID) (SOTSEC-ID, 2010). This project defined:

sexually abusive behaviour as any sexually related behaviour for which the other person was not consenting (including unable to consent), and the behaviour would be defined as illegal within the jurisdiction in which it occurred.

The phrase ‘would be defined as illegal’ is key to this definition. According to Murphy and Sinclair (2009), not many sex offenders with ID have been convicted of an offence, and much of their behaviour goes unreported and/or unprosecuted.

The search strategy for this review was conducted using key peer-reviewed journal databases and supporting textbooks (see Appendix 1).

### **Sex Offending and Risk Assessment with Non-ID Offenders**

Although the literature around ID sex offending is growing rapidly, it is still in its infancy compared with general sex offending and risk assessment research. Therefore, in any review

of this area it is important to have an overview of the sex offending literature, in order to understand how this relates to more recent developments in the study of ID sex offenders.

### **Theories of Sex Offending**

The sex offending literature seems to be divided into theories that attempt to explain offending, risk factors and recidivism, and the assessment of risk. Ward, Polaschek, and Beech (2006), in their examination of modern theories relating to sexual offending, proposed a meta-theoretical framework by Ward and Hudson (1998) for classifying theories. This framework is based on generality of focus and the extent to which the relevant factors are from developmental and contemporary processes. Ward and Hudson's (1998) 'levels' have been used elsewhere in the literature (Craig, Browne & Beech, 2008; Ward & Beech, 2006) and will be used here to provide an overview of the different theories reported. It is important to note that the 'levels of theory' framework is only intended to function as a heuristic for locating theories according to their primary explanatory focus. It is therefore, not rigid, and some theories may fall between the three different levels (Ward, Polaschek, & Beech, 2006).

#### **Level I**

Level I theories represent multi-factorial accounts of sexual offending. They aim to take into account the core features of sexual offenders and to provide theories for what causes these phenomena and how they manifest in sexually abusive actions.

There have been four main multi-factorial theories of sexual offending (Craig, Browne & Beech, 2008; Finkelhor, 1984; Marshall & Barbaree, 1990; Ward & Beech, 2006; Ward, Polaschek, & Beech, 2006; Ward & Siegert, 2002). These are Finkelhor's (1984) Precondition Theory, Marshall and Barbaree's (1990) Integrated Theory, Hall & Hirschman's



(1992) Quadripartite Model, and Ward and Siegert's (2002) 'Pathway Model of Sex offending'.

Finkelhor's (1984) model was one of the most widely cited throughout the review. It suggests that there are four preconditions associated with child sexual abuse. Precondition 1 states that offending is associated with the three motives of emotional congruence, sexual arousal, and blockage; Precondition 2 is the overcoming of internal inhibitors against sexual offending; Precondition 3 is overcoming external inhibitors, and finally, Precondition 4 is overcoming the resistance of the victim (Craig, Browne & Beech, 2008; Finkelhor, 1984; Ward & Beech, 2006; Ward, Polaschek, & Beech, 2006). According to Ward, Polaschek, and Beech (2006) this model has led to a number of clinical innovations, but due to its conceptual vagueness, especially in the light of current research, it no longer stands as an adequate explanatory theory.

The Integrated Theory (Marshall & Barbaree, 1990) suggests that people who undergo adverse developmental experiences may develop irregular internal working models of relationships (Craig, Browne & Beech, 2008). Marshall and Barbaree (1990) highlight the development of vulnerability, arguing that adverse and inappropriate early experiences can contribute to the formation of anti-social attitudes and offence related vulnerabilities (Ward, Polaschek, & Beech, 2006). Adolescence is a critical period, as young adults without effective interpersonal skills, are more likely to be confused by hormonal and biological challenges. Moreover, Marshall and Barbaree (1990) propose that these adolescents have an increased chance of learning to meet their sexual needs in a socially inappropriate manner. A key idea in the integrated theory is that situational disinhibitors, victim availability and

opportunity allow these individuals to meet a number of psychological needs through sexual activity. This theory has been evaluated as having empirical adequacy and external consistency, as it is both dynamic and complex. As a result, it is supported by, and focused on, in multiple areas of research (Marshall, 1999; Smallbone & Dadds, 1998; Ward, Polaschek, & Beech, 2006). However, it has been argued that this integrated theory places too much emphasis on impulsivity at the cost of understanding the beliefs underlying offenders' goals and values (Ward, Polaschek, & Beech, 2006).

Hall and Hirschman's (1992) Quadripartite Model was based on research about child molesters. Each of the four factors can be used to identify a particular type. These include the physiological arousal subtype, the cognitive subtype, emotional regulation subtype, and personality problems. The idea is that whilst each of these factors increases the likelihood of offending, one factor is usually key for each offender and constitutes their primary motive (Craig, Browne & Beech, 2008; Ward, Polaschek, & Beech, 2006). Ward, Polaschek, and Beech (2006) argue that this model has been unjustly neglected. By focussing on a number of causal factors and demonstrating that sexual abuse is a final common pathway for multiple distinct aetiologies, the theory shows its empirical scope and unifying power. Conversely, Ward et al. (2006) believe that its coherence is threatened by its vague construct and inability to fully explain how the four factors interact with each other to cause sexual abuse.

Finally, Ward and Siegert (2002) have taken a 'theory knitting' approach to produce a more coherent pathway theory of child sexual offending. This synthesises the strongest elements of the Finkelhor (1984), Marshall and Barbaree (1990), and Hall and Hirschmann (1992) theories. In keeping with these theories the phenomenon of offending is generated by five different, but interacting psychological mechanisms/pathways: intimacy and social skills deficit; distorted sexual scripts; emotional dysregulation; cognitive distortions; and multiple

dysfunctional mechanisms. In this pathways model, situational factors are said to interact with the mechanisms of each individual and this leads to sexually abusive behaviour. It highlights what has been evident in all these theories, that sexual offending is caused by multiple factors, and offenders can abuse for very different reasons. In fact, its strength is that it stipulates that sexual abuse can occur via a number of distinct and interacting pathways (Ward, Polaschek, & Beech, 2006).

The creation and continuing development of Level I theories (Ward & Hudson, 1998) has, evidentially, provided an important foundation for the continued understanding of potential pathways to sex offending.

## **Level II**

Level II theories are concerned with explaining single risk factors that are important in understanding the generation of a sexual offence. In this approach the various structures and processes constituting the variable of interest are described (Ward, Polaschek, & Beech, 2006).

Throughout the literature, Level II risk factors have been divided into static and dynamic factors, with dynamic factors being subdivided into stable and acute factors. Hanson and Bussiere's (1998) meta-analysis of recidivism studies is widely reported as the most comprehensive examination of static risk factors (Craig, Browne & Stringer, 2003; Craig, Thornton, Beech, & Browne, 2007; Hanson & Harris, 2000; Hanson & Morton-Bourgon, 2005). They examined 61 follow up studies, providing information on 28,972 sexual offenders. In terms of demographic variables, being young and single was related to sexual offence recidivism. The risk was increased for those who had prior sexual offences, had

victimised strangers, had extrafamilial victims, began sexually offending at an early age, had male victims, or had engaged in diverse sexual crimes. The strongest predictors of sexual recidivism were factors related to sexual deviance (Hanson & Bussiere, 1998). Craig, Browne, Stringer and Beech (2005) examined 26 studies (n= 33,001) and identified 17 static factors that included prior criminality, prior sexual offences, psychopathy, age, and paraphilias and deviant sexual interests. Craig, Browne, and Beech (2008) conclude that a review of these recidivism studies reveals a consistent pattern of static risk factors including criminal history, deviant sexual interests, prior sexual offending, non-contact sex offences, personality disorder, psychopathy, age at first offence, unrelated/stranger victims, and male victims. All of these are positively associated with sexual recidivism.

Whilst many studies have contributed to the overall knowledge of static risk factors, less is known about what changes in dynamic factors affect a person's risk (Beecher, Fisher & Thornton, 2003). In light of the ongoing research into sex offender risk assessment, Hanson and Morton-Bourgon (2005) presented a study to update Hanson and Bussiere's (1998) meta-analysis, which included more dynamic risk factors. The study confirmed sexual deviancy and antisocial orientation as major predictors of sexual recidivism and extended the range of variables to include dynamic factors such as sexual preoccupations, lifestyle instability/impulsivity, pro-offending attitudes and intimacy deficits. Hanson and Harris (2000) identified dynamic risk factors by comparing information on 208 sex offender recidivists and 201 non-recidivists. They concluded that out of all the main types of risk factors, the stable dynamic factors most strongly differentiated between recidivists and non-recidivists. Thornton (2002) and Craig, Thornton, Beech, and Browne (2007) report a useful framework for stable dynamic risk factors. They suggest that these factors fall into four

specific domains: Sexual Interests (offence related sexual preferences and sexual preoccupation), Distorted Attitudes (sets of beliefs/attitudes about offences, sexuality and victims that can be used to justify offending), Socio-Affective Functioning (anxiety, depression, anger, inadequacy, emotional congruence, lack of emotional intimate relationships with adults, and aggressive thinking), and Self Management (individuals' ability to plan, problem solve and regulate dysfunctional impulses). These factors were supported by Cortoni (2009) and Ward, Polaschek, and Beech (2006), in their examination of modern theories which also identified cognitive distortions, victim empathy, sexual preferences and intimacy deficits as Level II, single dynamic factor theories.

### **Level III**

Level III theories are descriptive models of the offence chain or relapse process, specifying the cognitive, motivational, and social factors associated with sexual offences.

Ward and Hudson's (1998; 2000) Self-Regulation Model offers four pathways to sexual offending based on the integration of existing theory and self regulation theory (Ward, Polaschek, & Beech, 2006). The four pathways (Hudson & Ward, 2000) are: Avoidant-Passive (stressful events overload, desire to cope through deviant sexual activity, wants to restrain, but covert planning leads to high risk situation, offends, left feeling defective and ashamed), Avoidant-Active (stressful events overload, responds with poor strategies to avoid offending, abandons attempts to restrain, offends, has feelings of guilt), Approach-Automatic (offender has automated behavioural scripts, they accidentally encounter a high risk situation and it is only then that the scripts become activated, offences appear 'out of the blue', post

offence affect is positive), and Approach-Explicit (conscious planning, strong desire for sexual gratification from offending, positive post offence affect, refinement of offence related strategies). Bickley and Beech (2002) demonstrated that this model could be reliably employed in the classification of child molesters, with inter-rater agreement in 80% of their sample. However, they concluded that classifying all offenders into one of the four pathways may not always be possible.

### **Risk Assessment and Its Links with the Theories of Sexual Offending**

In Bonta's (1996) review of the risk prediction literature he described the 'three generations' of offender risk assessments (Clinical Judgement, Actuarial, Risk-Needs), and it seems evident that the various levels of sex offending theory have contributed to this generational movement. Craig, Beech, and Harkins (2009) provide a further comprehensive break down of approaches to assessing re-offending.

#### **First generation**

Unguided Clinical Judgement (reviewing case material without any prior theory to judge the importance of the data obtained) and Guided Clinical Judgement (start with a theory or set of ideas based purely on the clinician's own experience). Despite the lack of empirical evidence a number of studies refer to the argument of clinical judgement versus actuarial methods of risk assessment (Craig & Beech, 2010; Hanson & Morton-Bourgon, 2009; Stalans, Hacker, & Talbot, 2010). Craig and Beech (2010) suggest that clinical judgement is still supported by some professionals as it allows for decisions to be made at an individual level. However, given the developments in risk assessment to date, this still seems a potentially dangerous and unethical approach, if used in isolation.

## **Second generation**

Actuarial Assessments are based on the static and historical risk factors discussed earlier and it is widely accepted in the literature that this approach offers a much superior method of predicting recidivism when compared with clinical judgement (Craig & Beech, 2010; Hanson & Boughton, 2009; Hanson, Morton & Harris, 2003; Stalans, Hacker, & Talbot, 2010). Craig, Beech and Harkins (2009) describe how the actuarial approach statistically identifies relevant risk factors from which a numerical risk score can be calculated, giving a risk description of low, medium or high risk of re-offending. The purely actuarial approach shows good predictive validity and this has led to a number of actuarial risk assessment scales for sex offenders (Seto, 2005). Some of the best known are: The Rapid Risk Assessment for Sexual Offence Recidivism (RRASOR; Hanson, 1997), Static-99 (Hanson & Thornton, 2000), Static-2002 (Hanson & Thornton, 2003), Risk Matrix 2000 (RM2000; Thornton et al., 2003), and the Sex Offender Risk Appraisal Guide (SORAG; Quinsey et al., 1998). A number of cross validation and comparison studies have recorded different findings. Sjöstedt and Langström (2001) cross validated the RRASOR and Static-99 and concluded that both exhibited validity for the actuarial assessment of sexual recidivism. Harris et al. (2003) compared the SORAG, RRSASOR and Static-99 concluding that all three instruments predicted sexual violence and sexually motivated recidivism. Craissati and Beech (2005) suggested that there was slightly stronger support for the predictive accuracy of the Static-99 over the RM2000, and a comparison of the Static-99, Static-2002, RRASOR and the RM2000, by Looman and Abracen (2010) provided support for the use of the RM2000 and Static-2002 with high risk sex offenders.

Despite the strong evidence for risk prediction from actuarial measures, this approach does have limitations. Beech, Fisher, and Thornton (2003) note that these scales yield a probability and not a certainty of re-offending, and are based on observed recidivism data, rather than the true rate of offences. However the same could be argued in relation to clinical judgement. Nevertheless, an absence of dynamic risk factors in any of these assessments means that they cannot be used to measure change or predict when re-offending might happen (Mandeville-Nordon & Beech, 2006).

Structured Clinical Judgement approaches are guided by an a priori set of factors informed by risk assessment theory and research (Ward, Polaschek, & Beech, 2006). The most cited research-guided clinical tool is the Sexual Violence Risk 20 (SVR-20; Boer, Hart, Kropp & Webster, 1997). This assesses the risk of sexual violence by selecting 20 factors from an extensive list that can be divided into Psychological Adjustment, Sexual Offending and Future Plans (Craig, Browne, & Beech, 2008). Although the scale was never designed to be an actuarial tool, its accuracy at predicting recidivism has been tested in a number of studies. Rettenberger, Matthes, Boer and Eher (2010) compared the predictive validity of the most commonly used risk assessment instruments for sexual offending; and the SVR-20 showed similarly good predictive validity to the other scales tested.



### **Third generation**

Hanson and Morton-Bourgon (2009) provided a similar comparison study of the accuracy of these various approaches to risk assessment. Their review comprises a meta-analysis of 118 studies, including 45,398 sex offenders. They reported that unstructured clinical judgement was significantly less accurate than the empirically derived actuarial measures, which were considered the most accurate approach for the prediction of sexual recidivism. Interestingly, although only based on three studies, the measure with the largest average association with sexual recidivism was the SVR-20. Hanson and Morton (2009) concluded that the future of sexual offender risk assessment is based on Bonta's (1996) third generation theory (as cited in Andrew & Bonta, 2003). This requires the development of fully actuarial measures that also contain clinically relevant, risk –need based, dynamic factors.

### **Brief summary**

There are many different theories and models throughout the general sex offending literature that attempt to explain the causes of sexual abuse, typologies, and the risk factors for recidivism. Furthermore, it is evident that the generational changes in risk assessment and the creation of risk measures have been based on these theoretical foundations. However, historically little consideration has been given to the understanding, theory and risk assessment of specific offender populations, including ID sex offenders.

## **Sex Offending and Risk Assessment: ID Sex Offenders**

Despite lagging behind the development of work with main stream sex offenders, the past 15 years have shown considerable developments in working with ID sex offenders (Lindsay & Taylor, 2010). The following section reviews this work in the context of theory, recidivism, and risk assessment.

### **Theories of ID Sex Offending**

In his chapter on ID sex offenders, Riding (2005) suggests that explanations for why people sexually offend can be broadly divided into two groups, empirical models that rely on the characteristics and typologies of offenders, and the theoretical models that seek to explain the development of such characteristics. This is similar to Ward and Hudson's (1998) distinction between Level I and Level II theories of offending. However, the ID sex offending literature has yet to produce a multi-factorial theory of the core features of ID sex offenders and the resulting sexually abusive behaviour. For this reason much of the ID sex offending literature is based on Level II theories or empirical models (Riding, 2005). Furthermore, Clare and Murphy (1998) warn against applying established mainstream offending theories to the understanding of the ID population because there is no clear evidence that the same principles apply.

### **Aetiological theories of ID sex offending**

Craig and Lindsay (2010) identify Counterfeit Deviance, Tendencies towards Sexual Offending, Sexual Abuse, Personality and Impulsivity, and Mental Illness, as the main

hypotheses for explaining sexual offending in people with ID. These can also be understood by using Thornton's (2002) four domain framework for dynamic risk factors (Lindsay & Taylor, 2010).

Counterfeit Deviance (Distorted Attitudes Domain) was first described by Hingsburger, Griffiths, and Quinsey (1991). Whilst still seeing sexual offending behaviour as deviant, it suggests that there are precipitating factors for men with ID such as poor social skills, sexual naivety, limited opportunities to establish relationships, and lack of sexual knowledge (Lindsay & Taylor, 2010). Luiselli (2000) referred to this theory as the most influential basis for the development of treatment for ID sex offenders. However, a number of studies have questioned its validity, specifically in the area of sexual knowledge. In an evaluative study of the Assessment of Sexual Knowledge (ASK) tool (Butler, Leighton, & Galea, 2003), Galea, Butler, Iacono, and Leighton (2004) found that ID offenders actually had good sexual knowledge, especially in relation to parts of the body and public versus private places (in terms of undertaking sexual activity). In another sexual knowledge assessment study, Lunksy et al., (2007) found there was also no difference between ID sex offenders and a control group. Interestingly, when ID sex offenders were split into those who had committed repeated, forced offences and those who had committed inappropriate sexual behaviours (such as masturbation or touching), they found that forceful offenders had higher sexual knowledge than non-offenders, and inappropriate offenders had a level of knowledge similar to non offenders. This suggests that the theory may still apply to this 'inappropriate offenders' group. Conversely, Rice, Harris, Lang, and Chaplin (2008), found that ID sex offenders, like sex offenders in general, commit sexually abusive behaviour largely based on deviant sexual interests, not because of sexual ignorance or poor social skills. However, Lindsay (2009) has

revised the counterfeit deviance hypothesis by suggesting that sexual knowledge in ID offenders continues to be lower than non ID men, and any lack of understanding may interact with the need for sexual contact, resulting in sexual offending behaviour.

Tendencies towards Sexual Offending (Sexual Interest Domain)-is the hypothesis that persistent sexual offending is a result of deviant sexual interests and cognitive distortions (Craig & Lindsay, 2010). As shown by Rice et al., (2008), ID sex offenders have shown the same primary motivations of sexual preference and drive shown by mainstream sex offender studies. Lindsay and Taylor (2010) suggest that looking at offending patterns provides further evidence of this. Day (1994) reported that all 31 of his ID sample had previous recorded incidents of inappropriate sexual behaviour, and Lindsay et al., (2002) found previous convictions or reports of offending in 62% of the referrals to treatment service. What has been argued is that given the disincentives for continued offending, sexual preference must be a significant factor (Lindsay & Taylor, 2010). Blanchard et al. (1999), in their study of 950 sex offenders, felt that the increased likelihood for ID sex offenders to offend against younger male children provided more evidence for this argument. More persuasive and less anecdotal evidence comes from a detailed meta-analysis by Cantor, Blanchard, Robichaud, and Christensen (2005). They reviewed the IQ and sexual offending data of 25,146 sex offenders and found a relationship between low IQ and paedophilia, supporting the notion that both ID and general offenders are motivated by specific sexual preferences.

Sexual Abuse- is the theory that there may be an association between sexual abuse in childhood and sexual offending for ID sex offenders. Hayes (2002) suggests that this is one

of the many similarities between ID sex offenders, ID non-sex offenders and non-disabled sex offenders. Lindsay, Law, Quinn, Smart and Smith (2001) compared the abuse histories of ID sexual and non-sexual offenders and found that although only 38% of sex offenders reported experiencing sexual abuse during childhood, this exceeded levels found in non sex offenders. Other studies have also found high rates of physical and sexual abuse among ID sex offenders (Hayes, 2004; SOTSEC-ID, 2010), and Lindsay et al., (2001) still concluded that sexual abuse in childhood maybe a significant variable in the development of sexual offending in later life. In a recent book chapter, Hayes (2010) concludes that ID sex offenders are more likely than non-offenders to have attachment disruption, to have experienced abuse, to be aggressive, to have deficits in executive functioning, and suffer from a number of mental, behavioural and emotional difficulties due to these early experiences.

Personality and Impulsivity- highlights one of the main personality characteristics that had been singled out in a number of studies relating to ID sex offenders (Caparulo, 1991; Craig & Lindsay, 2010; Hayes, 1991; Swartz & Masters, 1983). Glaser and Deane (1999) studied 120 offenders with ID and concluded that for some offenders sexually abusive behaviour is part of a pattern of impulsivity rather than explicit sexual deviation or preference. Conversely, Parry and Lindsay (2003) compared groups of sex offenders, non-sexual offenders and non-offenders, and found that sex offenders actually reported significantly lower levels of impulsivity. However, they also argue that different categories of sex offender could show differences in impulsivity, and that lower levels of impulsiveness may demonstrate planning behaviour consistent with sexual deviance.

Mental Illness- this is based on the belief that ID sex offenders are likely to have a diagnosis of mental illness. A lot of the evidence for this comes from prevalence studies in the ID sex offender literature. Lund (1990) reported that 97.1% of his cohort had a diagnosis of mental illness, while Day (1994) and Lindsay et al. (2004) both reported that 32% had been diagnosed with psychiatric illness, though SOTSEC-ID (2010) reported lower rates. Other studies have compared sex offenders with other offenders and found no significant differences in rates of mental illness (Lambrick & Glaser, 2004; Lindsay, et al., 2004). This suggests that mental illness may not be a primary factor when it comes to sexual offending (Lindsay & Taylor, 2010).

### **Recidivism & Risk Assessment in ID Sex Offending**

Assessing risk based on informed evidence has been regarded as particularly challenging in relation to people with ID (Turner, 2000), where levels of reported offending are likely to be suppressed (Clare & Murphy, 1998). This has meant that predicting re-offending has been limited, especially compared to the extent of mainstream sex offender research (Lambrick, 2003; Harris & Tough, 2004; Lindsay & Beail, 2004).

### **Actuarial assessment**

None of the formal mainstream actuarial measures mentioned earlier take into account specific issues relevant to an ID population, and no actuarial measure has been developed or normed for this group of offenders (Blacker, Beech, Wilcox, Boer, 2010). Craig and Hutchinson (2005) have argued that it may not be appropriate for mainstream measures to be applied to ID offenders who differ from the original data cohorts, as this will reduce the predictive accuracy of the assessment. Conversely, Wilcox (2004) suggests that these risk assessment tools can nevertheless be applied due to the large offender populations that the original risk factors were based on. He argues that as these populations were normally distributed in terms of intelligence, a proportion would have intellectual disabilities. Moreover, Harris and Tough (2004) highlight the fact that there is no research that shows any risk predictors that are different for ID offenders compared with general sex offenders. They argue that the RRASOR is a useful tool for the assessment of ID sex offenders. In a comparison study of the RRASOR, Static-99 and RM-2000, on a sample of 27 ID sex offenders, the Static-99 had the highest AUC of 0.64, and the RRASOR actually produced the lowest score (AUC= 0.42) with no predictive accuracy (Wilcox, Beech, Markall, & Blacker, 2009). Although it has been argued that there are no specific risk predictors for ID sex offenders, studies have shown that their offence characteristics are different. They have been shown to offend against younger male victims (Blanchard et al., 1999) and tend to commit offences that are deemed less serious (Brown & Stein, 1997). Moreover, Lindsay, Elliot, and Astell's (2004) study into predictors of recidivism highlighted that a large number of static risk factors (and therefore the resulting items within actuarial tools) were not found to be predictive within an ID sample. These included employment history, deviant victim choice,

diverse sexual crimes, criminal lifestyle and criminal companions. More recently Wilcox et al. (2009) also reported that some actuarial risk instruments contain bias items (e.g. long term relationship status, employment history) that predispose ID offenders to have a heightened risk level, reducing the predictive accuracy of the assessment. The ID population do not generally have long term relationships or continuous employment and therefore, unlike the non ID offenders, they should not be assigned high risk scores based on the absence of these factors.

### **Dynamic factors**

Before Lindsay, Elliot and Astell (2004), most of the research into dynamic risk was based on work within the general sex offending literature. They found that antisocial attitudes, denial of crime, erratic attendance, and poor response to treatment significantly predicted recidivism. Other studies have identified a number of dynamic risk factors such as relationship difficulties, deviant sexual interests, communication difficulties and susceptibility to the influence of others, in samples of ID sex offenders (Caparulo, 1991; Embregts et al., 2010; Lindsay, Olley, Baillie, & Smith, 1999). In terms of formal risk assessment, only one tool exists. Boer, Tough, and Harris (2004) have developed the ARMIDILO (Assessment of Risk Manageability for Intellectually Disabled Individuals who Offend), a structured clinical assessment tool which provides a convergent approach to risk assessment. It proposes the use of the RRASOR or the Static-99 to calculate an individual risk baseline, followed by the use of 30 stable and acute dynamic risk factors. The design of the ARMIDILO has also highlighted the importance of environmental risk factors in the assessment. Boer et al. (2004) identified several factors, including victim access, staff attitudes towards ID sex offenders, communication among staff, and monitoring of the offender. Haaven (2005) also suggested that environmental factors needed to be added to the assessment of risk within this



population, and Embregts et al. (2010) suggest that as an offender's level of functioning becomes lower, environmental factors become more salient.

Blacker et al. (2010) seem to provide the only comparison of second generation risk assessment methods using ID sex offenders. The predictive value of the SVR-20, RM 2000, RRASOR and ARMIDILO were examined by using a sample of 44 ID sex offenders, matched with 44 non-ID sex offenders. Overall they found that these risk assessment tools were more accurate for recidivism with the non ID group. However, for the ID group the ARMIDILO (Acute client factors only), SVR-20 Pro-social Affect and overall scales were good predictors of sexual recidivism. They concluded that "these findings are consistent with the position that actuarial risk tools are not as effective for intellectually disabled populations" (page 14).

### **Brief summary**

Although significant progress has been made in trying to understand ID sex offenders, what causes them to offend, and how risk can be accurately assessed, this work remains in its infancy. Whilst a number of characteristics and static and dynamic factors have been identified, there seem to be no clear multi-factorial accounts of the core features of sex offenders and the resulting sexually abusive behaviour (Ward & Hudson, 1998). The risk assessment literature continues to debate the use of actuarial mainstream measures, with recent studies focusing on the importance of the more dynamic, environmental and overall idiographic risk factors, for ID sex offenders.

### **Overall Conclusion and Future Research**

The mainstream sex offender literature now stretches back over a number of decades. This has allowed for gradual development from paradigm based theories to extensive multi-factorial theories of offending. This comprehensive theoretical framework allowed literature to develop rapidly in the areas of recidivism and risk assessment, in response (over the past 20 years) to the increasing legal and media attention on sex offenders and the perceived risks. Conversely, the ID sex offender literature, without a specific and comprehensive theoretical grounding, has had to provide a reactive response to the more recent attention and demand for understanding ID sex offenders. This has led to adaptations and interpretations of the existing mainstream literature with no clear evidence that the same principles apply. This has been clearly demonstrated from the ID risk assessment research, where there is still debate over the use of general actuarial measures within this population. However, recent studies focussed on this debate and on the development of new risk assessments, have contributed an increasing amount of evidence for ID specific factors and the importance of the more dynamic, environmental and overall idiographic risk factors, as well as the risk manageability for ID sex offenders.

Therefore, future research needs to continue the development of risk assessment measures to allow for a greater understanding of the factorial causes of ID offending behaviour. There is still no published actuarial assessment tool, and the idiographic tools, such as the ARMIDILO, have yet to be empirically validated. Further research in these areas represents an important step towards a more comprehensive and extensive theoretical grounding of ID sex offender research, similar to what has been achieved in the mainstream literature.

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**Major Research Project**

**SECTION B**  
**Journal Paper**

**An Exploratory Validation Study of a Dynamic Risk  
Assessment Tool for Male Intellectually Disabled Sex  
Offenders**

Word Count: 8,000 (213)  
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**For Submission to the Journal:**  
***Journal of Applied Research in Intellectual Disabilities***

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## Abstract

**Background:** The ARMIDILO-S provides a new convergent approach to risk assessment, where dynamic factors ensure that the appropriate variables are assessed in relation to an Intellectually Disabled (ID) sex offender's risk. The aim of this study was to explore the criterion validity (predictive) of the ARMIDILO-S.

**Materials and Methods:** The current version of the ARMIDILO-S incorporates 26 items to assess the risk and risk manageability of ID sex offenders. The ARMIDILO-S was used with a sample of 16 ID sex offenders who had previously attended group treatment designed by the Sex Offender Treatment Services Collaborative - Intellectual Disability (SOTSEC-ID). This study aimed to provide a longitudinal design approach to the application of a revised version of the tool, using both file and interview based sources of information. All of the participants were followed up after a period of between one and six months to establish whether they had committed any further sexually inappropriate behaviour.

**Results:** The recidivism rate was 32%. Based on the literature and previous studies it was hypothesised that the ARMIDILO-S would show good predictive accuracy. The overall AUC value (0.83) of the tool supported this hypothesis. However further bivariate analysis showed a lack of internal consistency, and low levels of construct validity.

**Conclusions:** The findings were affected by a small sample size and the absence of normative data, and therefore were limited in terms of generalisation. However, the results from this initial investigation suggest that with further research, aimed at

correcting the limitations of this study, the ARMDILO-S could go on to show adequate predictive validity.

## **Introduction**

The mainstream sex offender literature stretches back over a number of decades, which has led to a large body of research aimed at understanding male sex offending, including causes, typologies, and improving risk assessment and treatment. Despite this focus on mainstream sex offenders, efforts have been much slower in developing a similar body of research for intellectually disabled (ID) sex offenders (Craig, Lindsay & Browne, 2010). However, interest in the assessment and treatment of this group has grown considerably in the last 20 years. Much of the literature attributes this increasing level of attention, to the process of deinstitutionalization that took place through the 1980's (Caparulo, 1991; Lambrick, 2003; Lindsay 2002; McGrath, Livingston & Falk, 2007). One of the fastest growing areas of research has been into the risk assessment of ID sex offenders.

### **The Intellectually Disabled Sex Offender**

Murphy and Sinclair (2009) suggest that there has been relatively little research into the characteristics of men with ID and sexually abusive behaviour. However, according to Hayes (2010), the available research demonstrates the importance of background and psychological factors for these men. Hayes (2010) highlighted characteristics such as weak family ties, a history of substance misuse in the family and deficits in adaptive behaviour. Day's (1994) study of 47 men reported school

adjustment problems, mental illness, behaviour disturbances and other criminal behaviour (Day, 1994). Men in this ID population have also shown other challenging behaviours, such as aggression and anger. Lindsay et al (2002) found in a sample of 62 men that 38% showed problems with anger and aggression in their initial assessments following referral. This aggression has also been demonstrated by other non-sexual convictions (Lindsay, Steele, Smith, Quinn & Allen, 2006) in men with ID and sexually abusive behaviour. Day (1994) found that other prominent characteristics in these men included sexual naivety, inability to understand normal sexual relationships, difficulties in mixing with the opposite sex and poor impulse control (Day, 1994). In terms of sexually abusive history, there is evidence to suggest that sex offenders with ID may be more likely to commit sexually abusive behaviour across categories and be less selective with their choice of victim (Day, 1994; Lindsay, 2002; Lindsay et al, 2002; Murphy & Sinclair, 2009; Thompson, 1997).

### **Theories of offending.**

The strength and depth of the mainstream sex offender literature has allowed for a gradual development from paradigm based theories to extensive multi-factorial theories of offending (Craig, Browne and Beech, 2008; Finkelhor, 1984; Marshall & Barbaree, 1990; Ward & Beech, 2006; Ward, Polaschek, and Beech, 2006; Ward & Siegert, 2002). Although the theoretical literature around ID sex offending is growing rapidly, it is still in its infancy compared with general sex offending theory.

Craig and Lindsay (2010) identify Counterfeit Deviance, Tendencies towards Sexual Offending, Sexual Abuse, Personality and Impulsivity, and Mental Illness, as the main hypotheses for explaining sexual offending in people with ID. Counterfeit Deviance was first described by Hingsburger, Griffiths and Quinsey (1991). Whilst still seeing

sexual offending behaviour as deviant, it suggests that there are precipitating factors such as poor social skills, sexual naivety, limited opportunities to establish relationships, and lack of sexual knowledge (Lindsay & Taylor, 2010). Tendencies towards Sexual Offending is the hypothesis that persistent sexual offending is a result of deviant sexual interests and cognitive distortions (Craig & Lindsay, 2010). ID sex offenders have shown the same primary motivations of sexual preference and drive shown by mainstream sex offenders (Rice et al., 2008). Sexual Abuse- is the theory that there may be an association between sexual abuse in childhood and sexual offending for ID sex offenders. Personality and Impulsivity- highlights one of the main personality characteristics that had been singled out in a number of studies relating to ID sex offenders (Caparulo, 1991; Craig & Lindsay, 2010; Hayes, 1991; Swartz & Masters, 1983), and Mental Illness is based on the belief that ID sex offenders are likely to have a diagnosis of mental illness (Day, 1994; Lindsay et al., 2004).

Although being behind the work with mainstream sex offenders, there has been considerable development in the literature, research and general understanding of ID sex offenders during the past decade. However, despite these advances, there is still no clear evidence or understanding of how all these findings contribute to the risk assessment, and risk management, of ID sex offenders.

### **Risk Assessment of Intellectually Disabled Sex Offenders**

Throughout the risk assessment literature, risk factors are divided into two types, static and dynamic factors, with dynamic factors subdivided into stable and acute risk

factors (Craig, Browne & Beech, 2008). A description of these factors is provided in Table 1.

Table 1. Types of risk factor (Craig, Browne, Beech, 2008)

Static	Dynamic
<p>Factors that are useful for evaluating long term risk, but are historical in nature and cannot be used to assess change in levels of risk over time. Most actuarial scales primarily use static factors. Examples include age at first offence and previous offences.</p>	<p>Enduring factors linked to the likelihood of offending that can nevertheless be changed following intervention.</p> <p>These factors are sub-divided:</p> <p><b>Stable Dynamic</b> Those factors which are relatively persistent characteristics of the offender which are subject to change over long periods of time. Such as levels of responsibility, sexual arousal and cognitive distortions.</p> <p><b>Acute Dynamic</b> Rapidly changing factors that can change day-by-day or hour-by-hour. Including substance misuse, negative emotional states, and isolation, the presence of which increase risk.</p>

### Actuarial assessments.

Craig, Beech and Harkins (2009) describe how the actuarial approach statistically identifies relevant static risk factors from which a numerical risk score can be calculated. The purely actuarial approach shows good predictive validity and has led to a number of actuarial risk assessment scales for the general sex offender population (Seto, 2005). Some of the best known are: The Rapid Risk Assessment for Sexual Offence Recidivism (RRASOR; Hanson, 1997), Static-99 (Hanson & Thornton, 2000), Static-2002 (Hanson & Thornton, 2003), Risk Matrix 2000 (RM2000; Thornton et al., 2003), and the Sex Offender Risk Appraisal Guide (SORAG; Quinsey et al., 1998).

However, none of the formal actuarial measures take into account specific issues relevant to an ID population, and no actuarial measure has been developed or normed for this group of offenders (Blacker, Beech, Wilcox, & Boer, 2010). It has been argued that if the characteristics of ID sex offenders are different from the general sex offender group from which actuarial scales have been developed, then the application of these tools with ID offenders is limited (Craig, 2010; Craig & Hutchinson, 2005; Rogers, 2000). Conversely, Harris and Tough (2004) argue that there is no evidence that static factors which reliably predict risk for 'normal' offenders will not reliably predict risk in an ID sex offender population. Interestingly, in a comparison study of the RRASOR, Static-99 and RM-2000 on a sample of 27 ID sex offenders, Wilcox, Beech, Markell, and Blacker (2009) found that the Static-99 had the highest Area Under the Curve (AUC) of 0.64. Lindsay et al. (2008) also found that the Static-99 had a significant score (AUC= 0.71), suggesting that this is the most accurate of the tools, and more importantly, could be used with ID sex offenders.

### **Dynamic assessment.**

Although the argument over whether actuarial tools should be applied to ID offenders continues, it is also important to recognise the overall weaknesses of the approach itself. Most importantly, by being static (see Table 1), actuarial measures are generally insensitive to any changes in risk levels over time and therefore do not take into account the effectiveness of treatment, supervision and other dynamic factors (Harris & Tough, 2004). Unfortunately, as Craig (2010) has highlighted, unlike the research on static factors, there is less agreement on which dynamic risk factors (see Table 1) account for most of the variance in predicting sexual offence recidivism. In relation to ID sex offenders, Lindsay, Elliot and Astell (2004) found that antisocial

attitudes, denial of crime, erratic attendance, and poor response to treatment significantly predicted recidivism. Other studies with samples of ID sex offenders have shown that dynamic risk factors such as relationship difficulties, deviant sexual interests, communication difficulties and susceptibility to the influence of others, are important (Caparulo, 1991; Embregts et al., 2010; Lindsay, Olley, Baillie & Smith, 1999). However, Blacker, Beech, Wilcox and Boer (2010) provide the only published research that has examined the predictive validity of these factors. The predictive value of the SVR-20, RM 2000, RRASOR and ARMIDILO (Assessment of Risk Manageability for Intellectually Disabled Individuals who Offend) were examined by using a sample of 44 ID sex offenders, matched with 44 non-ID sex offenders. Overall they found that these risk assessment tools were more accurate for recidivism with the non-ID group. However, for the ID group the ARMIDILO (Acute client factors only), SVR-20 Pro-social Affect and Overall scales were good predictors of sexual recidivism. They concluded that “these findings are consistent with the position that actuarial risk tools are not as effective for intellectually disabled populations” (page 14).

One of the assessment tools Blacker et al. (2010) studied was developed by Boer, Tough, and Harris (2004). The ARMIDILO uses dynamic risk factors to predict sexual offending. Although it has yet to be empirically validated, the design of the ARMIDILO has also highlighted the importance of environmental risk factors in assessment. Boer et al. (2004) identified several environmental dynamic factors, including victim access, staff attitudes, communication, and monitoring of the offender. Embregts et al. (2010) suggest that as an offender’s level of functioning becomes lower, relevant environmental factors become more salient. The



ARMIDILO provides a new convergent approach to risk assessment, where actuarial instruments provide the baseline, while the dynamic factors ensure that the appropriate variables are assessed in relation to an individual offender's risk (Blacker et al., 2010; Boer, 2006). This approach combines the assessment of risk and risk manageability. According to Craig (2010), although the accuracy of the ARMIDILO in predicting recidivism has yet to be determined, it is likely to prove a useful tool for structuring dynamic risk-related information for ID sex offenders.

### **Rationale**

Although the ARMIDILO lacks empirical validation, Blacker et al. (2010) demonstrated that dynamic factors seem to be better indicators of risk levels with an ID sex offender population, and the ARMIDILO represents the only assessment tool designed to address the dynamic factors specific to this group. They concluded that its results were promising, but further validation was required (Blacker et al., 2010). The aim of this study was to contribute to the validation process of the ARMIDILO and to address some of the limitations reported in the previous study. Blacker et al. (2010) were limited to retrospective file coding, meaning that only the client based subscales were analysed, as the information required for the environmental subscales was not documented in file information. This study aimed to provide a prospective design approach to the application of a revised version of the tool, the ARMIDILO-S (Boer, Haaven, Lambrick, Lindsay, McVilly, and Sakdalan, personal communication), using both file and interview-based sources of information.

### **Normative Data**

One of the core elements of any psychological test is the development of normative data against which to compare individual performance (Rosenfeld, Edens, &

Lowmaster, 2011). The ARMIDILIO-S is a new assessment tool and has yet to develop adequate normative data. Based on this, and the exploratory nature of this study, the generalisation of any findings will be limited to groups of male ID sex offenders that match the characteristics and treatment pathways of the study sample (see page 10).

### **Hypotheses**

Related to the above, and based on the existing research, it was hypothesised that:

- 1a: ID men who display further sexually inappropriate behaviour during a follow-up period (recidivists) will have scored significantly higher on the ARMIDILO-S risk scales (see appendix 13) compared with the rest of the sample (non-recidivists).
- 1b. There will be a significant relationship between the 26 individual risk items on the ARMIDILO-S and further sexually inappropriate behaviour.
2. The ARMIDILO-S will show good predictive accuracy ( $AUC > 0.80$ )
3. The ARMIDILO-S scales will show better predictive accuracy than an actuarial assessment of risk.

## **Method**

### **Participants**

The participants were recruited from a database of male ID sex offenders that had previously attended group treatment designed by the Sex Offender Treatment Services Collaborative - ID (SOTSEC-ID) (SOTSEC-ID, 2010). This treatment programme has been adopted by a number of NHS and private ID services across the UK.

### **Inclusion criteria.**

All participants had completed the SOTSEC-ID programme, and had met the inclusion criteria for the treatment group:

1. Participants must be aged between 18 and 60 years, have committed at least one act of sexually abusive behaviour, and have been associated with intellectual disability services, at some stage in their lives.
2. They must have a Full Scale IQ in the mild or borderline range
3. Clients could be drawn from a number of places including community intellectual disability services, health or social services, or probation services, or secure settings.

A common problem encountered when researching ID offenders is the range of interchangeable terms used to describe individuals, or groups of individuals with ID (Craig, Lindsay, Browne, 2010) (e.g. 'learning disability', 'developmental disability', 'learning difficulties', 'intellectual disability' and 'mental retardation'). For the purpose of this study the term 'intellectual disability' will be used, based on the following definition:

A significantly reduced ability to understand new or complex information and to learn new skills (impaired intelligence), a reduced ability to cope independently (impaired

functioning), all arising before adulthood (under 18 years of age) and having a lasting effect on development (Department of Health, 2001, p.14).

It was not possible to undertake a cognitive assessment with each participant and therefore the above definition was applied on the basis of that individual being under the supervision of an NHS, or private, intellectual disability service.

### **Exclusion criteria.**

The exclusion criteria for the original programme, (and therefore this study) were men considered too disabled to be offered CBT and men whose index offence did not meet the following SOTSEC-ID (2010) definition:

Any sexually related behaviour for which the other person was not consenting (including unable to consent), and the behaviour would be defined as illegal within the jurisdiction in which it occurred (Murphy & Sinclair, 2009).

Men were also excluded from this study if they were no longer in receipt of any supervision or care from legal, NHS or other support services, as this is important to the assessment of the environmental factors on the ARMIDLO-S.

### **The sample.**

Through the SOTSEC-ID quarterly meeting eight treatment providers were chosen as research sites. This was an opportunistic sampling process based on geographical location. Collectively, the chosen locations suggested an estimated sample of 60 participants. The final sample for this study was 16 male ID sex offenders (demographic details are provided in Table 3). 15 of the sample were interviewed, and

their ‘key worker’ was interviewed separately. Only one of the final sample declined an interview, but gave consent for their ‘key worker’ to take part (see Procedure section, page 15). The process of attrition is displayed in Table 2.

Table 2. Attrition from sample

Sample Source (N)	Total Sample Size
<b>NHS site A (10)</b>	60
<b>NHS site B (10)</b>	
<b>NHS site C (8)</b>	
<b>NHS site D (10)</b>	↓
<b>NHS site E (4)</b>	
<b>NHS site F (10)</b>	↓
<b>Private Service A (5)</b>	
<b>Private Service B (3)</b>	
<b>NHS site F</b> dropped out as their preparation had highlighted that their sample were no longer under any form of supervision (-10)	50 ↓
<b>NHS sites A and B</b> dropped out due to unforeseen circumstances (-20)	30 ↓
<b>NHS site C</b> had participants that did not consent (-3)	27 ↓
<b>NHS site D</b> had participants that did not consent or failed to respond following contact (-5)	22 ↓
<b>NHS site E</b> had no response from key workers or participants care homes (-3)	19 ↓
<b>Private Service A</b> had three care homes decline to take part (-3)	16

Table 3. Participant Details

	ID Sex Offenders n (%)
<b>Type of residence</b>	
Residential Home	8 (50)
Own Flat	4 (25)
Inpatient	3 (19)
With Family	1 (6)
<b>Index Offence</b>	
Allegations/threat to offend	1 (6)
Internet	1 (6)
Voyeurism	1 (6)
Exposure	2 (12)
Grooming	1 (6)
Inappropriate touching of others	4 (25)
Indecent assault	5 (32)
Other	1 (6)

### Design

This was an exploratory validation study using a longitudinal cohort design. The purpose of this study was to explore the criterion validity of the ARMIDILO-S risk assessment tool and compare this with an actuarial assessment measure (STATIC-99). The study also explored the internal consistency and inter-rater reliability of the ARMIDILO-S.

## Measures

Assessment of Risk Manageability for Intellectually Disabled Individuals who Offend-Sexual (ARMIDILO-S; Boer et al. 2010, unpublished)

The ARMIDILO-S is a structured risk assessment and management guideline instrument currently under development. It is intended for use with adult male ID individuals for whom there are concerns regarding sexually abusive behaviour which may or may not have been subject to a criminal investigation. The current version of the ARMIDILO-S incorporates 26 items to assess the risk and risk manageability of ID sex offenders. These items are divided into stable and acute dynamic risk factors. Both groups are then further divided into the following four subscales:

- 1) Stable Client Items (supervision and treatment compliance, sexual deviance and preoccupation, offence management, emotional coping ability, relationships, impulsivity, unique considerations).
- 2) Stable Environmental Items (staff attitude towards ID client, communication among support staff, client specific knowledge by support staff, consistency of supervision, unique considerations).
- 3) Acute Client Items (changes in compliance with supervision and/or treatment, changes in sexual preoccupation, changes in emotional coping, changes in use of coping strategies, changes to unique considerations).
- 4) Acute Environmental Items (change in relationships, change in monitoring, situational changes, changes in victim access, unique considerations).

All items are scored on a three point scales, providing a risk rating (N= not a problem, S= somewhat of a problem and Y= definitely a problem). The analysis in this study is based on the summed total of each subscale and the overall risk total.

Static-99 (Hanson & Thornton, 2000)

The Static-99 is a ten item actuarial assessment tool for use with adult male sex offenders (see appendix 14). It contains four broad categories associated with increased likelihood of further sexually harmful behaviour; sexual deviance; range of potential victims; persistent sexual offending; and anti-social behaviour. It is scored dichotomously (1=present, and 0= absent) which translates into four risk categories of low, medium low, medium high, and high risk (Craig, Thornton, Beech & Browne, 2007). In terms of its predictive validity, Hanson and Thornton (2000) reported the Static-99 as having an average AUC for the prediction of sexual recidivism, in cross validation samples, of 0.71. A number of other studies have also shown the Static-99 to have reasonable to good levels of predictive accuracy for sexual recidivism, reporting AUC analysis from 0.63 to 0.96 (Beech, Craig, Browne, 2009). The best predictive accuracy found for the Static-99 is a AUC of 0.92 (Craig, Browne & Beech, 2008). The Static-99 has also shown good inter-rater reliability ranging between 0.80 and 0.96 (Barbree et al., 2001; Hanson et al., 2002). This study used the Static-99 as previous research suggests that this is the most accurate of the tools and it can be used with ID sex offenders (Wilcox et al. 2009; Lindsay et al. 2008).

## **Procedure**

Participants were introduced to this study by their treatment provider. This method was chosen so that briefing and consent (see appendix 5) was discussed with someone the participant knew and felt comfortable with, in order to avoid them acquiescing.



Each treatment provider communicated to the researcher the details of those who consented, and together they arranged the time and location of the following stages:

Stage 1: A review of the participant's file and an interview with their 'key worker' (this refers to the main professional providing support or supervision). The ARMIDILO-S provides a semi-structured staff interview schedule based on 26 risk items (see appendix 11). All staff were provided with an information sheet explaining the study and asked to sign a consent form (see appendix 6). Staff interviews were carried out at their place of work or via the telephone. The information collected was also used to complete a Static-99 for each participant.

Stage 2: A participant interview. The ARMIDILO-S manual states that an interview of the client is not always possible. It recommends that assessors do not attempt to write a risk report based on a client interview, without having read the file or interviewing the relevant staff members. It suggests that Stage One activities are critical and the client interview is optional, if necessary. Participants were given the option to consent to Stage One, but to decline the client interview if they wished. The lead author of the ARMIDILO-S suggested using the semi-structured client interview schedule (see appendix 10) from the original ARMIDILO, based on the original 30 items (Boer, Tough & Haaven, 2004).

Stage 3: Scoring. The information gathered in Stage One and Two was analysed to provide a risk score for each of the 26 items on the ARMIDILO-S. These scores were summed to provide a total for each subscale and the overall risk.

Stage 4: Follow-up data. All of the participants were followed-up after a period of one to six months. The follow-up periods were affected by the time for each site

specific R&D application, the time the treatment provider took to provide the details of their consenting sample, and the organisation of the interview. Given the time constraints of this study, the quicker the process was the longer the follow-up period. At each follow-up the 'key worker' provided any reports of sexually inappropriate behaviour since the completion of Stage One.

According to Murphy and Sinclair (2009), not all ID sex offenders have been convicted of an offence; the behaviour has either gone unreported, or the case has not proceeded through the criminal justice system. Therefore the definition of sexually inappropriate behaviour is important for any outcome measure. For the purpose of this study follow-up data were not purely based on arrests and convictions; they included any form of inappropriate sexual behaviour, witnessed by staff or reported by reliable sources such as police or probation. This could range from risky behaviours (e.g. hanging around schools) to the more severe (e.g. rape). Previous studies have referred to this type of recidivism as any offence related behaviour, either legal or illegal, with a clear sexual motivation (Blacker et al.2010; Falshaw, Friendship, & Bates, 2003).

### **Data Analysis**

Scores on the different scales within the ARMIDILO-S and the STATIC -99 (see appendix 13) were analysed as independent (predictor) variables. The dependent variable was the presence of any further sexually inappropriate behaviour during the follow-up period. This variable grouping was reversed for some of the basic bivariate methods of analysis.

## Results

The purpose of this study was to explore the validity and reliability of the ARMIDILO-S risk assessment tool. It was hypothesised that further displays of sexually inappropriate behaviour would be related to higher scores on the ARMIDILO-S, and therefore the ARMIDILO-S would show good predictive accuracy and perform better when compared with an actuarial assessment tool (STATIC-99). The final sample (n=16) was too small to produce the 80% acceptable level of statistical power (Howitt & Cramer, 2011) required for any multivariate analysis. Therefore the data was explored using basic bivariate statistics to analyse trends in observed frequencies between those that did and did not commit further sexually inappropriate behaviour.

### Descriptive Statistics

Table 4 shows that the mean age for the sample (n=16) was 36 (M=36.44, SD=12.30). The means for all the ARMIDILO-S scales, including the total (M = 7.50, SD = 3.93), were lower than the median scores of each scale. The mean on the STATIC-99 tool was also low (4.56), considering its possible range of scores.

Table 4: Descriptive Statistics for all Scales Measured

	Total Sample (N=16)				
	N	Mean	Max Score	Range	Standard Deviation
<b>Age</b>	16	36.44	n/a	20-67	12.30
<b>ARMIDILO-S (Dynamic Risk Tool)</b>					
Stable Client Items Total	16	6.19	20	0-13	3.87
Acute Client Items Total	16	0.06	12	0-1	0.25
Client Items Total	16	6.25	32	0-12	3.77
Stable Environment Items Total	16	1.25	10	0-3	0.86
Acute Environment Items Total	16	0.00	10	0	0.00
Environment Items Total	16	1.25	20	0-3	0.86
Stable Items Total	16	7.50	30	0-13	4.00
Acute Items Total	16	0.06	22	0-1	0.25
ARMIDILO Total Score	16	7.50	52	0-12	3.93
<b>Actuarial Risk Tool</b>					
STATIC-99 Total Score	16	4.56	12	1-6	1.50

### Further Sexually Inappropriate Behaviour

The details of sexually inappropriate behaviour during follow-up are summarised in Table 5. This shows that 5 (31.2%) of the sample displayed recidivism during the six month follow-up. This was mainly non-contact, directed at female victims of both child and adult age.

Table 5. Descriptive summary of follow up sexually abusive behaviour

ID sex offender recidivists (n=5)				
	Type of Behaviour	Victim sex	Victim age group	Follow up Months
1	Sexually aroused whilst preoccupied with children.	Male/Female	Children	1
2	Exposure of genitals	Female	Adult	4
3	Inappropriate touching and targeting of staff	Female	Adult	6
4	Rubbing of genitals whilst watching images	Male/Female	Child images	5
5	Masturbating in public	Female	Children/Adults	5

In terms of descriptive statistics, Table 6 shows that the mean age of recidivists was lower than those that had not shown recidivistic behaviour in the six month follow-up period. The mean ARMIDILO-S total score was also higher for those men who had committed further sexually inappropriate behaviour. The recidivist group also scored higher on the Stable Items scale, Clients Items scale, and those items that were both stable and client specific. In terms of actuarial risk, this group also scored higher on the STATIC-99.

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Table 6. Descriptive Statistics – Recidivists versus Non Recidivists

	Recidivists (N=5)				Non Recidivists (N=11)			
	Mean	Max Score	Range	Standard Deviation	Mean	Max Score	Range	Standard Deviation
<b>Age</b>	28.20	n/a	20-34	5.26	40.70	n/a	25-67	12.91
<b>Follow Up Period (months)</b>	5.00	5	1-5	1.73	3.64	5	1-6	2.34
<b>ARMIDILO-S (Dynamic Risk Tool)</b>								
Stable Client Items Total	9.80	20	0-10	3.90	4.55	20	0-10	2.62
Acute Client Items Total	0.00	12	0	0.00	0.09	12	0-1	0.30
Client Items Total	9.80	32	0-10	3.90	4.64	32	0-9	2.46
Stable Environment Items Total	1.00	10	0-2	0.71	1.36	10	0-3	0.92
Acute Environment Items Total	0.00	10	0	0.00	0.00	10	0	0.00
Environment Items Total	1.00	20	0-2	0.71	1.36	20	0-3	0.92
Stable Items Total	10.80	30	0-11	4.44	6.00	30	0-10	2.86
Acute Items Total	0.00	22	0	0.00	0.09	22	0-1	0.30
ARMIDILO Total Score	10.80	52	0-11	4.44	6.00	52	0-9	2.72
<b>Actuarial Risk Tool</b>								
STATIC-99 Total Score	5.60	12	5-6	0.55	4.09	12	1-6	1.57

## **Reliability**

As the ARMIDILO-S is a clinician rated instrument, data relating to three (18%) participants were rated by a Clinical Psychologist (working with ID clients) to allow for an estimation of inter-rater reliability. Due to the limited availability of other professionals, the rest of the sample was assessed by a single rater. Inter-rater reliability is typically achieved using kappa coefficients that correct for chance responding (Rosenfeld, Edens, & Lowmaster, 2011). Kappa between the two raters was 1.0 ( $K=1.0$ ;  $p<0.08$ ), which indicates a high level of agreement (Howitt & Cramer, 2011). Internal consistency was also measured to explore whether this instrument can quantify the extent to which the construct of sexual risk is present. This was tested using Cronbach's Alpha (Clark-Carter, 2010). The alpha reliability of the ten item Stable Client scale was 0.72 (see Table 7), indicating that this was the only scale that showed satisfactory reliability ( $\alpha>0.70$ ) (Howitt & Cramer, 2011). The Client Items ( $\alpha=0.67$ ), Stable Items ( $\alpha=0.60$ ) and the ARMIDILO-S total scale ( $\alpha=0.60$ ), all fell below the expected level of reliability. All the scales relating to the Environment risk items were not analysed due to a lack of variance created by all participants scoring the exact same score, resulting in no difference, variability or standard deviation.

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Table 7. Cronbach's Alpha for ARMDILO-S

Scales	Alpha
Stable Client Items Total	.72
Acute Client Items Total	.00
Client Items Total	.67
Stable Environment Items Total	**
Acute Environment Items Total	**
Environment Items Total	**
Stable Items Total	.65
Acute Items Total	.00
ARMIDILO Total Score	.60

\*\* Not measured due to lack of variance

### Hypothesis One (A)

This stated that ID men who display further sexually inappropriate behaviour will have scored significantly higher on the ARMDILO-S compared with the rest of the sample. Due to the study's small sample and statistical power, this hypothesis was tested using bivariate analysis. The distribution of the independent variables was checked using the Shapiro-Wilk test of normality (Field, 2000).

### T-Test

Looking at the eleven variables tested, five were normally distributed and met the assumptions of a parametric independent sample t-test (see Table 8). Scores were significantly higher on the ARMDILO-S risk total for those that went on to display further sexually inappropriate behaviour ( $M = 10.80$ ,  $SD = 4.44$ ), than for those who



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did not ( $M = 6.00$ ,  $SD = 2.72$ ),  $t(14) = -2.69$ , one-tailed  $p < .001$ ,  $d = 1.76$ . Scores on the Stable Items were also found to be significantly higher for recidivists ( $M = 10.80$ ,  $SD = 4.44$ ) than non-recidivists ( $M = 6.00$ ,  $SD = 2.86$ ),  $t(14) = -2.63$ , one-tailed  $p < .001$ ,  $d = 1.68$ . Equally, scores on the Client Items were significantly higher for those who had displayed sexually inappropriate behaviour ( $M = 9.80$ ,  $SD = 3.90$ ) when compared with those who had not ( $M = 4.64$ ,  $SD = 2.46$ ),  $t(14) = -3.25$ , one-tailed  $p < .001$ ,  $d = 2.10$ . Finally, the recidivist sample ( $M = 9.80$ ,  $SD = 3.90$ ) also scored significantly higher on Stable Client Items than the non-recidivist sample ( $M = 4.55$ ,  $SD = 2.62$ ),  $t(14) = -3.20$ , one tailed  $p < .001$ ,  $d = 2.00$ . This analysis also found that the men who went on to commit further sexually inappropriate behaviour ( $M = 28.20$ ,  $SD = 5.26$ ) were significantly younger than those who did not ( $M = 40.78$ ,  $SD = 12.91$ ),  $t(14) = -1.97$ , one tailed  $p < .05$ ,  $d = 2.00$ .

Table 8. T-tests for further inappropriate sexual behaviour

Scales	Further Sexual Behaviour (Mean)		t	df
	Recidivists	Non- Recidivists		
Age	28.20	40.70	-1.97*	14
ARMIDILO Total Score	10.80	6.00	-2.69**	14
Client Items Total	9.80	4.64	-3.25**	14
Stable Items Total	10.80	6.00	-2.63**	14
Stable Client Items Total	9.80	4.64	-3.20**	14

Note. \* =  $p \leq 0.05$ , \*\* =  $p \leq 0.01$

### Mann-Whitney U test

Some researchers would regard analysing the ARMIDILO-S Likert-type categories using interval level data as illegitimate. According to Knapp (1990) this represents an unresolved controversy regarding the use of traditional descriptive and inferential

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statistics for ordinal-level variables. The above t-tests and inferential statistics were included based on Knapp's (1990) argument that sample size and distribution are more important than level of measurement in determining whether it is appropriate to use parametric statistics (Jamieson, 2004). However, as this argument appears to be unresolved, 9 of the 11 variables were also compared using the non-parametric Mann-Whitney U test for ordinal level data.

Table 9. Mann-Whitney U for further inappropriate sexual behaviour

Scales	Further Sexual Behaviour (Mean Rank)		U
	Recidivists	Non-Recidivists	
Stable Client Items Total	12.30	6.77	8.5*
Acute Client Items Total	8.00	8.73	25.0
Client Items Total	12.30	6.77	8.5*
Stable Environment Items Total	7.50	8.95	22.5
Environment Items Total	7.50	8.95	22.5
Stable Items Total	12.10	6.86	9.5*
Acute Items Total	8.00	8.73	25.0
ARMIDILO Total Score	12.10	6.86	9.5*
Static-99	11.80	7.00	11.0

Note. \*=  $p \leq 0.05$

The four scales of the ARMDILO-S that were analysed as interval level data still showed significant difference when analysed as ordinal levels of measurement. This test found no significant differences between the scores of the recidivist and non-recidivist group on the Stable Environment Items, Environment Items, Acute Client Items, the Acute Items, or the STATIC-99.

**Hypothesis One (B)**

This stated that there would be a significant relationship between the 26 risk items on the ARMIDILO-S and further sexually inappropriate behaviour. A chi-square analysis was used to measure the association between each of the individual items and sexually inappropriate behaviour. This analysis compares dichotomous variables therefore each risk item was transformed from 'low', 'medium' or 'high' to 'risk' (based on a score of medium or high) or 'no risk' (based on a score of low risk). Chi squared was selected due to the data not meeting parametric assumptions (Clark-Carter, 2010). The analysis found no significant relationships for 25 of the items. Men who did go on to display this behaviour were however significantly more likely to demonstrate risk on the 'Relationships' item (ability to develop and maintain interpersonal relationships), one tailed Fisher exact  $p=.005$ .

**Hypothesis Two**

This stated that the ARMIDILO-S would show good predictive accuracy. One method of analysing risk classification is to compare the predictions with actual outcomes using a 2 x 2 contingency table (Craig, Beech, & Browne, 2007). Table 10 is a contingency table used for predictive studies using a cohort design (Craig, Beech, & Browne, 2007). None of the men were classified as high risk on the ARMIDILO-S. Therefore the prediction variable was valued as 'low' or 'moderate'. The positive predictive accuracy ( $A/(A+B)$ ): the percentage of the moderate risk group who 're-offended') was 55%. The negative predictive accuracy ( $D/(C+D)$ ): the percentage of the low risk group that did not 're-offend') was 100%. The sensitivity of the ARMIDILO-S ( $A/(A+C)$ ): percentage of 're-offenders' who were correctly identified as moderate risk) was 100%, and the specificity ( $D/(B+D)$ ): percentage of 'non-re-

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offenders' who were correctly identified as low risk) was 64% (Craig, Beech, & Browne, 2007).

Table 10. Predictive contingency table for ARMIDILO-S

Prediction		Outcome	
		Re-offenders	Non Re-Offenders
ARMIDILO-S	<b>Moderate Risk</b>	(A) True Positive = 5	(B) False Positive= 4
	<b>Low Risk</b>	(C) False Negative = 0	(D) True Negative= 7

### AUC analysis

Forensic risk assessment literature suggests that the predictive accuracy of an assessment is best indexed through the AUC statistic (Wilcox et al., 2009; Beech, Fisher & Thornton, 2003). The output score ranges from 0-0.5 (no predictive accuracy) to 1.0 (perfect accuracy). The required sample size for this analysis was calculated using MedCalc 12 (MedCalc, 2011). Table 11 shows the output produced by entering the hypothesised AUC and the AUC required to accept the null hypothesis.

Table 11. AUC required samples (MedCalc, 2011)

Type II error ( $\beta$ -level) probability		Type I error ( $\alpha$ -level) probability			
		<b>0.20</b>	<b>0.10</b>	<b>0.05</b>	<b>0.01</b>
<b>0.20</b>	11	16	20	30	
<b>0.10</b>	16	21	26	37	
<b>0.05</b>	20	26	31	44	
<b>0.01</b>	29	36	43	57	

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Some medical journals suggest that moderate accuracy can be considered at 0.75, and that high accuracy should be set at 0.90 (Obuchowski, 2000). In recent forensic psychology literature, AUCs in excess of 0.80 are considered to represent good predictive accuracy (Rosenfeld, Edens, & Lowmaster, 2011). The hypothesised AUC for the ARMIDILO-S was 0.85, based on the above references and the findings of Blacker, et al. (2010). The null hypothesis AUC was 0.50. Table 11 shows that a sample size of 44 to 57 would significantly lower the probability of both Type I and Type II errors. Although the final sample size is lower, and therefore there is an increased level of probability that error will occur, because the AUC statistic reflects an effect size, the magnitude of the coefficient is considered more important than the statistical significance (which is dependent on sample size) (Rosenfeld, Edens, & Lowmaster, 2011). On this basis, and due to the exploratory nature of this study, the AUC analysis was carried out on the ARMIDILO-S and STATIC-99.

The ARMDILO-S total rating had an AUC of 0.83 ( $p < 0.05$ ). The Stable Client Items had an AUC of 0.85 ( $p < 0.05$ ), the Client Items total was 0.86 ( $p < 0.05$ ), and the AUC for the Stable items total was 0.83 ( $p < 0.05$ ). The other scales within the ARMDILO-S failed to show any predictive accuracy (Table 12).

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Table 12. AUC statistics

Scales	ID sex offender sample (n=16)		
	AUC	SE	95% CI
Stable Client Items Total	.85*	.14	0.00-1.00
Acute Client Items Total	.46	.16	0.15-0.76
Client Items Total	.86*	.14	0.00-1.00
Stable Environment Items Total	.41	.16	0.11-.071
Acute Environment Items Total	.50	.16	0.19-0.82
Environment Items Total	.41	.16	0.10-0.71
Stable Items Total	.83*	.16	0.00-1.00
Acute Items Total	.46	.16	0.15-0.76
ARMIDILO Total Score	.83*	.16	0.00-1.00
STATIC-99 Total Score	.80	.14	0.48-0.99

Note. \*= $\leq 0.05$

### Hypothesis Three

This stated that the ARMIDILO-S scales would show better predictive accuracy than an actuarial assessment, in this case the STATIC-99.

Table 13. Predictive contingency table for STATIC-99

Prediction		Outcome	
		Re-offenders	Non Re-Offenders
STATIC-99	<b>High Risk</b>	(A) True Positive = 5	(B) False Positive= 6
	<b>Low Risk</b>	(C) False Negative = 0	(D) True Negative= 5

In the final sample 69% (n=11) were rated high risk. The positive predictive accuracy was 45% (ARMIDILO-S=55%) and the negative predictive accuracy was 100% (ARMIDILO-S=100%). The sensitivity of the ARMIDILO-S and the STATIC-99 was 100%, whilst the specificity of the STATIC 99 was 45% (ARMIDILO-S=64%) (Craig, Beech, & Browne, 2007). Finally, The STATIC-99 had an AUC of 0.80.

## **Discussion**

### **Aims**

The aim of this study was to contribute to the validation process of the ARMIDILO-S. Blacker et al. (2010) is the only published paper to have assessed the predictive accuracy of the ARMIDILO and it showed promising results. However, the retrospective design of their study limited the analysis to file based data and only two of the ARMIDILO's four scales. The aim of this study was to explore the criterion validity of the ARMIDILO-S using an exploratory longitudinal cohort design, and compare this with an actuarial assessment measure, using both file and interview methods of data collection.

### **Follow-up Sexually Inappropriate Behaviour**

The findings were based on 16 ID offenders who had been through a sex offender treatment programme. In terms of recidivism, 31.2% (n=5) of the sample committed further sexually inappropriate behaviour during follow-up. Previous studies with SOTSEC-ID participants have shown recidivism rates between 15% and 35%

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(SOTSEC-ID, 2010). This is similar to findings by Kilmecki, Jenkinson and Wilson (1994), who reported a rate of 34% in an ID offender sample. Therefore, it could be estimated that the base rate of ID sex offender recidivism is between 30% and 35%.

**Predictive Validity of the ARMDILO-S**

Instruments designed to quantify risk should demonstrate predictive validity through correctly predicting future behaviour related to the criterion under investigation (Rosenfeld, Edens, & Lowmaster, 2011). Recent literature suggests that AUCs in excess of 0.80 are considered good predictive accuracy (Rosenfeld, Edens, & Lowmaster, 2011). Therefore, in support of hypothesis two, the results suggest that the ARMDILO-S risk total (0.83), Stable Items (0.83), Client Items (0.86) and Stable Client Items (0.85) all show good predictive accuracy, while the five remaining scales reported a predictive accuracy of less than chance ( $\leq 0.50$ ).

The low levels of prediction for these five scales maybe due to the increased probability of Type I and Type II errors, as a result of the small sample, or simply because they are not predictive of risk. However, it may also be due the lack of variance in these acute and environmental risk scores. It was clear throughout the interview process that nearly all participants had a secure support structure. With long term residential placements and key workers, most of the sample scored 'no risk' on all of the Environmental and Acute items, significantly reducing their overall score. This supports Boer, Mcvilly and Lambrick's (2007) suggestion that risk posed by the environment should be assessed separately from that posed by the individual. According to Boer et al. (2007), due to their intellectual impairment, ID offenders are more likely to be dependent on the structure and support in their immediate



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environment, and consequently these variables are highly relevant in obtaining an overall assessment of risk.

The predictive contingency tables allowed for further exploration of predictive accuracy. For the ARMIDILO-S, hypothesis two could be supported by the instrument's negative predictive accuracy (100%: Percentage of the low risk group that did not re-offend) and its level of sensitivity (100%: Percentage of 're-offenders' who were correctly identified). However, this needs to be interpreted with caution. Table 10 clearly shows a number of false positives (n=4) that have affected the specificity (64%) and positive predictive accuracy (55%).

#### **Construct Validity of the ARMIDILO-S**

Given that the ARMIDILO-S was developed based on previous theory and investigation (Boer et al., 2004), its level of construct validity, though not directly analysed, has been thought about in relation to hypothesis one and two. Hypothesis 1a stated that ID men who displayed sexually inappropriate behaviour during follow-up, will have significantly higher scores on the ARMIDILO-S risk scales. The results found that scores were significantly higher for this group on the Stable Items, Client Items and Stable Client Items, as well as the Risk Total. These results indicate that the ARMIDILO-S may be assessing the construct of ID sex offending. Conversely, no significant difference was found on the remaining scales. This is possibly due to the lack of variance on the acute and environmental risk scores. The construct validity of the ARMIDILO-S was further explored by hypothesising that there would be a significant relationship between each of the 26 items and recidivism (hypothesis 1b). However, only one significant relationship was found. The men who committed further sexually inappropriate behaviour were significantly more likely to demonstrate risk on the 'Relationships' item. These results suggest that the ARMIDILO-S may

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actually have limited validity when it comes to assessing the construct of ID sex offending.

Finally, a scale that is developed to quantify the extent to which a construct is present should demonstrate internal consistency (Rosenfeld, Edens, & Lowmaster, 2011). The Stable Client scale was the only one found to show satisfactory consistency. Therefore, despite some significantly high scores in relation to ID men that display further sexual behaviour, it is important that these results are interpreted with caution, due to the ARMIDILO-S's apparent low level of construct validity.

#### **Dynamic versus Actuarial Risk Assessment**

Blacker et al. (2010) demonstrated that dynamic risk factors seem to be better indicators of risk with an ID sex offender population than earlier actuarial tools. Therefore, it was hypothesised that the ARMIDILO-S scales would show better predictive accuracy than the STATIC-99 actuarial assessment. The results found that the STATIC-99 had an AUC of 0.80. Although this was not statistically significant, it was similar to the value of the ARMIDILO-S risk total (0.83), and equally considered a 'good' level of predictive accuracy (Rosenfeld, Edens, & Lowmaster, 2011). The contingency table for the STATIC-99 (see table 13), shows that the actuarial assessment was equal to the ARMIDILO-S in terms of sensitivity and negative predictive accuracy (100%). Conversely, due to a higher count of false positives, it was weaker on specificity and positive predictive accuracy (45%). Based on these results it can be argued that there is minimal difference between these two forms of assessment.

Despite these findings, it is important to highlight that by being static, actuarial measures are still generally insensitive to any changes in risk over time and do not

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take into account the effectiveness of treatment, supervision and other dynamic factors (Harris & Tough, 2004). Even Hanson and Thornton (2000), the authors of the Static-99, stated that given the absence of dynamic factors, this actuarial tool is not suitable to select treatment targets, to be a measure of change, or predict when a sex offender is likely to reoffend. Therefore, despite the minimal difference found between these approaches, it is the lack of a qualitative risk profile from actuarial assessments that strongly supports the rationale behind the development and continued exploration of the ARMIDILO-S. After all, its aim is to provide a new convergent approach to risk assessment, where actuarial instruments provide the baseline, while the dynamic factors ensure that the appropriate variables are assessed in relation to change in risk. What we can conclude from these results is that the STATIC-99 appears to be an accurate baseline measure of sexual offending within an ID population, as suggested in previous research (Lindsay et al., 2008; Wilcox et al., 2009).

#### **Limitations of Study**

Although the aim of this study was mainly exploratory, the reliability of the findings is limited by the final sample (n=16). It was not possible to apply any multi-variate parametric testing to the relationship between the subscales and further offending. Therefore, whilst the results of this study offer an indication of the effectiveness of the ARMIDILO-S, no overall generalisations can be made. However, it is important to consider this limitation in the context of the surrounding literature. Many published studies in this area are of an exploratory nature and report sample size as a limitation, indicating the need for further research (Broxholme & Lindsay, 2003; Hayes, 2009; Lindsay, Elliot, & Astell, 2004; Lindsay & Smith, 1998; Murphy et al., 2007; Parry & Lindsay, 2003). For example, in terms of the ARMIDILO-S, Blacker et al. (2010)

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also struggled with their final ID sample (n=10). It was also important in this study for participants to give their consent, and as a result many refused. Murphy et al. (2007) suggest that a number of studies in this field have not sought consent, on the basis of the participant's offending behaviour. They strongly argue that all ID offenders should have the right to consent, however much this may limit research findings.

Another potential limitation of this study was its short and variable follow-up period. The mainstream sex offending literature suggests that re-offending rates increase with period of follow-up. Marshall and Barabee (1988), found that for offenders followed up for less than two years, there was only an 8.8% reoffending rate. However, in an ID sample Klimecki et al. (1994) found that 84% of recidivism happened within a 12 month follow up period. This may suggest that the patterns of ID offender recidivism are uniquely different to the mainstream offender population. Nevertheless, this study would have clearly benefited from a longer follow up period.

Finally, the ability to make generalisations with regards to this study is also affected by the absence of normative data in relation to what the ARMDILO-S is trying to measure. Based on this, and the exploratory nature of the study, generalisation of these findings is limited to groups of male ID sex offenders that match the characteristics and treatment pathways of the sample investigated. Given the aims of this study, this is quite a significant limitation, as validity is not simply a 'static' property of a test, but a reflection of the extent to which inferences drawn from the scores are useful and accurate (Rosenfeld, Edens, & Lowmaster, 2011). The scores reported here are therefore only useful as an indication of the potential accuracy of the ARMIDILO-S.

### **Theories of ID Sex Offending**

Although the scale of this study is too small to allow generalisations, it does offer some indications for the continuing development of theory. Craig and Lindsay (2010) identify Counterfeit Deviance, Tendencies towards Sexual Offending, Sexual Abuse, Personality and Impulsivity, and Mental Illness, as the main hypotheses for explaining sexual offending in people with ID. In terms of Counterfeit Deviance, it is difficult to reach any conclusions. All five recidivists committed what, on face value, seemed to be deviant sexual behaviour, and scored significantly high ( $p < 0.05$ ) on the 'sexual drive' item of the ARMIDILO-S. However, it remains difficult to measure the effect of precipitating factors such as poor social skills or sexual naivety (Lindsay & Taylor, 2010). Therefore, an actual Tendency towards Sexual Offending should not be ruled out. Impulsivity highlights one of the main personality characteristics that had been singled out in a number of studies. (Caparulo, 1991; Craig & Lindsay, 2010; Hayes, 1991; Swartz & Masters, 1983). In this study, impulsivity was only a 'definite risk' in 31% of the sample. However, although the numbers were small, 60% of the recidivist group received a 'definite risk' score on the impulsivity risk item, indicating the potential importance of this factor. Conversely, there was no evidence to support the belief that ID sex offenders are likely to have a diagnosis of mental illness (Day, 1994; Lindsay et al., 2004).

### **Future Research**

The present study indicates that the ARMIDILO-S is worthy of further research into the validity and reliability of its application with ID sex offenders, for both clinical and research purposes. Although the study was able to use this tool fully as part of a

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longitudinal, exploratory cohort design, the findings have still been limited by the sample. Any further validation would benefit from a larger scale study and a greater follow-up period. However, whilst this may improve the ARMDILO-S's predictive validity, much more comprehensive analysis is required to explore the instrument's potential lack of construct validity. Therefore, future research should attempt to meet the criteria for methods such as factor analysis.

### **Conclusion**

This was an exploratory study aimed at contributing to the validation of the ARMDILO-S and its overall predictive accuracy. The findings were affected by a small sample and the absence of normative data, and therefore were limited in terms of generalisation. Nevertheless, there were indications in the results that with further research the ARMDILO-S could go on to show high levels of predictive validity when assessing the risk of ID sex offenders. However, the suggested low level of construct validity suggests that more in-depth investigation into the relationship between dynamic risk factors and a theoretical understanding of ID sex offending may be required.

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Oliver Sindall BSc Hons. MSc

**Major Research Project**

**SECTION C**  
**Critical Appraisal**

Word Count: 1,814  
(Excluding title page, abstract, and references)

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## **A Critical Appraisal**

This section provides reflections and critical discussions about the process of carrying out this project. The appraisal is structured around the following four questions:

### **What research skills and abilities have I developed from undertaking this project, and what do I think I need to learn further?**

The majority of my previous research experience has been based on team projects, and although I was supervised, this has been my first real experience of independently managing a research project. This has involved learning a number of lessons throughout the different stages of the research process. These have included selecting a feasible topic, writing a research proposal, recruiting participants, choosing an appropriate methodology, and using quantitative analysis. Although all these cannot be discussed fully, the following section reflects upon some of the lessons that I have found most salient.

Perhaps the most surprising lesson was around communication and engagement in a research context. As a final year trainee I felt that my communication skills, including communicating complex, technical and sensitive information to clients, families and colleagues, were excellent. However, in retrospect, the most challenging aspect was communicating and engaging with external teams and their staff. I was suddenly acutely aware that all my research experience to date had been 'in house', and although staff were often far removed from the research aims, there was always a feeling of working towards the same goal. Conversely, although the key contributors have been more than supportive during this process, the staff and teams working directly with participants have, sometimes, been difficult

to engage. This may have been due to a lack of interest, not seeing the relevance of the research or being overwhelmed with their own tasks. Negotiating these challenges has helped develop my communication abilities when it comes to recruiting participants, and to overcome my anxiety around irritating others, instead realising the need for constant open communication if projects are going to progress, especially within a tight timescale.

One of the advantages of a project requiring quantitative analysis was the opportunity to develop my ability in the applications of these methods. Although I have used quantitative methods before, I felt that this was my first real experience, in a major research project, of choosing the most appropriate method of analysis, and following that through to conclusion. On reflection this is still an area where there is further learning to be done. In just one project I have learnt how something as simple as an 'area under a curve' is the basis for an entire field of research. I hope to be increasingly involved in quantitative research and aim to further reduce my anxiety around statistical analysis that, like many psychologists, I have carried since my undergraduate degree.

**If I were able to do this project again, what would I do differently and why?**

Considering that this project had to be completed in the context of a clinical doctorate, which involved a limited time-scale and particular requirements, it would have been difficult to conduct this project in a completely different way. However, there are a number of aspects of the project that I would approach differently, especially given the reduced size of the final sample.

Based on the timescale and geographical spread of the sample, the project decided to focus on sites within the South East of England. If I were to undertake this project again, I would consider extending the sample population to all of the potential research sites. Although this would obviously increase travel time and expenses, it would also provide a larger recruitment pool, which could more effectively allow for the unforeseen attrition experienced during the project. Alternatively, the recruitment phase may have benefited from expanding the inclusion criteria to include all referrals to SOTSEC-ID treatment programmes, especially as offenders at the early stages are much more likely to be under supervision by probation and health care services, and are therefore less likely to be excluded from the study. Not only would this increase the sample size, but it would also allow for further analysis, including the effect of treatment on risk and recidivism with ID sex offenders.

In retrospect, I also feel that there was potential to widen the focus of the research. Although the aim of the study was to investigate the ARMIDILO-S, this investigation could have been strengthened further by comparing it with a number of other sex offender risk assessment tools. This had been done in a number of the studies reviewed throughout the literature (Craig, Browne & Stringer, 2003; Hanson, & Morton-Bourgon, 2009; Harris, Rice, Quinsey, Lalumiere, & Boer, 2003; Rettenberger, Matthes, Boer, & Eher, 2010) and could have further contributed to the development of risk assessment measures for ID sex offenders. However, it is not often that you are given the opportunity to work with widely respected authors in the validation process of a unique risk assessment tool, and in hindsight, this explains the specific focus of this study, along with the feasibility in the time available.

**As a consequence of doing this study, would I do anything different in my clinical work, and why?**

The difficulty with any potential clinical implications from this study, even if the required sample had been achieved, is that the results do not offer definite conclusions. Instead the findings offer a contribution to the ongoing debate over the theory and driving principles behind ID men who sexually offend. However, there are a number of things I have now taken in to consideration for any further work with both an ID and non-ID sex offender population.

Firstly, if Counterfeit Deviance (Hingsburger, Griffiths & Quinsey, 1991) is to be accepted as the theory behind ID offending, and if there is no sexual deviant fantasies or preoccupations involved, then should that change my approach to assessment? If poor social skills, sexual naivety, limited opportunities to establish relationships, and lack of sexual knowledge (Lindsay & Taylor, 2010) are responsible for sexual inappropriate behaviour, then how ethical is it to directly ask ID client about their fantasies, sexual preoccupations and whether they masturbate or not? However, whilst research into the similarity and differences between non-ID and ID sex offenders is still in its infancy, these are important risk factors to consider, and I feel that in future I would suggest a multi-disciplinary decision on how the client is involved in any risk assessment process. In fact, one way in which the ARMIDILO-S has changed from the original version is by classifying the staff interviews as ‘critical’, and the client interview as ‘optional’.

In relation to this idea, during the interviewing process it was clear from team conversations that individual staff can hold very different opinions of the same client. A limitation of this study could be that due to the time scale, it was only able to focus on one member of the participant's support team. This clearly has implications for any clinical risk assessments and provides another reason for suggesting that the team be included in the process, in order to avoid inaccurate risk levels and inappropriate levels of supervision.

Finally, while from a research perspective there needs to be an emphasis on the predictive value of any risk assessment tool, this study and the supporting literature review have shown me that, clinically, the focus actually needs to be on manageability. To illustrate this, Webster (2011), highlighted that although predictive accuracy does vary, we are never going to be able to accurately predict recidivism. Therefore, as a consequence of this study I have become more aware of the benefits of interpreting the qualitative client processes that each dynamic risk factor represents, as well as using this information in the formulation of treatment, monitoring and other manageability plans.

**If I were to undertake further research in this area what would that research project seek to answer and how would I go about doing it?**

I think this project itself could continue to be developed further using a similar methodology. Blacker et al. (2010) is to date the only published study that has researched the ARMIDILO. Therefore, this project was potentially the first attempt to analyse all four subscales on the ARMIDILO-S using a projective design and interview data. If I could, I would continue to be involved in any further projects that seek to answer questions about the empirical and



qualitative validity of this and other ID sex offender assessment tools. Further work could be done on a large scale, as both Blacker et al (2010) and this study, have been limited by a small sample size. Ideally, this would involve coordinating a national multi-site project as part of a UK wide, ARMIDILO-S empirical validation process.

In the development stage of this project, I initially thought about the prospect of running a factor analysis on the items of the ARMIDILO-S, as I have frequently seen this used in the development of questionnaires and assessments. There were two main reasons for not applying this method of analysis. The first, and perhaps most obvious, is the required sample size. I had remembered from my undergraduate research teaching that 300 was seen as a 'comfortable' number of cases (Tabachnick & Fidell, 1996), and this was clearly not feasible as part of a doctoral research project. Furthermore, it was also clear from the literature that Area Under the Curve was the dominant analysis by which risk assessment tools were compared. However, I am still unclear as to why other studies, in any of the literature, have not tried to use this method to answer the ongoing questions surrounding the application of risk factors to the assessment of ID offenders. I think if I had the opportunity to run a comprehensive, population specific factor analysis, this might add to the predictive capacity of assessment, and the understanding of the underlining principles behind ID sex offending.

### **Summary**

Although the process of undertaking a major research project has at times been both daunting and stressful, it has also provided me with an invaluable, and often steep, learning curve. As a qualified Clinical Psychologist, research will undoubtedly have to compete with other demands, but I feel that the past three years have provided a very real learning experience of

## CRITICAL APPRAISAL

how this is managed. I have learnt that although set backs are inevitable, much like any clinical formulation, research strategies can, and probably will, change throughout a project. Thus, strategies will therefore need to be re-worked, and this reworking must be justified and evidence based. This process has been helped by learning a lot more about the assumptions, and criteria for various forms of quantitative analysis and the experience of having to engage and communicate with external research sites. In conclusion, I feel a lot more equipped to continue researching and undertaking new projects in various forensic clinical settings, as this is still an under researched area, and one that I continue to be passionate about.

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Oliver Sindall BSc Hons. MSc

**Major Research Project**

**SECTION D**  
**Appendix of Supporting Material**

### Search Strategy for Section A Literature Review

Electronic database searches were conducted using CCCU Journals, PsychARTICLES, MEDLINE, PsychINFO, the Cochrane Library and the EBSCOhost Electronic Journal Service, and the following key search terms were used in multiple combinations:

<b>Category</b>	<b>Search Terms</b>	<b>Number of Results</b>
Intellectual Disability	Learning, Intellectual, intellectually, mental handicap, retard, retardation, developmental, disability, disabilities	43, 594
Sex Offending	Sex, sexual behaviour, offender, offences, offending, abuse	76,978
Risk Assessment	Assessment, risk, risk predictors, recidivism, reoffend, actuarial, dynamic, static, acute.	37,923
Sexual Reoffending	Recidivism, Reoffender, reoffending.	45, 830
Combination of Sex Offending & Risk Assessment		43, 141
Combination of Intellectual Disability and Sex Offending		17,566
Combination of Intellectual Disability and Risk Assessment		15, 957
Combination of Intellectual Disability and Sexual Offending Risk Assessment		17,846

Combination of Intellectual Disability and Reoffending		11,092
Intellectual Disability and Sexual Reoffending		17,896

The search terms were applied to all peer-reviewed journal articles and book chapters published in English between 1980 and March 2012. Using the largest ‘view per page’ function available in each database, the 17,896 titles were screened and only those related to this area of research were selected. This generated 52 titles and abstracts that were then read to confirm that each paper related empirically or theoretically to the scope of the review. There were 28 sources giving a general overview or looking at the characteristics of male intellectually disabled offenders, 7 focusing on intellectual disabled sex offenders and recidivism, and 17 looking specifically at risk assessment with this population. A manual search of the reference lists of the obtained papers was also conducted where the text in the main body of the paper referenced other sources relevant to the review. No specific exclusion criteria were used.

Other sources relevant to the review included the following key textbooks:

Beech, A.R., Craig, L.A., & Browne, K.D. (2009). *Assessment and treatment of sex offenders: A handbook*. Chichester. Wiley.

Craig, L.A., Browne, K.D., & Beech, A.R. (2008). *Assessing risk in sex offenders: A practitioners guide*. Chichester. Wiley.

Craig, L.A., Lindsay, W.R., & Browne, K.D. (2010). *Assessment and treatment of sexual offenders with intellectual disabilities: A handbook*. Chichester. Wiley.



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28 May 2010

Mr Oliver Sindall

Dear Mr Sindall

**Study Title:** The Assessment of Risk and Manageability for Intellectually Disabled Individuals who Offend Sexually (ARMIDILO-S)- A study of the first risk assessment tool for sex offenders with an intellectual disability

**REC reference number:** 10/H1101/17

**Protocol number:**

Thank you for your letter of 18 May 2010, responding to the Committee's request for further information on the above research and submitting revised documentation.

The Chair has considered the further information on behalf of the Committee.

**Confirmation of ethical opinion**

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

**Ethical review of research sites**

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

**Conditions of the favourable opinion**

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

For NHS research sites only, management permission for research ("R&D approval") should be obtained from the relevant care organisation(s) in accordance with NHS research governance arrangements. Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at <http://www.rdforum.nhs.uk>.



## Appendix 2

Where the only involvement of the NHS organisation is as a Participant Identification Centre, management permission for research is not required but the R&D office should be notified of the study. Guidance should be sought from the R&D office where necessary.

Sponsors are not required to notify the Committee of approvals from host organisations.

**It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).**

### Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document	Version	Date
Covering Letter		05 February 2010
REC application		10 February 2010
Protocol	1	05 February 2010
Investigator CV		05 February 2010
Letter from Sponsor		16 January 2010
Questionnaire: ARMIDILO-S Scoring Sheet		10 March 2009
CV for D C Salter		05 February 2010
CV for G Murphy		02 February 2010
Questionnaire: ARMIDILO - Staff Interview Questions		01 September 2008
Questionnaire: ARMIDILO - Client Interview Questions		01 September 2008
ARMIDILO Item Descriptions		01 September 2008
Participant Information Sheet: Actual sample - no recording	2a	30 April 2010
Participant Information Sheet: Pilot sample - recording	2b	30 April 2010
Participant Information Sheet: Key workers	2c	30 April 2010
Participant Consent Form: Actual sample - no recording	2a	30 April 2010
Participant Consent Form: Pilot sample - recording	2b	30 April 2010
Participant Consent Form: Key workers	2c	30 April 2010
Evidence of insurance or indemnity		
Response to Request for Further Information		03 May 2010
Covering Letter		18 May 2010
Participant Information Sheet	3c	18 May 2010
Participant Consent Form	3b	18 May 2010
Participant Consent Form: For Staff	3c	18 May 2010
Response to Request for Further Information		

### Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

## Appendix 2

### After ethical review

Now that you have completed the application process please visit the National Research Ethics Service website > After Review

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

The attached document "*After ethical review – guidance for researchers*" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Progress and safety reports
- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

We would also like to inform you that we consult regularly with stakeholders to improve our service. If you would like to join our Reference Group please email [referencegroup@nres.npsa.nhs.uk](mailto:referencegroup@nres.npsa.nhs.uk).

10/H1101/17

Please quote this number on all correspondence

Yours sincerely

pp   
Dr Ray Godfrey  
Chair

Email: [s.boland@nhs.net](mailto:s.boland@nhs.net)

Enclosures: "After ethical review – guidance for researchers"

## Appendix 3

Oliver Sindall  
Department of Applied Psychology  
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Tunbridge Wells Kent  
TN3 0TG

R&D Facilitator

Tel:  
Fax:  
Email:

07 February 2011

Dear Oliver

**Re: Armidilo-s: A study of the First Risk Assessment Tool for Intellectually Disabled Sex Offenders**

**Ref:**

**REC Ref: 10/H1101/17**

Thank you for submitting all the required documentation relating to the above study for Trust R&D approval.

I write to confirm that the study has full Trust approval. The approval granted relates only to the specific protocol v. 1, the attachments and the SSI form for this Trust as approved by the Research Ethics Service. Any deviation from these documents will be deemed to invalidate this approval. The study must be conducted according to the Department of Health Research Governance Framework for Health and Social Care at <http://www.dh.gov.uk>. All material accessed in the Trust must be treated in accordance with the Data Protection Act (1998), The NHS Code of Confidentiality and Caldicott Principals.

### **Responsibilities:**

Sites:

Permission is granted only for the xxxxxxxxxxxxxxxx as specified in the signed SSI Form for this Trust. Extension to other sites within the Trust may require further approval.

It is the responsibility of the Chief Investigators to ensure that the study is carried out in accordance with the protocol and the National Research Ethics Service (NRES) approval. Amendments, including extending the project to other Trust sites, may require further approval. All amendments should be submitted following NRES procedures and copies, including the favourable opinion, sent to the Trust R&D Office.

The sponsor and / or the principal investigator must take appropriate urgent safety measures in order to protect research participants against any immediate hazard to their health or safety. Notification of any such action must be submitted to the relevant authorities and the R&D Office as agreed in the letter of agreement between the sponsor and the Trust.

## Appendix 3

The project must be completed within the timescale as set out in the Ethics application. If the project continues out of the timescale agreed, new permission(s) must be sort and obtained.

The Chief and Principal Investigators are to comply with the monitoring arrangements of the Trust by submitting quarterly reports; a template will be sent to you for your records. The reports should be completed in conjunction with, and agreed by the Local Collaborator for the study as names in the SSI form. . All publications relating to the study, and a final report for this project to be sent to the Trust's R&D Office. Kindly also submit a copy of the end of project notification submitted to NRES.

All external researchers who seek access to the Trust in relation to this study will need to obtain an honorary research contract by submitting a research passport, if appropriate, and be issued with a xxxx letter of access before entering Trust premises. Researchers who have a contractual relationship with an NHS body should submit the relevant documentation and request a NHS to NHS letter of access. Applications can be accessed on: <http://www.ukcrc.org/regulationgovernance/researchpassport/>

All parties to familiarise themselves and comply with Trust R&D policies and procedures, available on the Trust website:

xxxxxxxxxxxxxx

Failure to comply with any of the above may result in withdrawal of Trust approval.

Please do not hesitate to contact me if you wish to discuss any aspect of this approval.

I wish you well with your study.

Yours Truly

R&D Facilitator  
On behalf of the R&D Team

Cc:

## Appendix 4

Reference: Proposal 917/Approval Letter/version1  
Mr Oliver Sindall

COPY

20<sup>th</sup> January 2011

Dear Mr Sindall,

**Re: The assessment of risk manageability for intellectually disabled individuals who offend sexually (ARMIDLO-S) – A study of the first assessment tool for sex offenders with an intellectual disability.**

I am writing to inform you that the above-named project has been approved by NHS and Social Care Partnership Trust or work involving interviews with Trust Staff and Service Users to be carried out in its area.

This approval requires that the work is carried out in accordance with the principles set out in the Research Governance Framework for Health and Social Care (Second Edition, DH 2005) and the Data Protection Act (1998). The current version of the Protocol is Version 1 (05/02/2010). The CLRN (see contact details in the header of this letter) should be informed immediately if any of these criteria are to be changed.

### Conditions of Approval

- 1. Sponsorship of study** Canterbury Christ Church University will act as research sponsor; is not responsible for the design and conduct of the study.
- 2. Confidentiality** You are required to ensure that all information regarding participants remains secure and *strictly confidential* at all times. You must ensure that you understand and comply with the requirements of the Data Protection Act (1998) and the NHS Confidentiality Code of Practice ([www.dh.gov.uk/assetRoot/04/06/92/54/04069254.pdf](http://www.dh.gov.uk/assetRoot/04/06/92/54/04069254.pdf)). Furthermore you should be aware that under the Act, unauthorised disclosure of information is an offence and such disclosures may lead to prosecution.
- 3. Study progression** You will inform me of any significant developments that occur as the study progresses, including notifying me when the study has been completed and sending me the final report and details of any publications, dissertations, abstracts etc., which may result from the study, so that our records can be kept up to date.

Finally, I wish you every success with the study.

Yours sincerely,

Centre Number:  
Participant Identification Number:

## CONSENT FORM FOR THE STUDY OF AN ASSESSMENT TOOL FOR MEN WHO SEXUALLY OFFEND

**Please tick  $\surd$  the 'YES' box if you agree. Put a X if you don't agree**

- |   | YES                      |
|---|--------------------------|
| I understand the information sheet  | <input type="checkbox"/> |
| I have asked any questions I wanted to  | <input type="checkbox"/> |
| I understand that it will not affect the services I get if I take part or not                                 | <input type="checkbox"/> |
| I agree for my Key Worker to talk to the researcher   | <input type="checkbox"/> |
| I agree for my Care Manager to talk to the researcher   | <input type="checkbox"/> |
| I agree for the researcher to look at my notes to see if I have got into any trouble with my sexual behaviour | <input type="checkbox"/> |
| I agree to take part in this research project   | <input type="checkbox"/> |

My Name: \_\_\_\_\_

Salomons Campus at Tunbridge Wells

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Researcher: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Sometimes the researcher may need to talk to someone else if they think that you or someone else is in danger. Please give the name and telephone number of the person we can contact in this situation:

Name: \_\_\_\_\_

Who is my: \_\_\_\_\_(key worker, probation officer etc).

Telephone Number: \_\_\_\_\_

## **Assessment Research Information Sheet**

Some men with learning disabilities are being asked to take part in some research looking at risk of sexual offending. You are being invited to take part in this research.

### **Background:**

Some men with learning disabilities commit sexual offences like:

- Touching a child on the 'private parts' (genitals)
- Showing other people their 'private parts' in public.
- Forcing someone to have sex with them.

Doing these things is against the law and can get men into trouble with the police. You already went to a Men's Group to try to stop offending and so we are asking if you would like to take part in this new research.

This project looks at whether we can work out who is going to do more offences and who is now safe. We want to know what situations are hard for men to cope with, so that staff can give them more help.

### **The Research**

We are going to be meeting with each man individually to talk about:

- Where you live, who helps you keep safe
- What support, help or treatment you get
- Your sexual offences
- What you think can get you into trouble
- Feelings that are hard to cope with
- Other sexual behaviour.

Six months after the meeting the researcher will look through your notes and talk to your key-worker just to see if you've got in any trouble with your sexual behaviour since we met



### **Joining the Research**

- You have to sign a form which says you want to take part.
- The meeting time and place will be arranged with you
- The meeting should be less than 1 hour.

### **Do I have to take part in the Research?**

No, it is up to you. It will not affect you or the support and treatment you get if you decide not to take part.

### **What if I don't like the Research?**

If you don't like the research you can leave the meeting at anytime and talk to a member of your care team about what you didn't like.

### **Is there anything bad about doing the research?**

- Sometimes the research may make you feel sad or upset because it reminds you of bad things. You can tell the researcher if you feel upset and stop if you want to. Or you can talk to a member of staff.

### **Is there anything good about joining the research?**

- Yes, you may learn new things to help you
- You will be helping other men with learning difficulties

### **Will things that I talk about in the meeting be private?**

- We will only talk to another named person if we think that you or someone else is in danger. Or if you tell us about a new offence and we know who the victim is.
- Anything that is written down will be locked away after talking to you and your name will NOT be on it.

### **Will I find out about how I have done in the research?**

Yes. You will get a letter letting you know about what the research found, after all the men that want to take part have done so.

Salomons Campus at Tunbridge Wells

**Contact name for further information:**

You can talk to Oliver Sindall if you want more information. His telephone number is 01892 507673. Please leave your name and a number to call you back on.

Centre Number:  
Participant Identification Number:

**CONSENT FORM FOR A STUDY OF THE FIRST RISK  
ASSESSMENT TOOL FOR SEX OFFENDERS WITH AN  
INTELLECTUAL DISABILITY (Staff)**

**Please tick  $\checkmark$  the 'YES' box if you agree. Put a X if you don't agree**

- |  | <b>YES</b>               |
|--|--------------------------|
| I understand the information sheet                       | <input type="checkbox"/> |
| I have asked any questions I want to                     | <input type="checkbox"/> |
| I understand the section on confidentiality              | <input type="checkbox"/> |
| I understand I can withdraw from the research at anytime | <input type="checkbox"/> |
| I agree to take part in this research project            | <input type="checkbox"/> |

My Name: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Researcher: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

## **Assessment Research Information Sheet (Staff)**

Some men with learning disabilities are being asked to take part in some research looking at risk of sexual offending. You are being invited to take part in this research.

### **Background:**

Some men with learning disabilities commit sexual offences. This project looks at whether we can work out who is going to continue showing sexually abusive behaviour and who is now safe. We want to know what situations are hard for men to cope with, so that staff can give them more help.

### **The Research**

We are going to be meeting with service users individually to use a new assessment tool for learning disabled men who sexually offend. We will talk about:

- Where they live, who helps them keep safe
- What support, help or treatment they get
- Their sexual offences
- What they think can get them into trouble
- Feelings that are hard to cope with
- Other sexual behaviour.

Part of the assessment involves interviewing a key member of staff involved in the service user's care.

Six months after the meeting the researcher will look through their notes and talk to you, their key-worker, to see if they committed any sexually abusive behaviour.

### **Joining the Research**

- You have to sign a form which says you want to take part.
- The meeting time and place will be arranged with you

- The meeting should be less than 1 hour.

**Do I have to take part in the Research?**

No, it is up to you. You can also withdraw from the project at anytime.

**Is there anything good about joining the research?**

This research is hoping to improve the assessment or risk and manageability when working with these men.

**Will things that I talk about in the meeting be confidential?**

- What you tell the researcher will remain confidential. This will only be broken if it is felt that you or someone else may be harmed.
- Your name will not be used and your answers will be kept in a locked filing cabinet.

**Will I find out about how I have done in the research?**

Yes. You will get a letter letting you know about what the research found, after all the men that want to take part have done so.

**Contact name for further information:**

You can email Oliver Sindall of Canterbury Christchurch University, if you require more information. [os32@canterbury.ac.uk](mailto:os32@canterbury.ac.uk).

**The Assessment of Risk and Manageability for Intellectual Disabled Individuals who Offend Sexually (ARMIDILO-S): A Study of the first risk assessment tool for sex offenders with an intellectual disability.**

**Ref: 10/H1101/17**

## **Final Report to Kent Research and Ethics Committee**

### Introduction:

The mainstream sex offender literature now stretches back over a number of decades. This has led to a large body of research aimed at understanding male sex offending, typologies, and improving risk assessment and treatment. Despite this attention on sex offenders, efforts have been much slower in developing a similar body of research for intellectually disabled (ID) sex offenders. However, interest in the assessment and treatment of this group has grown considerably in the last 20 years. Much of the literature attributes this increasing level of attention, to the process of deinstitutionalization that took place through the 1980's. One of the fastest growing areas has been the risk assessment of ID sex offenders. This study aimed to provide a prospective design approach to the application of a revised version of the tool, the ARMIDILO-S (Boer, Haaven, Lambrick, Lindsay, McVilly, and Sakdalan, unpublished), using both file and interview based sources of information. The ARMIDILO-S is a structured risk and management guideline instrument under development. It is intended for use with intellectually disabled individuals (adults) for whom there are concerns regarding sexually abusive behaviour which may or may not have been subject to a criminal investigation. The current version of the ARMIDILO-S incorporates 26 items to assess the risk and risk manageability of ID sex offenders.

### Sample

The participants were recruited from an existing database of all male ID sex offenders that have previously attended group treatment designed by the Sex Offender Treatment Services Collaborative - Intellectual Disability (SOTSEC-ID), based at the Tizard Centre, Kent University. This treatment programme has been adopted by a number of NHS and private ID services across the UK, both as a community and inpatient based group. All of the participants were introduced to this study by their treatment provider. This method was chosen so that briefing and consent was discussed with someone the participant knew and felt comfortable with, in order to avoid them acquiescing or feeling pressured to take part. Each treatment provider communicated to the researcher the details of those that consented to the study.

### Method:

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Faculty of Social and Applied Sciences

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Professor Michael Wright, Vice Chancellor and Principal

Registered Company No: 4793659  
A Company limited by guarantee  
Registered Charity No: 1098136

Stage 1: A review of the participant's file and an interview with their 'key worker' (for the purpose of this study this refers to the main professional providing support or supervision to the participant, e.g. Key worker, named nurse, care co-ordinator, probation officer etc).

Stage 2: A participant interview.

Stage 3: Scoring. The information gathered in stage one and two was analysed to provide a risk score and protective factor score for each of the 26 items on the ARMIDILO-S.

Stage 4: Follow up data. All of the participants were followed up after a period of between one and six months, following stage one and two. At each individual follow up the 'key worker' was asked to provide any reports of sexually inappropriate or risky behaviour since the completion of stage one.

#### Data Analysis:

The majority of the forensic risk assessment literature suggests that the predictive accuracy of a method of assessment is best indexed through the area of the curve (AUC) statistic of the receiver operating characteristics (ROC). Logistic Regression was also used for a further investigation of the relationship between the items on the ARMIDILO-S any offending reported at follow up.

#### Results:

The following findings are based on a sample of 16 ID offenders who had been through a sex offender treatment programme. In terms of recidivism, 31.2% (n=5) of the sample committed further sexually inappropriate behaviour during the six month follow up. Based on the literature and previous studies it was hypothesised that the ARMIDILO-S would produce a significant predictive effect. The findings support this hypothesis, with the overall risk rating of the ARMIDILO-S achieving a significant AUC value (0.81.  $p < 0.05$ ). With such a high predictive accuracy score it is impossible not to consider that this result may be attributed to the dynamic and ID specific design of this assessment tool. Overall the logistic regression model supported the scales of the ARMIDILO-S, correctly predicting 81% of the outcome variable. The size of the  $R^2$  value (0.61.  $p < 0.05$ ) also suggests that the model contributes powerfully to the prediction of sexually inappropriate behaviour.

#### Publication or dissemination of the research:

This will be presented to the NHS Trusts involved any appropriate conferences in the near future. The study will hopefully be submitted to the Journal of Applied Research in Intellectual Disabilities.

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Professor Michael Wright, Vice Chancellor and Principal

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A Company limited by guarantee  
Registered Charity No: 1098136



### DECLARATION OF THE END OF A STUDY

(For all studies except clinical trials of investigational medicinal products)

*To be completed in typescript by the Chief Investigator and submitted to the Research Ethics Committee that gave a favourable opinion of the research ("the main REC") within 90 days of the conclusion of the study or within 15 days of early termination. For questions with Yes/No options please indicate answer in bold type.*

#### 1. Details of Chief Investigator

Name:	Oliver Sindall
Address:	xxxxxxx
Telephone:	xxxxxxx
Email:	xxxxxxx
Fax:	xxxxxxx

#### 2. Details of study

Full title of study:	The Assessment of Risk and Manageability for Intellectual Disabled Individuals who Offend Sexually (ARMIDILO-S): A Study of the first risk assessment tool for sex offenders with an intellectual disability.
Research sponsor:	Canterbury Christ Church University.
Name of main REC:	Kent
Main REC reference number:	10/H1101/17

#### 3. Study duration

Date study commenced:	28 <sup>th</sup> May 2010
Date study ended:	15 <sup>th</sup> July 2011
Did this study terminate prematurely?	<b>No</b> <i>If yes please complete sections 4, 5 &amp; 6, if no please go direct to section 7.</i>

## Appendix 8

### 4. Circumstances of early termination

What is the justification for this early termination?	N/A
---	-----

### 5. Temporary halt

Is this a temporary halt to the study?	<i>No</i>
If yes, what is the justification for temporarily halting the study? When do you expect the study to re-start?	<i>e.g. Safety, difficulties recruiting participants, trial has not commenced, other reasons.</i>

### 6. Potential implications for research participants

Are there any potential implications for research participants as a result of terminating/halting the study prematurely? Please describe the steps taken to address them.	N/A
---	-----

### 7. Final report on the research

Is a summary of the final report on the research enclosed with this form?	<i>Yes</i> <i>If no, please forward within 12 months of the end of the study.</i>
---	--

### 8. Declaration

Signature of Chief Investigator:	
Print name:	Oliver Sindall
Date of submission:	15/7/2011

## Appendix 9

Journal Submission Guidelines:

Journal of Applied Research in Intellectual Disabilities

### MANUSCRIPT FORMAT AND STRUCTURE

#### Format

**Language:** The language of publication is English. Authors for whom English is a second language must have their manuscript professionally edited by an English speaking person before submission to make sure the English is of high quality. It is preferred that manuscripts are professionally edited. A list of independent suppliers of editing services can be found at [http://authorservices.wiley.com/bauthor/english\\_language.asp](http://authorservices.wiley.com/bauthor/english_language.asp). All services are paid for and arranged by the author, and use of one of these services does not guarantee acceptance or preference for publication.

#### Structure

All manuscripts submitted to the Journal of Applied Research in Intellectual Disabilities should include:

**Cover Page:** A cover page should contain only the title, thereby facilitating anonymous reviewing. The authors' details should be supplied on a separate page and the author for correspondence should be identified clearly, along with full contact details, including e-mail address.

**Running Title:** A short title of not more than fifty characters, including spaces, should be provided.

**Keywords:** Up to six key words to aid indexing should also be provided.

**Main Text:** All papers should be divided into a structured abstract (150 words) and the main text with appropriate sub headings. A structured abstract should be given at the beginning of each article, incorporating the following headings: Background, Materials and Methods, Results, Conclusions. These should outline the questions investigated, the design, essential findings and main conclusions of the study. The text should then proceed through sections of Introduction, Materials and Methods, Results and Discussion, and finally Tables. Figures should be submitted as a separate file.

**Style:** Manuscripts should be formatted with a wide margin and double spaced. Include all parts of the text of the paper in a single file, but do not embed figures. Please note the following points which will help us to process your manuscript successfully:

- Include all figure legends, and tables with their legends if available.
- Do not use the carriage return (enter) at the end of lines within a paragraph.
- Turn the hyphenation option off.
- In the cover email, specify any special characters used to represent non-keyboard characters.
- Take care not to use l (ell) for 1 (one), O (capital o) for 0 (zero) or ß (German esszett) for (beta).
- Use a tab, not spaces, to separate data points in tables.
- If you use a table editor function, ensure that each data point is contained within a unique cell, i.e. do not use carriage returns within cells.

## Appendix 9

Spelling should conform to The Concise Oxford Dictionary of Current English and units of measurements, symbols and abbreviations with those in Units, Symbols and Abbreviations (1977) published and supplied by the Royal Society of Medicine, 1 Wimpole Street, London W1M 8AE. This specifies the use of S.I. units.

### References

The reference list should be in alphabetic order thus:

- Emerson E. (1995) Challenging Behaviour: Analysis and Intervention in People with Learning Disabilities. Cambridge University Press, Cambridge.
- McGill P. & Toogood A. (1993) Organising community placements. In: Severe Learning Disabilities and Challenging Behaviours: Designing High Quality Services (Eds E. Emerson, P. McGill & J. Mansell), pp. 232-259. Chapman and Hall, London.
- Qureshi H. & Alborz A. (1992) Epidemiology of challenging behaviour. Mental Handicap Research 5, 130-145

Journal titles should be in full. References in text with more than two authors should be abbreviated to (Brown et al. 1977). Authors are responsible for the accuracy of their references.

We recommend the use of a tool such as EndNote or Reference Manager for reference management and formatting.

EndNote reference styles can be searched for here:

<http://www.endnote.com/support/enstyles.asp>

Reference Manager reference styles can be searched for here:

<http://www.refman.com/support/rmstyles.asp>

The Editor and Publisher recommend that citation of online published papers and other material should be done via a DOI (digital object identifier), which all reputable online published material should have - see [www.doi.org/](http://www.doi.org/) for more information. If an author cites anything which does not have a DOI they run the risk of the cited material not being traceable.

### Tables, Figures and Figure Legends

Tables should include only essential data. Each table must be typewritten on a separate sheet and should be numbered consecutively with Arabic numerals, e.g. Table 1, and given a short caption.

Figures should be referred to in the text as Figures using Arabic numbers, e.g. Fig.1, Fig.2 etc, in order of appearance. Figures should be clearly labelled with the name of the first author, and the appropriate number. Each figure should have a separate legend; these should be grouped on a separate page at the end of the manuscript. All symbols and abbreviations should be clearly explained. In the full-text online edition of the journal, figure legends may be truncated in abbreviated links to the full screen version. Therefore, the first 100 characters of any legend should inform the reader of key aspects of the figure.

APPENDICES 10, 11, 12 HAVE NOT BEEN INCLUDED IN THIS  
PUBLIC COPY OF THIS MRP DUE TO COPYRIGHT

## APPENDIX 13

Break down of the items and scales (IV's) within the ARMIDILO-S Risk Assessment Tool

Source of Risk	Level of Change	
<b>Client Items Scale (N=16)</b>	<b>Stable Client Items (N=10)</b>	<b>Acute Client Items (N=6)</b>
	1. Supervision Compliance	1. Change in Compliance
	2. Treatment Compliance	2. Change in Sexual preocc/drive
	3. Sexual Deviance	3. Change in Victim Related Behaviour
	4. Sexual Preoccupation	4. Change in Emotional Coping
	5. Offence Management	5. Change in Coping Strategies
	6. Emotional Coping Ability	6. Changes to Unique Considerations
	7. Relationships	
	8. Impulsivity	
	9. Mental Health	
<b>Environment Items Scale (N=10)</b>	<b>Stable Environment Items (N=5)</b>	<b>Acute Environment Items (N=5)</b>
	11. Attitudes towards ID Client	7. Change in Social Relationships
	12. Communication among Staff	8. Change in Monitoring
	13. Client Support worker knowledge	9. Situational Change
	14. Consistency of Supervision	10. Changes in Victim Access
	15. Unique Considerations	11. Unique Considerations
<b>Stable Items Total (N=15)</b>		<b>Acute Items Total (N=11)</b>
<b>ARMIDILO-S Total Score (N=26)</b>		

APPENDIX 14

Static-99R Coding Form Question Number	Risk Factor	Codes		Score
1	Age at release	Aged 18 to 34.9 Aged 35 to 39.9 Aged 40 to 59.9 Aged 60 or older		1 0 -1 -3
2	Ever Lived With	Ever lived with lover for at least two years? Yes No		0 1
3	Index non-sexual violence - Any Convictions	No Yes		0 1
4	Prior non-sexual violence - Any Convictions	No Yes		0 1
5	Prior Sex Offences	Charges 0 1,2 3-5 6+	Convictions 0 1 2,3 4+	0 1 2 3
6	Prior sentencing dates (excluding index)	3 or less 4 or more		0 1
7	Any convictions for non-contact sex offences	No Yes		0 1
8	Any Unrelated Victims	No Yes		0 1
9	Any Stranger Victims	No Yes		0 1
10	Any Male Victims	No Yes		0 1
<b>Total Score</b>		<b>Add up scores from individual risk factors</b>		