

Static Risk Assessment of Sexual Offenders in New Zealand:
Predictive Accuracy, Classification of Risk, and the Moderating
Effect of Time Offence-Free in the Community

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Lucy Moore

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Abstract

Sexual offending is regarded, both legally and morally, as among the most serious of crimes; therefore, accurate identification and reduction of recidivism risk for offenders who commit these crimes should be given considerable attention. The research in this thesis investigates whether any improvements can be made to the current sexual risk assessment measure for sexual offenders in New Zealand (the ASRS-R), and whether the categorisation of risk obtained by the static risk measure maintains the same level of accuracy once an offender has remained in the community without committing further offences after a certain period of time. Both of the studies undertaken in this thesis utilized the same large cohort of offenders; every individual convicted of a sexual offence that was released from a New Zealand prison between 1st January 1992 and 31st December 2002 ($N = 5,895$).

Study 1 attempted to create a static risk model that could provide comparable predictive accuracy to the ASRS-R, while removing some of the variables that have previously been found not to be significantly predictive of sexual recidivism. To generate the model, a cross-validation strategy was used; the model developed using one half of the sample, and validated using the other half of the sample. The computer-scored version of the model, named the Communicable Risk Measure for Sexual Offences (CRMSO), was able to provide similar predictive accuracy for sexual recidivism to the ASRS-R, while using fewer variables, obtaining AUC values of .712, .686, and .690 for 5-year, 10-year, and total sexual recidivism. The correlation between overall scores for the CRMSO and ASRS-R was $r = .88$ ($p < .01$). Additionally, the ability of the CRMSO to classify the relative risk of offenders was investigated, initially using the same 4 categories used in the ASRS-R, and then using a 5-category version, based on the guidelines proposed by Hanson, Babchishin, Helmus, Thornton and Phenix (2017), which also utilised the

alternative risk category labels to standardize the communication of risk for decision-makers.

The CRMSO demonstrated an increased sensitivity to those at the highest risk of recidivism when using the 4-category version, and the inclusion of a fifth category identified a very low-risk group of offenders; both of which have important implications for offender management.

Study 2 aimed to identify whether the level of risk attached to an offender at the time of their release remained predictive of their propensity to commit further offences after they had spent time offence-free in the community. Study 2 extended the previous research of Hanson, Harris, Helmus and Thornton (2014), who found that high-risk sexual offenders remained high-risk over time. Specifically, Study 2 extended the findings of Hanson et. al. (2014) to a nationwide cohort of offenders, and investigated whether violent and general desistance was also occurring, as well as desistance from sexual offending. The results from Study 2 indicated that the sexual offenders were in fact desisting from all types of criminal offending equally, and this finding was especially strong for the high-risk offenders. Overall, the findings of this research indicate that the classification and communication of static risk can be improved upon, but the overall predictive accuracy of different static risk measures remains stable. Additionally, it is apparent that static risk may be a valid, but time-dependent indicator of an individual's propensity to commit further offences, and may affect sexual, violent, and general recidivism equally.

Chapter 1: Introduction & Literature Review

Sexual crimes invoke a high level of public concern, and this is especially true when the victims are children. Sexual offending is deemed, both legally and morally, to be among the most serious of crimes; therefore, identification and reduction of recidivism risk for offenders who commit these crimes should be given considerable attention. The number of offenders who sexually offend against children or adults is relatively low, compared to the general criminal population. For example, all sexual offences represent less than 1% of the total crimes recorded each year in England and Wales (Friendship, Mann, & Beech, 2003), and only 1% of the total crimes recorded in New Zealand each year (New Zealand Police, 2015). Additionally, the rates of recidivism for sexual offences are also low compared to non-sexual offences, with 5-10 year recidivism rates ranging from 5-15% (Craig, Thornton, Beech, & Browne, 2007; Hanson & Harris, 2001; Lussier, Harris, & McAlinden, 2016; Mann, Hanson, & Thornton, 2010). In other words, around 85-95% of sexual offenders released from prison are not reconvicted of another sexual crime within that time period. Conversely, the percentage of violent offenders who are convicted of another violent offence within 10 years' ranges from 24-43% (Girard & Wormith, 2004; Harris & Rice, 2007; Harris, Rice, & Cormier, 1991; Rice & Harris, 1995).

However, irrespective of the offending or reoffending rates, any sexual offending is extremely harmful and traumatic for the victims. For example, children who are sexually abused display high levels of Post-Traumatic Stress Disorder (PTSD), along with higher levels of depression and other social or emotional difficulties (such as self-esteem issues), than are seen in children who have not been victimised (Boney-McCoy & Finkelhor, 1996; Turner, Finkelhor, & Ormrod, 2010). It has also been noted that sexual victimisation may have more detrimental effects on self-esteem than other types of victimisation, such as physical violence (Turner et al.,

2010). In addition, although sexual crimes may represent a very small proportion of reported offences, it is estimated that a substantial amount of sexual offending goes unreported. For instance, a survey carried out in Ireland found that one in five females, and one in ten males, reported they had been sexually victimised before the age of 18 (McGee, O'Higgins, Garavan, & Conroy, 2011), and a recent meta-analysis comprised of 55 studies from 24 different countries found that 13% of girls and 6% of boys had reported some form of contact abuse (kissing, touching or fondling) before the age of 18, with 31% of girls and 17% of boys reporting some form of non-contact abuse (indecent exposure or sexual solicitation) before the age of 18 (Barth, Bermetz, Heim, Trelle, & Tonia, 2013) These findings indicate a discrepancy between the actual and reported rates of sexual offending against children. Similarly, there is significant underreporting for adult sexual offences, over and above the underreporting for other types of crime; the 2017 Crime Survey for England and Wales estimates that 20% of women and 4% of men have experienced some type of sexual assault since the age of 16, with 5 out of 6 victims not reporting the offences to police (Office of National Statistics, 2017). For these reasons, there is significant concern about the appropriate management of sexual offenders to ensure that those at greatest risk of reoffending are unable to gain access to potential victims.

In recent years, substantial research has been carried out on the classification of risk and outcomes of specialised treatment programmes for sexual offenders. Prominent locations for this research include the U.S.A, Canada, United Kingdom, Australia, New Zealand and greater Europe (Allan, Grace, Rutherford & Hudson, 2011; Babchishin, Blais, & Helmus, 2012; Beech, Friendship, Erikson, & Hanson, 2002; Beggs & Grace, 2011; Hanson, Thornton, Helmus, & Babchishin, 2016; Kenny, Keogh, & Seidler, 2001; McGrath, Lasher, & Cumming, 2012). New Zealand has generated some of the leading research over the last few decades, with a focus on

dynamic risk factors and treatment efficacy at Kia Marama Special Treatment Unit (STU) in Christchurch; where exclusively sexual offenders against children are treated, and more recently, on Te Piriti also; a sister STU to Kia Marama, located in Auckland (Bakker, Hudson, Wales, & Riley, 1998; Beggs & Grace, 2011; Hudson, Wales, Bakker, & Ward, 2002; Marentette, 2009; Moore, 2012; Nathan, Wilson & Hillman, 2003; Willis & Johnston, 2012).

To begin this dissertation, an extensive review of the literature pertaining to the risk assessment and desistance of sexual offenders will be provided. The empirical chapters will then be introduced, followed by the two empirical studies: Study 1 being an investigation of whether the static risk assessment measure currently used in New Zealand can be improved, and Study 2 being an assessment of whether New Zealand high-risk sexual offenders remain high-risk over time. The dissertation will finish with a discussion of the overall results, including general implications and concluding comments.

This literature review will begin by outlining the characteristics of sexual offenders, both against adults and children, before covering previous literature on risk assessment for sexual offenders. The inherent issues for effectively assessing the risk of this population will then be discussed, including coverage of the various analytical methods that can be utilised to assess risk of recidivism. The concept of the age effect and desistance from crime, particularly desistance from sexual offending, will also be covered; focusing on how an improved knowledge about the sexual offending desistance process could help advance risk assessment and policy development in New Zealand. Finally, the current research will be introduced.

Sex offenders: a distinct population?

The hypothesis that sexual offenders are a distinct population has been studied in depth, and support has been found both for (Cantor, Blanchard, Robichaud, & Christensen, 2005; Hanson, Scott, & Steffy, 1995; Hanson, 2000) and against (Lussier, 2005; Lussier & Cale, 2013) the idea of type-specific offending. In terms of classification, specialisation in offending behaviour can be considered in several ways – for example, whether sexual offenders who commit offences against children are different from sexual offenders who commit offences against adults, and whether sexual offenders are demonstrably different from non-sexual offenders (who commit only violent or general offences).

Hanson, Scott and Steffy (1995) followed a sample of 191 child molesters and 137 non-sexual offenders for a follow-up period of between 15 and 30 years. They found that almost all of the violent recidivism was committed by the non-sexual offenders; only 1% of the child molesters were convicted of another violent offence during the follow-up period, with 32.8% of the non-sexual offenders violently reoffending. In addition, the overall rates of sexual recidivism for convicted sexual offenders are substantially lower than the overall rates of violent and general recidivism for non-sexual offenders. Most studies have demonstrated that between 5-15% of convicted sexual offenders will sexually reoffend within 5-10 years (Allan et al., 2007; Mann et al., 2010; Moore, 2012; Schmucker & Lösel, 2015), whereas the recidivism rates for violent reoffending within a similar follow up time range from 24-43%, and when general reoffending is examined, that percentage increases up to as high as 82.5% (Girard & Wormith, 2004; Hanson, Scott, & Steffy, 1995; Rice & Harris, 1995). These statistics do lend support to the idea that sexual offenders represent a subtype of offender, with different offence processes than non-sexual offenders.

Differences have also been identified between sexual offenders against children and those who offend against adults (adult rapists). Rapists are frequently found to reoffend faster than child molesters, and at a higher rate (Hanson, 2002; Quinsey, Rice, & Harris, 1995). Hanson and Bussiere (1998) also reviewed 61 studies involving close to 24,000 sex offenders over an average follow-up period of 4.5 years, and found that 10% of the child molesters had violently reoffended, compared to 22% of the adult rapists. Rapists continually appear to display an offending profile closer to that of a violent offender than child molesters do (Eher et al., 2016; Lussier, 2005; Lussier & Cale, 2013; Quinsey et al., 1995).

Elements of sexual deviance have also been exhibited in child molesters that are not typically found with adult rapists; child molesters are more likely to display a sexual preference for children, whereas rapists are more likely to demonstrate a sexual preference for adult females or males. Sexual preference and identification of abnormal sexuality is usually measured using phallometric techniques such as the penile plethysmograph, or the polygraph (Balmer & Sandland, 2012; Baxter, Marshall, Barbaree, Davidson, & Malcolm, 1984; Hanson & Harris, 2000; Hanson, 2002). However, it is also acknowledged that not all sexual offenders who victimise children display abnormal sexual preferences (Harris, 2016; Miner & Dwyer, 1997). Multiple studies have also found that sexual offenders against children tend to be less educated, older, and have fewer criminal convictions for violent or general crimes than adult rapists (Baxter et al., 1984; Hanson et al., 1995; Lussier & Cale, 2013). There is also evidence that some child molesters have poor interpersonal relationships with adults of their own age, alongside other social and emotional-regulation difficulties, and this may cause them to have greater emotional identification with children (Miner & Dwyer, 1997). Moreover, paedophilia

has been associated with developmental and cognitive problems, including low IQ, that may stem from life events such as childhood traumatic brain injury (Cantor et al., 2005).

Differences have also been found between sexual offenders who offend against extra-familial children and those who offend against intra-familial children (incest offenders). It is common for incest offenders to display less sexual deviance and more normative sexual preferences (Baxter et al., 1984; Hanson, 2002; Miner & Dwyer, 1997). Additionally, incest offenders tend to present less antisocial tendencies, and lower rates of reoffending, than both extra-familial child molesters and adult rapists (Hanson, 2002; Lussier & Cale, 2013; McGrath, Hoke, & Vojtisek, 1998). Among the studies covered in the meta-analysis by Hanson (2002), extra-familial child molesters had a recidivism rate of 19.5% over the average 46-month follow-up period, whereas incest offenders had a recidivism rate of 8.4%.

However, it is important to also recognise that there is also evidence for some sexual offenders to commit non-sexual crimes, indicating that although there may be some specific offending behaviour, some sexual offenders display higher levels of general criminality that may be similar to non-sexual offenders (Lussier, 2005; Lussier & Cale, 2013; Moore, 2012). For instance, a previous New Zealand study by Moore (2012) investigated the treatment efficacy of Kia Marama Special Treatment Unit for child sex offenders by comparing 428 treated offenders against an untreated control group of 1956 offenders, and found that child molesters in both the treated and untreated groups had higher violent and general recidivism rates than sexual recidivism rates; with 38% of the untreated group being reconvicted of another general offence, and 18% reconvicted of another violent offence during the 6.8 year follow-up period, compared to the 7% reconvicted of another sexual offence. For the treated group, 32 % and 10% were

reconvicted of another general and violent offence, respectively, with 7% reconvicted of another sexual offence.

Evidence has also been found to support the idea that some sexual offenders do not have a victim preference, or show some evolution of their victim preference over time. Moore (2012) found that 8% of the New Zealand cohort of 2384 sexual offenders against children had previous convictions for offences involving adult victims (either male or female). Cann, Friendship and Gozna (2007) studied the offending behaviour of 1345 incarcerated sexual offenders in England and Wales, and found that 24.5% of the offenders exhibited crossover sexual offending behaviour; 8% with regards to victim age (child or adult), 9% for victim gender, and 14% for victim relationship (intra-familial or extra-familial). Another recent American study evaluated a sample of 208 incarcerated sexual offenders with previous sexual offences, and found significant evidence of crossover with their sexual offending behaviour; 20% with regards to victim gender, 40% for victim age, and 48% for relationship with the victim (the authors differentiated between acquaintance, stranger, or family member; Kleban, Chesin, Jeglic, & Mercado, 2013).

Furthermore, the versatility of sexual offending behaviour may be directly linked to versatility of non-sexual offending. Smallbone and Wortley (2004) found that when the paraphilia of a sample of child molesters was examined, the diversity of paraphilia displayed by the offenders showed a significant positive correlation with diversity of non-sexual offending. Similar results were obtained with a sample of adult offenders, where the same pattern of versatility was also linked to early-onset and persistent antisocial behaviour, highlighting that there may be a subtype of sexual offenders who are characterised by a life-long criminal propensity and antisocial history, that includes sexual offending amongst many other crimes, and who are likely to show more persistent offending behaviour over time (Lussier, 2005).

Overall, the indication that there may be differing subtypes of offenders conflicts with the general theory of crime proposed by Gottfredson and Hirschi (1990), and suggests that different types of offenders may require different strategies to allow them to be managed effectively. More specifically, the observed differences and similarities in characteristics and recidivism rates between child molesters, adult rapists, and non-sexual offenders should inform how risk assessment is applied effectively. In general, the observed differences endorse the continued use of specialised risk assessment measures for sexual offenders, but highlight the idea that sexual offenders may not be quite as heterogeneous as previously thought. The crossover offending behaviour displayed by sexual offenders also challenges the idea that there are entirely distinct subtypes of sexual offenders (i.e. child molesters and adult rapists) that need to be managed separately from one another. It is also important to be aware of the individual differences that can be displayed within this group of offenders, including the possibility of identifying career criminals who may have very broad offence histories that also include a sex offence, and may show a vastly different offence profile to other sexual offenders. The next section of this chapter will consider how risk assessment for sex offenders has developed, before covering the issues pertaining to the evaluation of recidivism risk for sexual offenders.

Risk assessment for sex offenders

Before covering the risk factors that are important for sexual offenders, the general principles of offender risk assessment will first be introduced. The development and utility of risk assessment tools for sex offenders will then be discussed, focusing on the tools that are most commonly used in correctional practice today, and on the most recent developments in risk assessment for sexual offenders.

The principles of risk assessment for correctional treatment

Risk assessment plays a pivotal role in offender management at multiple points throughout the judiciary process. Risk assessment at initial conviction can guide decisions about the management of an offender in terms of the length or severity of sentencing, treatment and incarceration location (i.e. high-security or low-security), as well as providing an informed likelihood of recidivism upon release, which directly impacts probationary conditions and other community restrictions. Therefore, it is vital that risk assessment is carried out as effectively and accurately as possible.

Andrews, Bonta and Hoge (1990) proposed that the effective classification of an offender for the purposes of correctional treatment, whether in prison or in the wider community, should be based on three key principles of risk, need and responsivity (RNR). The risk principle is concerned with identifying whether offenders are at a high or low risk of reoffending, and this directly corresponds to the level of treatment they should receive. Longer, more intensive treatment should be provided to high-risk offenders, whereas offenders who display a low propensity for recidivism should receive very little treatment, or no treatment at all. Intensive treatment has been shown to have potentially adverse effects on low-risk offenders, and can increase their chance of reoffending. The principle of need takes account of the criminogenic needs of an offender, which are often referred to as dynamic risk factors; that is, factors that are associated with reoffending but which can be altered within an individual to reduce the likelihood of recidivism. Criminogenic needs include personality traits and situational variables that can all be targeted with tailored treatment, and effective treatment should always target these factors to have the greatest chance of being able to reduce the likelihood of reoffending. Lastly,

the responsivity principle is concerned with adapting the delivery of treatment to suit individual offenders. For example, this can mean addressing the cultural background of the offender, and their learning and communication skills, to ensure that the offender is able to understand and apply the elements of a treatment programme to their own individual situation (Andrews & Bonta, 2006; Andrews, Bonta, & Hoge, 1990). Responsivity can be regarded as possibly the most important of the three principles, as even if the risk assessment is made accurately, and the criminogenic needs are addressed, treatment will have very little chance of success if the offender is not able to respond to the treatment programme, or feels alienated from the delivery of the programme.

Risk factors for sexual offending

Risk factors are variables that are linked empirically with the likelihood of recidivism, and fall into two categories: static and dynamic. Static risk factors are historical and are unable to be changed by treatment, such as the number of previous sentencing dates, age at release or first offence, and other offence history details. On the other hand, dynamic risk factors, as mentioned previously, are amenable to change and are able to be targeted in treatment programmes; factors such as drug use or intoxication, associating with antisocial peers or holding antisocial attitudes, and personality traits that are supportive of offending behaviour. Dynamic risk factors can also be broken down further, into stable and acute risk factors. Acute risk factors are factors directly linked to the situation surrounding the offence, such as intoxication, peer association and proximity to any potential victims (i.e. specific opportunity for offence), and these factors can change rapidly from moment to moment. Conversely, stable risk factors are pervasive personality traits, such as deviant sexual preferences, emotional regulation deficiencies, or attitude towards

offending, that require a significant amount of time to change, and often do so gradually, over months or years (Hanson & Harris, 2000; Hanson, 1997). Although both stable and acute dynamic risk factors may be equally important to the likelihood of recidivism, acute risk factors are extremely difficult to target in treatment programmes and to monitor post-release, compared to stable risk factors (Hudson et al., 2002; Shadd Maruna, 2012). Acute factors can be controlled by the offender to some extent (e.g., a decision to use drugs), but other situational factors are very hard to predict, or avoid, for some individuals, and occur too quickly for successful intervention to be employed.

Some risk factors appear to be predictive of any type of recidivism; factors such as drug or alcohol use, number of previous convictions or sentencing dates, age, and personality traits such as psychopathy (Brouillette-Alarie, Babchishin, Hanson, & Helmus, 2016); however, there are a number of risk factors which have been identified specifically for sex offenders, or the likelihood of sexual recidivism. Given the aforementioned differences (and similarities) in offender characteristics between sexual and non-sexual offenders, it is not surprising that there is evidence of both generalisation and specialisation in the risk factors for sex offenders. The most distinctive risk factor for sexual offending specifically is sexual deviance, which can manifest in a number of ways; child molesters may have sexual deviance in the form of a sexual preference for children, whereas for adult rapists, there may be elements of sexual deviance in the form of arousal to violent or sadistic sexual images. In general, rapists employ more force and violence with their victims than child molesters do (Barbaree, Seto, Langton, & Peacock, 2001; R. K. Hanson & Harris, 2000; R. Karl Hanson, 2002).

The particular nature of sex offences (more so for offences against children) also allows the static risk factors to become more specialised with regard to both personal and offence

history. For example, having male victims, never marrying, and having no previous relationship to the victim (a stranger offence), have all been identified as risk factors for sexual recidivism (a. Beech et al., 2002; R. K. Hanson & Harris, 2000; Quinsey et al., 1995; H. C. Wakeling, Mann, & Carter, 2012). Some psychological markers have also been identified for sexual recidivism risk, such as belief systems or justifications for their offending behaviour (such as hostility towards women, Machiavellian attitudes, or an unhealthy emotional identification with children), poor problem-solving and decision-making skills, poor sexual self-regulation, emotional regulation difficulties, and other interpersonal problems (Allan et al., 2007; L. a. Craig et al., 2007; R. K. Hanson & Harris, 2000; Mann et al., 2010; H. Wakeling et al., 2013).

Empirically validated risk factors are used to create assessment tools that can be administered to an offender at various times during the time they spend in the judicial system; for example upon incarceration, when entering or leaving a treatment programme, at parole hearings, and during community supervision. These risk assessment tools can deliver a number of different functions; give a fixed prediction of recidivism (when only static factors are utilised in the assessment tool), provide information on treatment targets in the form of dynamic risk factors, the change in risk of sexual recidivism over time, and offender management (both in prison and in the community).

Risk assessment tools: First-generation through fourth-generation

First-generation risk assessments were prevalent in the 1970s and earlier (Andrews & Bonta, 2006; Steadman & Coccozza, 1974). They focused solely on professional, unstructured clinical judgement, with no consideration of empirically measured risk factors. It has been consistently demonstrated over the last 50 years that actuarial, empirically-based prediction is superior to clinical prediction, and that the informal and subjective nature of clinical

judgment does not allow for consistent and reliable measurements of risk (Andrews, Bonta, & Wormith, 2006; Dawes, Faust, & Meehl, 1989; Grove, Zald, Lebow, Snitz, & Nelson, 2000; R. Karl Hanson & Bussière, 1996).

Second-generation risk assessment is actuarial, as opposed to clinical, meaning empirical, statistical measures are taken to determine the risk level of the offender. Actuarial procedures will always lead to the same conclusion for a given data set (thus, interrater reliability is close to 100%), whereas clinical judgement of a given case might be affected by factors such as fatigue, minor alterations to the order of presented material and recent or memorable personal, and/or clinical, experiences (Dawes et al., 1989). Second-generation assessment makes use of static risk factors only; factors which are historical and unchangeable. The most commonly used second-generation assessment tool for sexual offenders is the Static-99, developed by Hanson and Thornton (2000), and will consequently be described in more detail below. Although static risk factors perform well in risk prediction measures, dynamic risk factors are also important. Dynamic risk factors not only take into consideration theoretically relevant aspects of criminal behaviour, but identify treatment targets as well (Andrews & Bonta, 2006; M. Rettenberger & Craig, 2017). Second-generation assessment does not give explicit information to the treatment provider on what psychological risk factors or needs should be targeted and can be ameliorated through treatment. Without treatment targets identified for an individual offender, it is much harder successfully to reduce the risk of recidivism.

However, there is growing evidence to suggest that static, historical risk factors may be able to serve as potential markers for some of the empirically identified psychological risk factors for sexual offending; in effect, markers for dynamic risk factors, and that static and dynamic risk factors may therefore be functionally linked. For example, items from the common

risk assessment tools Static-99 and the ASRS, such as the number of prior non-contact offences, and number of prior sex offences, could be considered as historical markers of poor sexual self-regulation, and indicate that including sexual self-regulation as a treatment target would be beneficial for the offender (A. R. Beech & Craig, 2012; Casey, 2016; L. a. Craig et al., 2007; H. Wakeling et al., 2013; Ward & Beech, 2004).

Regardless of whether static risk factors can be indicative of changeable treatment targets or not, second-generation assessment does not allow for any change in the recidivism risk of an offender in most cases, because the amount of time since the last offence, undergoing any sort of treatment programme, or a natural devolution of criminal propensities will not alter the risk level calculated by static, historical variables. It is possible for an offender to increase their risk level with second-generation risk assessment, if they go on to commit further crimes, but for the majority of offenders, it is not possible to reduce their risk level on second-generation risk assessment tools alone, unless there is an age-weight item included in the assessment tool which will lower the total score when the offender reaches a certain age (age band cutoffs will vary depending on the risk assessment tool being used).

Third-generation risk assessment includes both static and dynamic risk factors. These have been called 'risk/need assessments' by Andrews and Bonta (2006) as they address both the risk and need principles of the RNR framework. The inclusion of dynamic risk factors gives treatment providers more comprehensive information on which criminogenic needs must be targeted during treatment, and also allows for treatment change to be measured if the assessment is carried out both before and after treatment has occurred; offenders can decrease their risk scores on dynamic risk items, therefore being able to demonstrate a lower level of risk overall, unlike the risk assessment tools that use only static risk factors. Risk assessment

measures that use both static and dynamic factors therefore have greater utility and have also proven to be effective at predicting initial risk level (Andrews et al., 2006; Gendreau, Goggin, & Smith, 2002; R. K. Hanson, Bourgon, Helmus, & Hodgson, 2009; Kroner & Mills, 2001), and some of the more common third-generation assessment tools include the Sexual Violence Risk-20 (SVR-20; Boer, Hart, Kropp, & Webster, 1997), the Structured Assessment of Risk and Need Framework (SARN; Thornton, 2002; Webster et al., 2006), and the Violence Risk Scale – Sexual Offender Version (VRS-SO; Olver, Wong, Nicholaichuk, & Gordon, 2007; Wong & Olver, 2010). Using third-generation assessment measures allows risk assessment to inform level of risk, treatment targets, effects of treatment, and offender management, as opposed to level of risk and initial treatment targets alone.

Fourth-generation risk assessment is considered to be the ‘gold-standard’ for risk assessment. Second- and third-generation assessment successfully address the risk and need principles of the RNR framework, but the responsivity principle is not attended to. Because of the importance of ensuring that treatment is delivered in a way that is appropriate for an offender, it makes sense for assessment to include factors related to responsivity. Andrews and Bonta (2006) consider fourth-generation assessment as ‘risk/need assessment’ combined with case management. The case management aspect ensures that the risk and need principles are being adhered to throughout treatment, as well as addressing the responsivity principle, providing a measure of treatment change. An example of a fourth-generation assessment is the Level of Service/Case Management Inventory (LS/CMI), which includes the factors of the LSI-R, plus specifically identifying individual criminogenic needs to be addressed, responsivity considerations, a case management plan and progress record (Andrews, Bonta, & Wormith, 2004; Wormith, Hogg, & Guzzo, 2012). The assessment is more intensive and continuous over

the treatment period than second- or third-generation assessment, and gives more information to judicial staff in cases such as parole hearings and organising community supervision post-release, with the inclusion of the case-management aspect. However, to date, there has been very little empirical research on the utility of fourth-generation assessment tools with sex offenders, so the value of using fourth-generation assessment over and above third-generation assessment for this offender population has not yet been substantiated. It is important to note that a core aspect of the LS/CMI is the clinical (professional judgement) override, and in a recent evaluation of the LS/CMI with a Canadian sex offender sample, the use of the clinical judgement application actually reduced the predictive validity of the measure, indicating that structured clinical judgement, even when guided by empirically-driven risk assessment measures, does not add value to the statement of risk over and above the initial actuarial level of risk obtained (Wormith et al., 2012).

Risk assessment measures for sexual offenders

The identification of sex offenders as a mostly distinct group of offenders, with some unique characteristics and risk factors for recidivism, has led to the creation of assessment measures tailored specifically for sex offenders. These assessment measures address static and dynamic factors described previously that are specific to sexual offending, such as sexual deviance, victim type and attitudes towards offending, as well as factors that are predictive for all offenders, such as number of previous convictions and age. A number of actuarial risk assessment measures for sex offenders are used worldwide in correctional practice today, including and the Rapid Risk Assessment of Sexual Offence Recidivism (RRASOR; R.K. Hanson, 1997), the Static-99 (Hanson & Thornton, 2000), and the Minnesota Sex Offender

Screening Tool – Revised (MnSOST-R; (Epperson, Kaul, & Hesselton, 1998)(Langton, Barbaree, Harkins, & Peacock, 2008). The Automated Sexual Recidivism Scale (ASRS; Skelton, Riley, Wales, & Vess, 2006) is also widely used in New Zealand, where it was developed. Because the ASRS is utilised in the current study, and was developed out of the Static-99, both assessment measures will be described here.

The Static-99 was designed by Hanson and Thornton (2000) and combines items from the RRASOR and the Structured Anchored Clinical Judgement scale (SACJ). The SACJ focuses on general criminal history as opposed to sexual offending history, whereas the RRASOR is comprised of four items related to sexual offending history: Relationship to victim, victim gender, prior sexual offences and age of offender (H. E. Barbaree et al., 2001; R.K. Hanson, 1997). The Static-99 is a ten-item scale centred on four domains: sexual deviance, range of potential victims, anti-sociability and persistence of offending. Each item on the scale is scored dichotomously; 0 = absent and 1 = present. The scores from the Static-99 classify an offender into one of four risk levels. An offender can be given a risk level of low, medium-low, medium-high or high (Hanson & Thornton, 2000). The predictive accuracy of risk assessment measures is normally given using the receiver-operating characteristic (ROC) area under the curve (AUC) value. The ROC AUC curve is a graphical plot that illustrates the diagnostic ability of a binary classifier system by plotting the hit rate (true positive rate) against the false alarm rate (false positive rate) for all possible cutoff (criterion) scores. ROC methods provide information about whether the use of a given risk assessment measure is warranted, and also allow for the predictive accuracy of different risk assessment measures to be compared (Rice & Harris, 1995). An AUC value can range from 0.5 to 1, where 0.5 shows predictive accuracy no greater than chance and 1 shows perfect predictive accuracy. In forensic settings, it is common for the effect

size to be considered ‘small’ for AUC values between 0.55 and 0.63, ‘moderate’ for AUC values between 0.64 and 0.70, and ‘good’ for AUC values of 0.71 and above (Rice & Harris, 2005). The AUC value can be interpreted as the probability that a randomly selected recidivist will have a higher score on the risk assessment measure than a randomly selected non-recidivist. The Static-99 has demonstrated AUC values between 0.66 and 0.76 for sexual recidivism, showing moderate to good predictive accuracy in a number of international studies since its inception (Craig, Browne, & Stringer, 2004; Ducro & Pham, 2006; Hanson & Thornton, 2000). A meta-analysis of 118 prediction studies by Hanson and Morton-Bourgon (2009) found that out of all the prediction measures (including unstructured and structured clinical judgement) actuarial measures designed for sexual recidivism were the most effective at predicting recidivism. More importantly, the Static-99 was the best supported measure for predicting sexual recidivism overall, and was validated in 21 independent studies included in the meta-analysis (Hanson & Morton-Bourgon, 2009). The Static-99 remains the most widely used and best validated risk assessment tools for sexual offenders (Allan et al., 2007; Anderson & Hanson, 2010; Hanson, 2006; Hanson & Morton-Bourgon, 2009).

The ASRS was developed in New Zealand by Skelton and colleagues (2006) as a response to government legislation which required extended parole supervision for child sex offenders judged as having an ‘elevated risk of reoffending’. The legislation meant there was an increasing need to assess the risk level of large numbers of sexual offenders both quickly and accurately (Alexander Skelton et al., 2006). The ASRS includes seven of the ten items from the Static-99 (including prior sex offences, prior violent offences, having a male victim, and prior sentencing dates), and all seven items can be scored using an offender’s official criminal record from a computer database maintained by the Department of Corrections (Integrated Offender

Management System). This allowed quick calculations of risk level to be carried out on large groups of offenders using immediately available information. Similar to the Static-99, total scores from the ASRS classify offenders into one of four risk levels: low, medium-low, medium-high, and high. The ASRS was tested in New Zealand on three cohorts of child molesters, with follow-up periods of five, ten and fifteen years, and consistently demonstrated AUC values of 0.70 or above, establishing predictive accuracy similar to the Static-99 (Skelton et al., 2006). A more recent evaluation of the ASRS, using 5889 sexual offenders released from prison in New Zealand, found AUC values for 5-year, 10-year, and any sexual recidivism of 0.68, 0.67, and 0.66, respectively (Grace & Wilson, 2015). In addition, the different risk bands for the ASRS corresponded to different recidivism rates, comparable to the Static-99. Vess and Skelton (2010) measured the recidivism rates of 2435 sex offenders released from incarceration between 1990 and 1995. After an average follow-up period of 15 years, 6-7% of low-risk offenders (as classified by the ASRS) had been convicted of a new sexual offence, whereas 34-38% of high-risk offenders (as classified by the ASRS) had been convicted of a new sexual offence (Vess & Skelton, 2010). The distribution of recidivism rates across the ASRS risk levels were identical for Grace and Wilson (2015).

There are also more recent risk assessments for sexual offenders which include dynamic factors, such as the Sex Offender Need Assessment Rating (SONAR; Hanson & Harris, 2001), the Structured Assessment of Risk and Need Framework (SARN; Thornton, 2002; Webster et al., 2006), and the Violence Risk Scale – Sex Offender Version (VRS-SO; Olver et al., 2007; Wong, Olver, Nicholaichuk, & Gordon, 2003).

Numerous studies have found that including dynamic factors for sex offender risk assessment is beneficial, with dynamic factors (such as sexual deviance) making a significant

contribution to risk prediction after static factors were controlled for (Allan et al., 2007; Beggs & Grace, 2010; Craig et al., 2007; Olver et al., 2007). Hanson and Harris (2000) also found that when comparing recidivists and non-recidivists on static, stable dynamic and acute dynamic risk factors, stable dynamic factors distinguished the recidivists from the non-recidivists more than acute dynamic or static factors. There has, however, been some mixed results regarding the efficacy of dynamic risk assessment over static risk assessment for sexual offenders; one study investigating the SARN framework found only small AUC values of 0.59 and 0.57 for 2-year, and 4-year, recidivism rates respectively (Tully, Browne, & Craig, 2015), with the AUC values not reaching significance in each case.

Even though much improvement has been made over the last ten years on the importance and application of dynamic risk factors to the management of sex offenders, actuarial risk assessments are still used more often. In North America's 2002 Safer Society Survey, the Static-99 was the most common assessment measure for sexual offenders, used in half of the treatment programs surveyed (McGrath, Cumming, & Burchard, 2003). The RRASOR was the second most common, used in 35% of the programs. The 2009 Safer Society Survey identified that use of the RRASOR had not changed in the years since the previous 2002 survey, and that use of the Static-99 had increased, and was now reported as being used in 71% of community programmes, and 80% of residential programmes (McGrath, Cumming, Burchard, Zeoli, & Ellerby, 2010). This can be attributed partly to the fact that research on the use of dynamic factors in risk assessment is intrinsically linked to demonstrating the dynamic risk factors are truly amenable to change, and that successful treatment *does* alter dynamic risk factors. Uncertainty about the ability of dynamic risk factors to change with treatment may be holding back more widespread use of dynamic risk assessment measures (Hanson & Harris, 2000; Allan et al., 2007).

Additionally, the assessment procedures required to gather the necessary information for completing dynamic risk assessment mean that the assessments themselves are inherently more vulnerable to biases of clinical judgement or opinion than their static predecessors. Another reason why actuarial assessments are often preferred is related to the ease of which risk assessments are administered. Many dynamic risk factors require more intensive case details than actuarial risk factors, and accurate measures of some dynamic factors involve time consuming practices such as phallometric assessment of sexual preference. On the other hand, many actuarial measures, such as the ASRS and RRASOR, have been designed to be administered quickly and easily using only demographic and key offence history information. The fact that actuarial measures show moderate-to-good predictive accuracy and are quick to administer can help explain why they are still favoured in judicial systems, even in light of the benefits of dynamic factors for more comprehensive risk assessment and treatment planning, and the ability to detect positive change in those risk factors over time. This position is strengthened in light of the growing evidence that static risk factors can serve as markers for their dynamic counterparts, and offer practitioners additional information regarding potential treatment targets without the need for extensive interviews or other time-consuming assessments (Craig et al., 2007; Wakeling et al., 2013; Ward & Beech, 2004).

Issues with assessing risk of sexual recidivism

There are a number of conceptual and methodological issues that researchers and practitioners must consider when assessing the risk of sexual recidivism for any offender, given that the risk assessment outcome often has severe and lasting consequences for the offender, as well as informing decisions about treatment resources. Although some of these issues can be

managed more easily than others, it is imperative that there is an awareness of all potential issues and the effects of those issues, when researching or implementing risk assessment measures for sexual offenders. Some of the most significant issues around risk assessment will be discussed in this section, starting with methodological issues such as follow-up time, social desirability, and operational definitions. Plea-bargaining, low base rates (both for initial offending, and recidivism), and actual versus reported rates of offending will also be examined.

Follow-up time

The follow-up periods for most studies are between one year and five years (R. Karl Hanson, 2002; R. Karl Hanson & Morton-Bourgon, 2005). For crimes such as drug or other general offences, five years would be a substantial follow-up period, but it is not uncommon for sex offenders to abstain for more than 5 years before committing a new offence. Hanson (2000) observes that recidivism rates can increase by 30-40% if the follow-up period is extended over 20 years. This may be of concern as the longest follow-up period from the forty-three studies in Hanson's (2002) meta-analysis was 16 years. Studies that have an especially small follow-up length of one or two years may give a false representation of the actual rates of recidivism, and to the subsequent risk level attached to the observed recidivism rates. If all studies had a follow-up period of 20 years, the general observed recidivism rates for sex offenders could look rather different.

Operational definitions

It is vital that the operational definitions in any study are stated explicitly. For research on sex offending, one of the most important definitions is 'recidivism.' Many different measures of recidivism can be used, for example, re-arrest, new charges, or re-conviction. Additionally, the type of sexual offence included in the measure of recidivism can vary. Non-

contact offending, in particular, is sometimes treated separately to other types of sexual offending; for instance, the coding guidelines for the Static-99R recommend the use of the Static-99R as a risk prediction tool for offenders with non-contact convictions for exhibitionism or break-and-enter fetishists, but do not recommend the use of the Static-99R for offenders with non-contact convictions for possession or distribution of pornography, including child pornography (Phenix et al., 2016). Depending on the definition used for recidivism, the observed recidivism rates can be markedly different. For this reason, it is crucial that the definition of recidivism be stated clearly in every study.

The concept of 'risk' can also be quantified in multiple ways; most commonly, relative risk or absolute risk. Absolute risk is the most commonly used in sex offender research, and is generally how risk will be reported using total scores on static or dynamic risk assessment measures (i.e. ASRS-R, STATIC-99). Absolute risk advises on the absolute (as opposed to relative) likelihood of reoffending; for example, identifying if an offender is more likely to sexually offend than not to sexually offend over a particular period of time. Additionally, absolute risk gives general feedback about the base rates of sexual offending, and the expected rates of offending for offenders who are given a specific label of risk (i.e. 'low risk' or 'high risk'). The difficulty with absolute risk is that true recidivism rates are very difficult to estimate accurately, and are impacted by elements of research design such as follow-up time, and the discrepancy between actual and reported rates of offending (R. Karl Hanson et al., 2016).

Conversely, the relative risk of recidivism refers to how likely an offender is to reoffend compared to other offenders with lower or higher risk scores on a risk measure, and can be computed using risk ratios, risk bands, or risk percentiles. It can also be used to compare the risk of offending over time (i.e. compare initial risk levels at the time of an offender's release to

their risk of offending 10 years post-release). Risk ratios are useful as they give more of a context to the statement of risk being made, but need to be considered alongside the expected base rates of offending to give the most inclusive estimate of risk. Risk ratios have also been found to be stable across samples, follow-up times, and settings, which offers significant advantages for risk assessment (R. Karl Hanson, Babchishin, Helmus, & Thornton, 2013; R. Karl Hanson et al., 2016). It is imperative that the definition of risk is outlined in detail for any sex offender research and risk assessment outcomes, as there is room for misinterpretation of risk information by those who will be acting on that information (i.e. judges, juries, prison staff, or parole officers). There are serious consequences that follow a label of risk as an offender moves through the justice system, and it is important that everyone involved understands the connotations attached to a 'low risk' or 'high risk' label, and the evidence behind that label.

Social desirability

Social desirability can be defined as the desire to make a favourable impression on others (Paulhus, 2002; Tan & Grace, 2008), and can be a confounding influence when evaluating the recidivism risk of sex offenders and using data that relies on self-reports (e.g., paper-and-pencil psychometric tests). The completion of a treatment programme or improvement on psychological risk factors for sex offenders can have beneficial results with regard to length of sentence served, and parole board decisions. The incentive for offenders completing treatment or showing that they have 'changed' in terms of favourable parole evaluation can become problematic for accurate risk assessment. Socially desirable responding (SDR) is most apparent in the self-report measures that are frequently used to evaluate psychological risk factors, and can be exacerbated by the transparency of items in the measure. However, there are further questionnaires that can be done to obtain a measure of how much socially desirable responding

an offender may be providing, in addition to statistically controlling for SDR (see Tan & Grace, 2008 for a full evaluation of SDR with sex offenders). No matter how SDR is controlled within a study, it is essential that authors are aware of the phenomenon and consider the possible effect it could have on the results of their study if they are utilising third- or fourth-generation risk assessments or investigating dynamic/psychological risk factors for sex offenders. However, it has also been noted in recent research that even when SDR is present among sexual offenders, it appears to be more of a personality trait than a bias that is empirically linked to the likelihood of recidivism. It was found that even though SDR was associated with approximately 10% of the variance observed in psychometric self-reporting, controlling for SDR in a sample of 218 child sex offenders had little effect on the predictive or construct validity of dynamic risk measures (Stevens, Tan, & Grace, 2016). Static or historical risk factors and second-generation risk assessment measures are not able to be influenced by SDR.

Base rates of sexual offending

The base rates of general and sexual offending have been falling across the Western world (including NZ) over the last 20 years. In the United States, rates of sexual offending against children declined 49% between 1990 and 2004 (Mishra & Lalumière, 2009). Similar trends have been observed in Canada, the U.K. and New Zealand. The number of sex offences (per 10,000 population) reported to the New Zealand Police in 1994 was 9.80. This number decreased to 8.60 in the year 2000, and decreased further in 2010 to 6.82 offences per 10,000 population (New Zealand Police, 2000; New Zealand Police, 2010). In general, the total crime rates, especially violent crime rates, have been declining steadily since around 1990. In New Zealand, total crime rates reached an all-time peak in 1992 with 1,320 offences per 10,000 population. This rate decreased to 1,110 in 2000, and decreased further in 2010 to 1,018 (New

Zealand Police, 2000; New Zealand Police, 2010). Factors hypothesised to contribute to the decline include the ageing population, longer incarceration periods (principally in the U.S.), decrease in general risky behaviour, socioeconomic factors and public policy shifts (Mishra & Lalumière, 2009). However, the trend for sexual offending has shifted in the last few years, with a sharp increase in sex offence reporting to police, both in New Zealand and overseas. For instance, the New Zealand Police recorded 3,919 crimes of sexual assault and other related offences in 2013, which rose to 6,202 for the 12 months between August 2016 and August 2017 (New Zealand Police, 2017). Across England and Wales, the number of sexual offences recorded in the year ending March 2017 increased by 14% compared with the previous year, and is now at the highest level recorded since the introduction of the National Crime Recording Standard (NCRS) in 2002 (Home Office, 2017). This has been linked to an increase in media attention since 2012 around sexual harassment and abuse, including a number of high-profile cases that demanded governments, police departments, and other large institutions to make a public stand on the unacceptability of sexually inappropriate or aggressive behaviour, and that such behaviour would be taken extremely seriously if brought to their attention. The establishment of Operation Yewtree in October 2012 by the Metropolitan Police in the United Kingdom is one such example; a major operation investigating historical sexual crimes that was launched after allegations against the late Jimmy Saville and other British media personalities. The “Yewtree effect” has been credited for an increase in historical reporting, and it has been noted that although the increase in reporting has been mainly driven by the reporting of current sexual offences, 33% of the recent reporting increase has been due to historical offences, with the number of non-recent sexual offences recorded by the police having more than tripled in the last five years (Home Office, 2017). The consensus appears to be that the actual rates of offending

are not increasing, but the reported rates are, which would be a step in the right direction in terms of obtaining a more accurate idea of the scope of sexual offending that occurs in the community (Home Office, 2017; NZ Police, 2016).

Policy measures and public awareness are two factors especially relevant to rates of sexual offending. The public view of sex offenders against children especially has led to exceptional policy measures such as preventative detention, indeterminate sentences and community notification (Jones, Finkelhor, & Halter, 2006; Maruna, 2011). These measures keep many repeat offenders incarcerated indefinitely, or monitored closely once released from prison. Community notification also allows parents and other adults to be aware of possible threats to children. Many parents are more vigilant to the signs of ‘grooming’ and other predatory behaviour and signs of abuse than they were a few decades ago, due to increased media and public awareness of child sex offenders and their methods of victimisation (Hanson & Thornton, 2000; Leslie Helmus & Hanson, 2009; Quinsey et al., 1995).

The low official base-rates of sexual offending, and the low recidivism rates, which are around 10-15%, make it extremely difficult to accurately assess an individual’s risk of recidivism, as the chances of any given offender committing another sexual offence against a child are relatively low to start with (L. a. Craig et al., 2007; R. K. Hanson & Harris, 2001; Mann et al., 2010). Given these base rates, the sample size of a study needs to be very large to have sufficient statistical power, and as the population of sex offenders is small compared to other criminals, achieving these sample sizes can be difficult. For this reason, meta-analyses are extremely valuable to the study of sex offenders as they make it possible to assess large numbers of sex offenders collectively (Babchishin, Hanson, & Hermann, 2011; Barth et al., 2013; Hall, 1995; R. Karl Hanson, 2002; Schmucker & Losel, 2005).

Another potential issue that low base rates pose for the risk assessment of sex offenders is related to the validity and stability of the most commonly used risk assessment measures, such as the STATIC-99. The expected recidivism rates for each risk level of the STATIC-99 were validated using data attached to studies from the 1960s-1980s, and it has been shown that the expected base rates for sex offending have changed since those decades. Therefore, the expected rates of recidivism attached to the risk levels of risk assessment measures such as the STATIC-99 may need to be revisited and adjusted based on up-to-date offending rates (Martin Rettenberger, Briken, Turner, & Eher, 2015). New Zealand research will be less affected by these cohort effects, as the ASRS is the standard risk assessment measure applied when anyone convicted of a sexual offence enters the justice system, and the ASRS was developed using samples of offenders released from New Zealand prisons between 1992 and 2002, whose 5-year follow up times ranged from 1997-2007 (Alexander Skelton et al., 2006).

Recorded vs. actual rates of offending

Recorded offending rates differ from actual offending rates with regard to all crime, but for sexual offences the discrepancy is much higher, and is considered to be especially high for sexual offences against children (McGee et al., 2011). A large proportion of offences against children are unreported, due to the young age of the victims; it is feasible that they either lack comprehension of what is taking place, or they are scared or manipulated into keeping quiet. This could be most notable when the offender is a family member or friend, or someone in a position of authority to the child, such as a teacher or religious figure.

For adult victims of sexual offences, there are a number of reasons why victims may choose not to come forward and report the offences to the police, such as a lack of confidence in the ability of the police or the courts to secure a conviction, concerns over victim blaming or

shaming either from those involved in the justice process or those close to them, fear of the offender themselves, not wanting to be labelled as a 'victim,' or not feeling psychologically or emotionally capable of going through the process of police interviews or taking the stand in court (which is often required to have any chance of a conviction if the case went to trial). The process for victims can be challenging, long, and gruelling, and it is understandable that many people might choose to avoid the inevitable personal trauma that is attached to the justice process of sex offence prosecution. Culture can also play a significant role in the decision to report offences to the police, or not report them; different cultures and different religions have very different views towards sex, family, and community, and these cultural norms and expectations influence how offending is processed and dealt with. Disclosing that sexual assault or abuse has taken place is significantly less likely in a culture that considers the topic of sex as taboo, considers virginity until marriage of upmost importance, has homophobic values (in cases where the victim and perpetrator are both male), or has strong cultural practices that subjugate women (M. C. Kenny & McEachern, 2000). Some cultural beliefs not only suppress the disclosure of offending, but serve as justification for the offending behaviour itself; for example, if a woman engages in a sexual relationship outside of marriage, then that woman is seen to have encouraged the offender to rape them, and her own promiscuous behaviour is accepted as the cause of the sexual assault (Gahir & Garrett, 1999). Furthermore, in some cultures the concept of 'losing face' or losing the social standing in their community from disclosing any sexual abuse is significant enough to keep offending behaviour hidden (either from the side of the perpetrator, or the side of the victim); protecting the family name and the family's societal standing is seen as a higher priority than bringing perpetrators to justice or supporting the victims of sexual offending (Hall, Sue, Narang, & Lilly, 2000).

Although official offence records are under-representative of true recidivism rates, they are consistently used as they are the easiest measure to access and are less subject to bias than other measures, such as self-reports (Quinsey, Harris, Rice, & Lalumiere, 1993). Almost all studies use official measures of recidivism, but the reports may be giving only a partial account of actual recidivism rates and therefore a partial account of the accuracy of risk assessment. It has been argued that including arrests and other unofficial reports of criminal activity, instead of only offences that have resulted in conviction, will allow for a more reliable representation of recidivism and offending rates (R. Karl Hanson, 2000). No matter which measure of recidivism is used in a study, it must be clearly stated and the implications of using the chosen measure should be discussed. It is also apparent that cultural influences need to be taken into consideration as part of the risk assessment process, in terms of potential confounding or aggravating risk factors over and above the standard recognised and accepted risk factors for sexual offending, and in terms of culture having a potential negative effect on the ability of researchers to gain accurate risk and recidivism data.

Pleas-bargaining: violent and general offending

Another issue that may affect the observed rates of recidivism is that of violent or other non-sexual reconvictions. Quinsey et al. (1993) noted that plea-bargaining is abundant with sex offence charges. Sex offences can be reduced or compromised so that a non-sexual charge is laid for a sexual offence. There may also be violent charges laid that have a sexual motivation, and are therefore still indicative of sexual recidivism (R. Karl Hanson, 2000, 2002; Quinsey et al., 1993). It has also been found that plea-bargaining is increasing in correspondence with the notification and registration policies of specific states in the US; the knowledge that conviction for a sexual offence will lead to a lifetime on a sex offender register, or to a lifetime of severe

community restrictions, can influence the likelihood of plea-bargaining a sexual offence down to a violent or general offence. This effect can be particularly strong for juvenile or younger adult offenders, who have the majority of their lives ahead of them (Letourneau, Armstrong, Bandyopadhyay, & Sinha, 2013). Consequently, the recidivism rates for violent and general offending should also be considered in any study of treatment efficacy with sexual offenders, as they may also be suggestive of sexual recidivism.

In summary, several of these challenges are due to the nature and characteristics of the offender population being studied, and are beyond the control of researchers and the professionals carrying out risk assessments in the field. Nonetheless, some common potential threats to validity can be removed if the study is carefully conducted and it is imperative that authors do their best to produce well-controlled risk assessment studies. One factor that can also be effectively considered when researching the risk assessment of sex offenders is the impact of age on the likelihood of recidivism, and the relative change in criminal behaviour over an offender's lifetime.

Desistance and the Effect of Aging

The most accurate definition of desistance has been debated over the years, but the standard definition is that desistance is the causal process supporting the termination, or cessation, of offending behaviour (Laub & Sampson, 2001). According to this view, desistance is a process that likely begins before the actual cessation of offending behaviour, and continues after the cessation of offending behaviour, as opposed to simply being the discrete moment when offending behaviour stops. The research on desistance from general crime has been extensive,

but there is a distinct gap in the literature when it comes to desistance from sexual crime. Lussier and colleagues (2010) stated that there had been no empirical study investigating the offending trajectories of adult sex offenders at the time their research was published (Lussier, Tzoumakis, Cale, & Amirault, 2010). There has also been little research published on the reasons why people desist from sexual crime, and how the desistance actually occurs, despite the well-established finding that sexual offending occurs at low rates of recidivism compared to the recidivism rates for general and violent offending; thereby acknowledging that the majority of offenders do desist from sexual crime without showing strong interest in the possible workings behind their desistance mechanisms (Farmer, McAlinden, & Maruna, 2015). The current study will examine the evidence for desistance from sexual offending in New Zealand, and determine whether offenders desist only from sexual crime, or desist from violent and general offending as well. Gathering evidence on the rates of desistance in New Zealand will allow for future New Zealand studies to investigate the specific pathways and reasons for the desistance, and be able to apply this knowledge to case management plans and other policy decisions that could affect the likelihood of desistance occurring, as well as tailoring treatment to include more focus on protective factors that promote desistance, instead of the current deficit focus on reducing the factors associated to recidivism. There is a strong argument for an equal balance of promoting protective factors and reducing risk factors in regards to treating and managing sexual offenders, both in prison and in community settings, which has been acknowledged in recent years with the creation of the Good Lives Model of offending (GLM; Ward, 2002; Ward & Marshall, 2004) to serve as an alternative model to the more risk-oriented RNR model of offending behaviour (the GLM will be covered in more detail in a later section of this literature review). Focusing solely on risk factors can disadvantage both the offender, and the wider community, if vital

opportunities to reduce offending by utilising protective factors are not taken advantage of. This will often occur when the justice system, media, and public opinion all favour a punitive approach to managing sexual offenders.

Age and desistance: Age at release or age of onset?

The relationship between age and the likelihood of sexual offending is well-validated, and a number of actuarial risk assessments include items that identify the youngest offenders as being at the highest risk of reoffending sexually, with the youngest offenders being classified as those younger than 25-30 years of age depending on the specific risk assessment being used. For the Static-99 and the ASRS, 25 years old is used as the cut-off age for the 'young offender' item; for the SORAG the cut-off age is 27 years old, and for the Mn-SOST-R the cut-off age is 30 years old (Lussier et al., 2010; Alexander Skelton et al., 2006). However, it is only in more recent years than the aging offender has also been taken in to consideration by actuarial risk assessments, with the development of the Static-99R, Static-2002R, and ASRS-R, among others, including age-weight items that account for both the increased risk of the youngest offenders and the reduced risk of the older offenders, especially for those above 50 years of age (Grace & Wilson, 2018; R. Karl Hanson et al., 2016; R Karl Hanson, Helmus, & Thornton, 2010). The revisions of these risk assessment measures to account for the impact of the aging process on sexual recidivism coincided with an increase in the literature outlining the importance of the age at release as a continuous variable, as opposed to a dichotomous 'under 25 years old' or 'over 25 years old' factor. However, the increase in research on the importance of the role of aging has unearthed a new debate within the topic; whether age at the time of release, or age at the onset of offending, impacts the risk of recidivism and the trajectory of offending more. So far, there is no

conclusive answer to that debate, and the current findings indicate that both age at release and age of onset may be important for predicting the risk of recidivism.

Multiple studies have identified the importance of aging on the persistence of criminal behaviour and the existence of an inverse relationship between age at release and sexual recidivism for all types of sexual offenders; adult rapists, extra-familial child molesters, incest offenders, and those with mixed victims (H. E. Barbaree, Blanchard, & Langton, 2003; Howard E. Barbaree, Langton, & Blanchard, 2007; R. Karl Hanson, 2002; R. Karl Hanson & Bussière, 1996; Nicholaichuk, Olver, Gu, & Wong, 2014; Alex Skelton & Vess, 2008). The effect appears to be most substantial for offenders over 50 years of age, and Hanson (2002) found that the moderating effect of age on recidivism did not significantly impact the offending of child molesters until they reached 50 years of age; which is understandable for offenders with strong indicators of sexual deviance, such as paedophilia. Harris and Hanson (2004) found that in a sample of 4,724 sex offenders, with a 15-year follow-up period, offenders over 50 years of age reoffended at half the rate of those under 50 years of age (12% and 26%, respectively). In some instances, age at release has been found to have similar or greater predictive accuracy to the Static-99 for sexual, violent and general recidivism (Lussier & Healey, 2009). Lussier and Healey (2009) also demonstrated that age of onset was not significantly predictive of offending behaviour once age at release had been controlled for, which suggest that desistance from sexual offending will occur regardless of when the offending behaviour began. It has been postulated that the moderating effect of age on sexual recidivism could be due to a combination of factors, including a diminished sexual drive, reduced opportunities to offend (which could also include the physical wear and tear of aging; i.e. reduced strength and agility impacting on the offender's ability to physically act on any opportunity to offend), and improved self-control or the

maturation of other emotional and interpersonal skills that could have played an aggravating role in their initial offending behaviour (R. Karl Hanson, 2002; A. J. R. Harris & Hanson, 2004).

There is also evidence for the moderating effect of the age at which offending behaviour begins, with the focus of research being on those who begin such behaviour in adolescence. Harris and Rice (2007) found that age of onset was a stronger predictor of sexual recidivism than age at release, and found that when age of onset and the risk score given using the Violence Risk Appraisal Guide (VRAG) were controlled for, age at release had no significant impact on the likelihood of recidivism. The authors purported that an early pattern of antisocial behaviour has a greater impact on recidivism risk than aging (Grant T. Harris & Rice, 2007). Although Nicholaichuk and colleagues (2014) found that age at release was significantly predictive of sexual, violent and general recidivism, they also found that after controlling for the early onset of criminality, age at release was not significantly predictive of sexual recidivism, but was still significantly predictive of violent and general recidivism. Additionally, Beaudry-Cyr and colleagues (2017) identified that juvenile non-sexual offending was one of the strongest predictors of sex offending persistence amongst a sample of 495 convicted male sex offenders released between 1990 and 1999 (followed for 8 years post-release). They also found that only 6% of the sample had committed offences that were sexual in nature as juveniles, indicating that non-sexual juvenile offending plays a more significant role than sexual juvenile offending in the likelihood of forming persistent sexual offence behaviour as an adult. This finding also highlights the versatile offence history that the majority of sexual offenders display, and the empirical lack of offence typology that is often assumed for offenders who have committed sexual crimes; that sex offenders are a very distinct population of offenders (Beaudry-Cyr, Jennings, Zgoba, & Tewksbury, 2017). This concept is further supported by previous evidence

for the rarity of sexual offending behaviour among juvenile populations (rates of approximately 1.5%), and the lack of continuity of sexual offending from adolescence in to adulthood; the vast majority of those who do offend sexually in adolescence do not go on to sexually offend in adulthood (Lussier & Cale, 2013; Zimring, Jennings, Piquero, & Hays, 2009).

In summary, it is apparent that both age of onset and age at release can have a significant impact on the risk of recidivism, and that it is beneficial to utilise one, or both, of these age factors in actuarial risk assessment for sexual offenders. Regardless of which age factor is considered the most significant for risk prediction, the recognition that it is not only possible, but quite likely, that an offender's criminal behaviour and risk of recidivism can change over time, supports the need for more extensive research on the desistance from sexual offending. The evidence for the lack of continuity of sexual offending and the inverse relationship that continues to be demonstrated between age and recidivism risk highlights the faults of actuarial assessments that do not attempt to account for the process of aging, and of the assumption that the propensity to offend is stable for sexual offenders; that all high-risk sexual offenders will continue to remain high-risk as they get older.

The "Big 3" established pathways to desistance

As previously discussed, age can play a significant role in desistance from criminal behaviour, including sexual offending, but there are also many young offenders who do not persist with their offending behaviour who must be following a differing pathway towards desistance, or have significant factors leading them towards desistance other than the effect of ageing alone. The research to date has identified three main pathways to general criminal desistance; age or maturation (sometimes called natural desistance), social controls, or cognitive

transformation. Social controls can be described as either formal or informal, with the focus of general desistance research on social controls pertaining to the latter. These pathways have either been discussed as three separate pathways leading to a similar end, or more recently, as connected pathways that may have a significant amount of interdependence. Although the research on these three pathways for general criminal desistance is substantial, limited research has been carried out investigating the application of these pathways to sexual offenders specifically (D. A. Harris, 2014; Kazemian, 2007; Lasher & McGrath, 2017; LeBel, Burnett, Maruna, & Bushway, 2008; Lussier & McCuish, 2016; Paternoster & Bushway, 2009).

Formal social controls are something that affects the vast majority of convicted offenders, especially those convicted of sexual crimes; incarceration or community justice measures such as home detention and monitoring, mandated treatment programmes or drug testing, as well as other possible imposed sanctions and restrictions. Informal social controls include stable employment, marriage, parenthood or other family responsibility, military service, and educational milestones such as graduation from high school. (Lasher & McGrath, 2017; Laub & Sampson, 2001, 2003) Whether formal or informal, social controls limit the opportunities for offending behaviour to be carried out; however, their subsequent impact on the process of desistance from crime is not always linear. Formal social controls exert a higher level of direct control on the offender, which can create desistance through necessity as opposed to active choice or change in the offender, but due to the fact that formal social controls are enforced (and often the manner in which they are enforced), they dramatically minimise the amount of personal agency an offender has over their own life, which in turn has a negative effect on the likelihood of meaningful and long-lasting desistance occurring. Formal controls can create desistance in the form of a lack of future offending for the length of time that such controls are in place, but the

nature of the control could mean that the chance of reoffending actually increased once the formal control period has come to end. Additionally, formal controls hinder the attainment of informal social controls, and informal social controls have a significantly more positive and meaningful impact on an offender, and on the process of desistance in general. Formal controls placed on sexual offenders in the form of community restrictions and public notification can directly impede their ability to obtain a permanent place to live or obtain a meaningful job or any type of employment, and reduce the likelihood of prosocial future relationships; either intimate partner relationships or peer friendships (Göbbels, Ward, & Willis, 2012; Kruttschnitt, Uggen, & Shelton, 2000; Lasher & McGrath, 2017; Lussier et al., 2016; Willis, Levenson, & Ward, 2010). Sampson and Laub (1993) identified that incarceration reduced subsequent job stability in their sample and that reduced job stability, in turn, was a contributing factor for maintaining involvement in general criminal activity. This is a significant issue for the likelihood of desistance when it has been previously found that only 6% of a community sample of 312 randomly selected individuals would be willing to rent housing to a convicted sex offender, and only 30% would be willing to employ a convicted sex offender (Brown, 1999).

Formal controls may also remove former prosocial relationships that the offender had before their conviction, either by being distanced from extended family due to the proximity of a child in that family, divorce or separation from their partner due to the stigma or shame of being attached to a known 'sex offender,' or removal of their own children (even if that removal is considered as justified in the context of their offending). It has been acknowledged that sexual offenders are generally released back in to the community under the same conditions they were living in before, or under even worse conditions than they were living in before (Göbbels et al., 2012; D. A. Harris, 2016; Lussier et al., 2016).

This combination of a direct restriction of personal agency, and the inability for offenders to create meaningful prosocial bonds and build themselves a purposeful life, can often lead to offenders committing more crimes while under formal social controls in the community as they have no alternative positive goals that are within their reach (even if they had been able to generate some internal cognitive change), and those barriers seem greater than the known outcomes of committing another offence, or breaching their supervisory conditions; re-incarceration. This purported mechanism of action can be supported by the high percentage of offenders that end up re-incarcerated solely through technical breaches of their parole or probation conditions; a percentage that can even be higher than the percentage of offenders who end up re-incarcerated for a new sexual, violent, or general offence. Lussier & Gress (2014) found that technical violation of supervisory conditions was the most common negative re-entry outcome for a sample of 169 moderate-to-high risk sexual offenders who had all been released into the community under some level of formal social control; either standard probation services or intensive supervision, with 31% of the sample breaching the conditions of their supervision in a one-year follow-up. The likelihood of technical violations was also higher for offenders who were released under intensive supervision than for those released under standard probation services, and even with the level of supervision across the sample, the observed one-year recidivism rate for any sexual, violent, or general offence was 26% (Lussier & Gress, 2014). This relatively high recidivism rate in a short follow-up period highlights the inability of formal social controls to effectively prevent crime from occurring, and offers further support to confirming that the efficacy of formal social controls for reducing the risk of recidivism is still yet to obtain empirical evidence, while continually demonstrating unintended negative consequences for successful re-entry and desistance outcomes (Bersot & Arrigo, 2015; Göbbels et al., 2012;

Lussier et al., 2016; Willis et al., 2010). However, even with the lack of empirical support, formal social controls are still imposed extensively, and excessively, with the sex offender population in particular; in the U.S. up to two thirds of all correctional clients are under parole supervision at any one time (Kruttschnitt et al., 2000). Additionally, there are now almost one million people on the publicly-accessible sex offender registry in the U.S. (Lussier et al., 2016).

It has been argued that the policy and justice practices for the management of offenders convicted of sexual crimes is directly influenced by the public perception of sex offenders, and their misconception that all sex offenders are dangerous and irredeemable, and should be separated from the rest of society. The public misconceptions surrounding sex offenders can be attributed, at least in part, to the portrayal of sex offenders by the media. Historically, the media has a bias towards reporting the most sensational and serious of all crimes, and this bias is exaggerated even further when it comes to reporting on sexual crimes or offenders. The media are also more likely to use terms such as “sexual predator” or “dangerous paedophile” when describing individuals; often misusing the term “paedophile” to describe any offender convicted of a sexual offence against a child, as opposed to an offender with a distinct sexual attraction to children (which is the correct definition). The effect of this style of reporting on the general public is substantial, and contributes to the strong fear, disgust and anger that is often directed towards sex offenders (D. A. Harris, 2016; Lussier et al., 2016; Willis et al., 2010).

Additionally, reporting that conveys the high number of sex offenders that do not go on to commit a new sexual offence, or the success of sex offender treatment, and the importance of community acceptance and successful re-integration for desistance to occur, is rare to non-existent, compared to the fear-mongering reporting that dominates the news around sex offenders. Of note, a very recent, and somewhat surprising, New Zealand article written for one

of the largest mainstream news websites in the country (stuff.co.nz), covered the question of “What next for sex offenders? NZ grapples with reintegrating serious offenders,” and included comments from multiple highly-regarded and informed individuals involved in aspects of New Zealand criminal justice and re-integration who outlined the importance of successful re-integration and a sense of belonging for sexual offenders to reduce the likelihood of reoffending, and the negative impact that fear-mongering media stories have on the public perception of offenders, which in turn generates ‘penal populism;’ policy that is influenced by, and panders to, the fears and reactions of the public, instead of the empirical evidence for best practice – which is often the opposite of policy driven by penal populism. The event that led to the aforementioned New Zealand article was the inability of the Department of Corrections to be able to house a released child sex offender into a supervised residence in a Christchurch community due to severe public backlash (which had previously been reported on by the same news website), and emphasises the difficulties that the Department of Corrections has balancing the human rights of the offender with the demands of the public when it comes to carrying out probation and supervisory services, especially when the media becomes involved. It should be noted for context that the offender in question was previously incarcerated for his multiple sexual crimes in the past, but it has now been 14 years since his last known offence, and he has had ample opportunity to reoffend in that time. Ironically, and rather tragically, the policy driven by the fears of the public often helps to create the conditions that lead to higher rates of offending and recidivism, and a more unsafe society overall, which can then appear to serve as justification in the eyes of the public for harsh policies and supervision conditions, and consequently the misconceptions around sex offenders are continually perpetuated (Bersot & Arrigo, 2015; Lussier et al., 2016; Willis et al., 2010).

In many countries there are numerous instances of policy being introduced as a response to singular crimes of a very serious nature that cause widespread public outcry; although the crime that leads to the public outcry pertains to one specific offender (that is often representative of the distinct and extreme minority of an offender population), the policy that is enacted will often impact the vast majority of offenders that pass through the justice system from that point onwards, and will always be a policy focused on increasing punitive measures and abating the exaggerated concerns of the public (Bersot & Arrigo, 2015; Lussier et al., 2016). For instance, the rape and murder of a 7-year old girl by her neighbour in 1994, who was a convicted sex offender, led to the creation of a federal law mandating the registration and community notification of all sex offenders in the US (Levenson & D'Amora, 2007). New Zealand is no exception to this rule of thumb; in 2014, the Public Protection Order (PPO) legislation was brought in to effect in response to the aggravated rape and murder of Blessie Gotingco by convicted child sex offender Tony Robertson, who had been released from prison and was being monitored by the Department of Corrections as part of his probation conditions at the time of the murder. To address the criticism over the failure of the monitoring system in Robertson's case, the Public Protection Order legislation allowed the Department of Corrections to keep offenders under the care of the Corrections Department indefinitely, if deemed appropriate, in cases where the offender still poses a 'very high risk of imminent serious sexual or violent offending' after completing a finite prison sentence or after being subject to the most intensive form of an extended supervision order (ESO). Although not incarcerated in a standard prison facility, offenders subject to a PPO will live in a secure civil residence (on prison grounds but separate from the main prison population and buildings). However, it should be noted to New Zealand's credit that the risk threshold for a PPO is set extremely high, so high that to date only one

offender has been subject to a PPO, in late 2016. Moreover, any offender subject to a PPO will have their order reviewed annually, and every five years Corrections must apply to the Court for a review of continuing justification of the PPO, so although the PPO is indefinite it is also open-ended, and can therefore be removed if the Court deems the risk level of the offender to have dropped below the threshold required for a PPO.

Although formal controls may appear to be solely detrimental to the likelihood of desistance occurring (both directly and through the obstruction they pose to obtaining informal social controls), informal social controls themselves have been found to have a significant positive effect on the likelihood of desistance, and are identified as one of the major pathways of successful desistance from crime. Yet, there is some disagreement over the importance of certain informal social controls for the desistance of sex offenders compared to violent or general offenders, and over the changing nature and role of these informal social controls (sometimes referred to in the literature as social bonds) in recent decades. In early desistance research, emphasis was placed on social controls such as marriage and military service, and over time this emphasis has shifted away from military service and on to job stability, or employment satisfaction. Moreover, the research started focusing more on the *quality* of social bonds, as opposed to their mere presence; for example, a happy marriage being supportive of desisting from crime, and an unhappy marriage not being supportive of the same level of desistance (Kazemian, 2007; Laub & Sampson, 2001; LeBel et al., 2008).

Although the research on the impact of stable employment, marriage, and prosocial peers on the desistance process is largely in agreement for general offenders; that these factors, or “hooks for change” are positively correlated with desistance from crime and actively increase the

chance of an offender being able to lead a prosocial life, this finding has not yet been established for sexual offenders (Lussier & McCuish, 2016). Kruttschnitt and colleagues (2000) found that among a sample of 556 convicted male sex offenders, marital status exerted no significant effect on recidivism, but job stability significantly reduced the likelihood of recidivism. Offenders with stable employment at the time of the sentencing for their index offence were 37% less likely to reoffend post-release than offenders with less stable employment histories. It was also found that a history of job stability before conviction led to treatment programmes being completed more successfully; offenders entering treatment with a stable employment history had a 50% reduction in relative risk of recidivism compared to those entering treatment without a stable employment history (Kruttschnitt et al., 2000). However, it is unclear whether job stability itself that leads to improved treatment outcomes, or whether the ability to maintain a stable job is indicative of certain personality or cognitive traits that allow the offender to complete the treatment in a more comprehensive and meaningful way (i.e. increased concentration and focus, ability to take instruction, more accustomed to daily structure and routine, greater capacity for understanding their own offence behaviour and the reasoning behind it). Regardless of the mechanism of action, even though stable employment history prior to conviction and treatment may reduce the risk of recidivism once released, the findings do not address the impact of employment post-release as part of the community re-integration that offenders must go through. It should also be noted that although Kruttschnitt and colleagues (2000) found that marital status had no significant effect on the risk of recidivism in their sample, they indicated that approximately a quarter of offenders who were in a serious long-term relationship (including, but not limited to, marriage) at the time of their arrest, were no longer in that relationship at the time of their sentencing. This finding

highlights the difficulties of maintaining meaningful prosocial bonds when convicted of a sex offence.

The loss of meaningful prosocial bonds can also have a negative effect on the recidivism risk of an offender, especially when that loss includes separation from children; parenting while incarcerated is not possible, and that separation can cause significant damage to both the offender and the child, who is temporarily without a parental figure in their life (Shadd Maruna & Roy, 2007; Roy, 2005). Kruttschnitt and colleagues (2000) also found that although the difference did not quite reach significance, offenders whose relationship ended during their arrest and sentencing proceedings had a higher rate of reoffending than offenders with no prior significant attachment (who were not married, or living with a partner at the time of their arrest). Lussier and McCuish (2016) sampled 500 individuals convicted of a sexual offence while they were under some form of community supervision between 2003 and 2012, and concluded that the informal social controls of employment and marriage had no significant impact on desistance from crime. This finding aligns with another recent study by Blokland and van der Geest (2015), who used data from the Criminal Career and Life-Course Study (a large-scale, longitudinal study of a cohort of individuals whose criminal cases were adjudicated in 1977) to assess a subsample of 500 offenders with an index sexual offence; they found that after a 25-year follow-up, neither marriage nor employment had a significant impact on the risk of sexual recidivism once stable individual differences were accounted for. These results indicate that the role of informal social controls in desistance from sexual offending is more complex than, and potentially quite different to, the role of informal social controls in desistance from general offending. Potential reasons for these differences will be discussed in a slightly later section of the literature review.

There have also been calls in recent research to shift the classification of social bonds again, to keep in closer accord with the modern goals and ideals for a meaningful life, which for many people in Western countries look very different from the goals and ideals of the 1950s, or even the 1990s. The changing nature of social bonds is very apparent when the context of historical research on desistance is taken into consideration; for example, the samples used in Sampson and Laub's landmark longitudinal desistance research consisted of men born between 1922 and 1929, with the study commencing in 1939, in a wartime (and subsequently post-war era) society that held very different social values to the society we live in today (Laub & Sampson, 2001, 2003). The military was held in very high regard, and was seen as very worthwhile career; generating more overt social control than it does today. Furthermore, the institution of marriage and family, and the social control of the church, were very important to society in the past; in the 1940s (and for some decades afterwards), it was expected that people married young and started a family soon afterwards, attended church regularly (or similar place of worship), and tertiary education was relatively uncommon. Desistance research based in this time period, or in the decades following, identified that certain social bonds played a significant role in promoting desistance from crime, and moderating the risk of recidivism, such as marriage, stable employment and a level of attachment to employers and the job in question (Kazemian, 2007; Laub & Sampson, 2003; Shadd Maruna & Roy, 2007). However, today, the social landscape and expectations are very different; there are significantly higher rates of divorce now than there was decades ago, it is very common for couples to live cohabitate for a number of years before they entertain the idea of marriage, and marriage is no longer the standard expectation in long-term relationships. It is no longer unexpected or surprising that children are born out of wedlock, and it is less common for people to attend a place of worship

regularly. Previous research had identified that marriage was significantly related to desistance, and had a greater impact on reducing the rate of crime than merely cohabiting with a partner (Farrington & West, 1995).

In terms of education and the job market, there has been a substantial shift in recent decades; the expectation on many young adults is to continue education after leaving secondary school, as it is seen as required background for many of the well-paid jobs that modern society offers. It is not uncommon for people to enter the job market to begin their career five or ten years later than would have been expected in the past. Due to the increasing rise of the company profits that are attached to 'big business' without the moderating influence of unions, there is less expectation of employee loyalty to a particular job or employer, as the conditions of employment for many are starkly different to the conditions that would have been commonplace in the 1950s or 1970s. Therefore, the previously held markers of desistance that were measured in late adolescence, such as job attachment and loyalty to employers, would not be as relevant when measured at the same point in life today. It stands to reason that the importance of social bonds for desistance needs to be considered in the context of what is, or is not, expected of an individual in modern-day society, in order to provide an accurate assessment of the possible influences on desistance from crime and recidivism. For instance, measurements of effective social bonds today could involve academic or professional ambition, or positive meaningful relationships in general, as opposed to job attachment or marriage (Kazemian, 2007).

The third body of research into desistance from crime focuses on cognitive transformation; the within-individual changes that occur to allow an offender to move away from the behaviour and identity of their past and towards an alternative positive identity, often with different goals in mind for their future. As was the case for the research on aging and social

controls, the literature on desistance from general crime is extensive compared to the literature on desistance from sexual crime. The research on desistance from general crimes purports two possible mechanisms of action for cognitive transformation; an adjustment of thought processes that can occur without a substantial internal shift in core identity (Shadd Maruna, 2001; Shadd Maruna & Roy, 2007), or a complete identity change that requires significant commitment from the individual (Paternoster & Bushway, 2009).

For some, the process of cognitive transformation can be incredibly fast, and occur with a ‘lightbulb’ moment or event that kick-starts a realisation that the individual would like to, or feels that they need to, change who they are and the path they are currently travelling on. These moments can be positive; a dramatic realisation had while in treatment, receiving kind and accepting or inclusive behaviour from another person, or obtaining employment unexpectedly. Many positive ‘lightbulb’ moments can be considered as an internal response to social interaction on some level; if an offender is treated like a human being who deserves to be part of society, they may well internalise that message and try to become even more deserving of their place in society, (“If I am treated like a good person with morals and values, I will try to live up to those morals and values to prove that they are right”). Conversely, if someone is treated as if they are a monster who is not worthy of a place in society, that message can be internalised over time and cause an individual to act as they are expected to act; to personify the monster they are already portrayed as, and considered as by those they come in to contact with (note: the concept of internalising the image of others, known as the Pygmalion effect, is covered in more detail in a later section of this literature review).

More likely for sex offenders, however, these ‘lightbulb’ moments will be negative; the harsh and unwelcoming environment that many sexual offenders are exposed to as they re-enter

society after their conviction, especially if conviction is followed by incarceration, does not easily allow for the occurrence of significant positive moments. Paternoster and Bushway (2009) describe these negative triggers for cognitive transformation as instances when an individual realises they are heading in a very destructive direction, and feel dread or a strong sense of fear when visualising their future; a 'feared' self, that they are determined to avoid. At that point they may not know the alternative future they do want for themselves, but they are extremely certain of the future they do not want for themselves.

However, most researchers acknowledge that cognitive transformation, even if initiated by a specific event or moment, is more likely to be a gradual process where an offender "knives off" from their past behaviours and actions, separates themselves from "who they used to be," and constructs a more positive view of themselves and their possible future over a longer period of time. This process of identity construction generally involves a strong concept of redemption, and making the decision that although they have done bad things in the past, they are actually a good person who is capable of doing good things and capable of working towards an even better version of themselves. The concept of redemption, and of reframing the past and/or the current situation that the offender is in can be seen as a form of cognitive dissonance; neutralising previous actions to fit the self-image that allows them to visualise a positive future away from crime, as opposed to identifying with that past behaviour as who they actually are and deciding they need a distinctly separate identity to be able to move forward with the positive future they desire (Giordano, Cernkovich, & Rudolph, 2002; Shadd Maruna, 2001, 2004). Paternoster and Bushway, however, theorise a more complete form of cognitive transformation; dissolution of the previous or feared future self, and replacing it with a new prosocial self, mitigated and assisted by actively generating more prosocial bonds and building those associations to create a positive

feedback loop, continuing to make positive change by choice (as opposed to Maruna's concept of reframing the past, as a form of cognitive dissonance, to be able to move on from previous mistakes and build a better future) (Shadd Maruna, 2001; Paternoster & Bushway, 2009).

Irrespective of the process of cognitive transformation that is purported, there is general agreement that for the identity shift, or a change in self-view, to actualise into a future away from criminal activity, there has to be a new script put into place to clearly outline the new future an offender wants for themselves, and a plan for how to ascertain that future. Without a suitable non-criminal life script to follow, including a practical and sensible strategy for attaining the life goals they desire, offenders will continue with old patterns of behaviour, regardless of how much they may want to change or are ready to commit to that change. The majority of researchers do acknowledge that positive informal social controls also have a role to play in the desistance process, alongside cognitive transformation, as there are instances where an offender may show strong evidence of cognitive transformation and identity shift but will still persist with crime, and equally, there are instances where an offender is presented with multiple opportunities to desist from crime (in the form of positive informal social controls), but does not act upon those opportunities and continues to partake in criminal activity. These situations highlight the likely interactionist nature of the internal cognition and personality of an individual and the external influences of the environment they are existing in (Giordano et al., 2002; Lussier et al., 2016; Shadd Maruna, 2001).

Paternoster and Bushway, however, attach more weight to the internal cognitive identity change than others; asserting that internal cognitive transformation is sufficient in itself to allow desistance to occur. They argue that the internal shift to 'knife off' completely from their previous self and create a new prosocial identity is strong enough to prevail even in the face of

substantial social barriers to the types of prosocial opportunities that many other researchers consider vital to the desistance process (Shadd Maruna, 2001; Paternoster & Bushway, 2009). Although this theory may be true for some general offenders, I would strongly argue that the existing options for the desistance process can be more limited for sexual offenders than for violent or general offenders, for two reasons, which in turn minimise the chance that any meaningful cognitive transformation can occur in lieu of positive social controls and successful re-entry in to the community. Firstly, the level of community restrictions applied to offenders who are released after committing a sexual offence, especially a sexual offence against a child, is significantly more severe than the level of restrictions applied to non-sexual offenders (Laws & Ward, 2011; Lussier & McCuish, 2016). These restrictions often limit where an offender can live, work, and socialise, and the community notification and sex offender registrations processes in some countries (notably the U.S.) further exacerbates the difficulty sexual offenders face in trying to re-integrate back into the community and create positive prosocial bonds through stable employment, a circle of friends, family, and a permanent place to live; often referred to collectively as the ‘primary goods and needs’ that every member of society should be equally able to access, and are the minimum requirements for anyone being able to live a satisfactory, meaningful life in the community. These primary goods are often out of reach for released sexual offenders, and therefore the chance that an internal cognitive transformation could even occur is minimal. The lack of primary goods will often generate a state of hopelessness and despair, alongside the consequences of rejection from the community, and conditions such as those do not allow for any sort of positive identity transformation; if anything, they will ensure that the only cognitive transformation possible is a negative one. Secondly, it has been noted that it may be more likely for sexual crimes to be committed without accomplices, or without a wider social

network of other people who also commit crimes; some offenders may keep their crimes completely hidden from those close to them (Lussier & McCuish, 2016). The nature of how sexual crimes are viewed and dealt with in the wider community mean it is more likely that a released sexual offender will be alienated and shunned, even from the prosocial or antisocial bonds that may have existed prior to incarceration. Therefore, the offender will not have much to action themselves in the way of ‘knifing off’ those previous associations or behaviours, nor will they have much opportunity in the way of generating the new prosocial connections and thought patterns that Paternoster and Bushway view as vital for the ‘identity change’ that leads to desistance from crime. The focus of this argument is not founded in the idea that sex offenders are inherently different from the general criminal population, but by the fact that those convicted of sexual offences continue to be segregated and viewed as inherently different by justice policy and by the public at large, and therefore sexual offenders cannot help but display some differences in the process of desistance when compared to general or violent offenders.

Moreover, one conclusion that is very apparent in the current literature, for both general and sexual desistance, is that it is difficult to separate the influences of internal cognitive processes and external social forces that shape the desistance process for any individual offender. In terms of cause and effect, it is very hard to say which factors have the initial influence, and which are secondary or dependent; for example, it is hard to quantify whether a positive shift in cognitive processing occurs in an individual which then leads to that individual gaining employment, or whether their positive cognitive transformation was able to occur *because* they gained employment. This ambiguity is further compounded by the unpredictable nature of life events; it is not possible to randomly assign positive or negative social controls to offenders, and it is also not possible to identify *why* certain events or opportunities occur for some individuals

and not for others, so there is no way to clearly identify the order of internal or external events that may lead to the desistance or persistence of offending, or how much of a role chance or luck had to play in the life course of any individual. Furthermore, the fact that internal cognitive transformation is very hard to measure empirically, and is often only noticed in the form of tangible and measurable actions that can be interpreted as indicators of cognitive transformation, or with self-report data, means that it is almost impossible to identify the exact moment that cognitive transformation starts to occur, and it may not even be clear to the offender themselves (Kazemian, 2007; LeBel et al., 2008; Paternoster & Bushway, 2009). In addition, the conclusion that the internal and external factors for desistance cannot be studied entirely separately from one another is an extremely likely one, when considered in the context of one of the basic tenets of personality psychology; that the interaction between a person (in terms of their personality traits) and the situation they are in shapes the behaviour they will display. Therefore, not every person will behave the same way when faced with the same situation, and a person will not always display the same behaviour when they are in differing situations or environments (Wortley & Smallbone, 2006). This interaction effect goes a long way to help explain why it is neither practical nor reasonable to consider the effect of social controls without examining the cognitive processes that are also involved, or to consider the effect of cognitive processes without also taking into account the social controls and environment that the cognitive process is being carried out in.

There is a variety of individual factors that are related to, or serve as elements of, two of the main pathways of desistance from sexual offending; either to formal or informal social controls, the process of internal cognitive transformation, or the combination of both internal and

external factors that collectively promote desistance. Examining these factors in more detail will help create a clearer picture of the pathways towards desistance for sexual offending, and the specific barriers that sex offenders have to contend with in the community, to be able to better understand what action could, and should, be taken to increase the likelihood of desistance occurring and simultaneously minimise the risk of recidivism. The growing understanding of these factors, their interconnected nature, and the unique experiences and barriers that sexual offenders experience compared to general or violent offenders, has led to the creation of specific explanatory models of desistance from sexual offending. Although there are few substantial models, the most comprehensive model to date is undoubtedly the Integrated Theory of Desistance from Sexual Offending (ITDSO; Göbbels et al., 2012). This theory will be discussed in more depth after the individual factors and issues below have been outlined.

Labelling of sex offenders and the Pygmalion effect

There is growing acknowledgement of the potential negative impacts of labelling those who commit sexual offences as ‘sex offenders,’ related to the associated stigma with the label and subsequent barriers to successful re-integration into the community and desistance from offending. Additionally, there is a substantial body of research demonstrating that the majority of offenders convicted of sexual crimes have also been convicted of violent and/or general offences, and are more likely to be reconvicted of a violent or general offence than they are for another sexual offence (Lussier & McCuish, 2016; Moore, 2012; Willis et al., 2010). It logically follows that applying the label of a ‘sex offender’ or ‘child molester’ to any and all individuals convicted of a sexual offence can be seen as unjustifiably narrowing the focus on one small aspect of an offender’s criminal career, while ignoring the rest of the versatile offence history they may have.

It is argued that the use of such terminology helps perpetuate the public misconception of sex offenders as a very distinct population that is inherently different to the rest of the criminal population, and to the non-offending population, and helps to fuel the fear-based media coverage and public panic over the perceived dangerousness of sex offenders (Lussier et al., 2016; Willis et al., 2010).

Not only can the labelling of sex offenders serve as a barrier to re-integration into the community and reduce the chance of being accepted as a functional member of society, but the labelling and associated stigma can create a Pygmalion effect in offenders who have been given that label. The Pygmalion effect is a phenomenon whereby people start to internalise the way they are viewed and perceived by others. In the context of sexual offending, being labelled and referred to as a 'sex offender' while being aware of the widely-held views of the public about what a 'sex offender' is can cause individuals to believe they are in fact irredeemable, inherently dangerous, and not fit to be a part of society. This type of negative internalisation can reduce the likelihood of desistance occurring and block the development of a positive identity or sense of self for offenders (Göbbels et al., 2012; Willis et al., 2010). This issue is further compounded by the management of sex offenders within the justice system; by completing treatment that is specifically titled as 'sex offender treatment' and often being separated from the rest of the prison population either as part of their treatment programme, or as protection from violence directed at them by other prisoners. Additionally, the severe restrictions placed on those labelled as a 'sex offender' in many countries once they are released into the community make it incredibly difficult for offenders to move away from the negative associations and stigma of the 'sex offender' label, and causes more barriers to community re-entry that can create feelings of hopelessness and a distinct lack of agency over their own lives, which are both factors that

promote persistence of offending and prevent desistance from occurring (Göbbels et al., 2012; Lussier et al., 2016; Willis et al., 2010).

Some researchers have now ceased using such labels in their research when describing offenders, to try and move away from the misleading assumptions about who sex offenders are, and towards the acceptance of the majority of sex offenders being considered just as offenders with criminal histories that involve some sexual offences among many other violent and general offences; as offenders that have more in common with offenders who solely commit general or violent offences than they have differences. This shift in focus by researchers is a small but necessary step in trying to change the way that sex offenders are viewed, and accepted, in the community (Göbbels et al., 2012; D. A. Harris, 2016; Lussier & McCuish, 2016; Willis et al., 2010).

The role of neutralisations and externalising blame

Neutralisations for offending behaviour are found quite frequently with sexual offenders, and there is now evidence challenging the previously-held supposition that externalising blame and denial of responsibility for the offending behaviour is inherently in conflict with successful desistance from sexual offending, or the ability to successfully complete treatment. For many sex offender treatment programmes, accepting responsibility for their offences is part of the process of treatment, and participants are often removed from treatment programmes if they have not accepted responsibility for their offending in the early stages of treatment. Removal from treatment as a result of not accepting responsibility occurs in both Special Treatment Units (STUs) for child sex offenders in New Zealand; Kia Marama in Christchurch and Te Piriti in Auckland (Bakker et al., 1998; Moore, 2012; Nathan et al., 2003).

When researching desistance from sexual offending, externalising blame, use of neutralisations, and denial of responsibility were found to be a common element of the offender narratives for the offenders who appeared to be desisting from sexual offending. It is argued that externalising blame may be helpful, or even necessary, for the rejection of the negative “sex offender” label and the stigma associated with that label, and allow the offender to create a new positive identity that is based on healthy, socially acceptable goals and ambitions; often a key component of successful desistance (Hulley, 2016). Maruna (2004) has also identified this explanatory style for offending among violent and general offenders. Out of the 100 offenders that were interviewed, 55 were identified as desisting from crime through self-report data, and 34 were identified as actively persisting in crime (the remaining offenders could not easily be classified in either category so were excluded from the analysis), and due to the sampling methods used, the two groups of offenders were matched on personality scales and static history variables such as age, type of offending committed, age of onset, and high school completion. Internal, global, and stable explanations for negative life events were significantly negatively associated with desistance from criminal activity (i.e. “this is just the way I am,” or “I never succeed at anything I do,”) and the same explanatory style for positive life events was positively correlated with desistance from criminal activity. Therefore, indicating that externalising blame or responsibility for offending behaviour (which can be classified as a negative life event), is supportive of desistance from crime as opposed to persistence of crime, a conclusion that multiple studies have come to in recent years (Farmer, McAlinden, & Maruna, 2016; Hulley, 2016; Shadd Maruna, 2004).

It is also noted that this type of explanatory style for positive or negative life events is often used in the context of self-esteem, depression, and other therapeutic contexts as the most

beneficial way to approach life in general, that is, people are happier and more confident when they can externalise negative life events as being something that is outside of their control and not attributed to their identity or behaviour, and internalise positive life events as being due to their own actions and decisions and as something they should be proud of. On the other hand, internalising negative life events in everyday life situations, and externalising positive life situations, is understood to cause depressive, self-deprecating patterns of thought that do not benefit the individual psyche (Farmer et al., 2016; Shadd Maruna, 2004). Indeed, excusing and justifying behaviour that we are not proud of due to shame or embarrassment is very common behaviour in everyday situations, and can be seen as a protective cognition that helps us cope and move past the situation. Neutralisations for offending behaviour can be viewed in the same way; as a protective cognitive process that serves as a way to manage the shame associated with their actions and distance themselves from the identity of a “sex offender” and the stigma associated with that identity, thus allowing attachment to an alternative positive identity for the future (Farmer et al., 2015, 2016).

Routine activity theory and situational motivation for offending

Routine activity theory and a situational motivation for offending are not new concepts in criminology, and have been accepted as a mechanism of offence behaviour in general offending and other antisocial behaviours (e.g., substance abuse). Routine activity theory is an approach for analysing criminal behaviour that focuses on the circumstances in which people carry out criminal acts, as opposed to the individual carrying out the criminal acts and what their individual traits and characteristics might be (Cohen & Felson, 1979). Cohen and Felson (1979) explain criminal behaviour as a culmination of three separate conditions: an individual that can

commit a crime, a suitable vulnerable target for that crime, and the absence of a capable guardian or supervising force that would have the ability to stop the crime taking place. Therefore, routine activity theory acknowledges that there is a substantial interaction between a person and their environment in the act of offending behaviour.

However, routine activity and situational motivation for offending has only been applied to the understanding of sexual offending behaviour in more recent years, coinciding with the shift away from viewing sexual offenders as a distinct and separate population to the non-sexual offending population (Farmer et al., 2016). Situational motivations for offending can be considered as one method of neutralisation or externalising responsibility for offending, and is an extremely common explanation for past offences in reported self-narratives of sex offenders who are actively desisting from offending behaviour. Harris (2016) found that a focus on situational triggers for offending behaviour was the explanatory style of desistance for a quarter of the sample of 60 offenders released in to the community after incarceration for a sexual offence. These offenders attributed their desistance to a knowledge of the key triggers and risky situations or environments that could lead them to fall into old offending behavioural patterns, therefore identifying those situational factors as the main reason for their initial offending behaviour. Focusing on positive and “safe” daily routine activities allowed their situational risk to be managed effectively. They also attributed their newfound understanding of their offence pattern to the treatment they had completed (or were still in the process of completing), highlighting the importance of sex offender treatment for facilitating within-individual change and desistance from offending.

Farmer and colleagues (2015) also identified a pattern of situational motivation for offending among the desisting 25 child sex offenders they interviewed, who had been offence-

free in the community for at least 5 years (based on both official conviction data and self-reports). They explained the onset of their offending behaviour as a result of a change in their routine activities that gave them unsupervised access to a child they could victimise; for example, a change in living situations that meant they were around a child in the home at times nobody else was home, or access to children as a result of a new job. The desisters wanted to emphasise that they did not seek out an opportunity to offend, and would not normally have expressed the offending behaviour in any other context. This emphasis is one way of externalising responsibility for offending, and therefore assists with separating the 'sex offender' stigma from their own individual identity; creating the possibility of positive change (Farmer et al., 2015, 2016; Hulley, 2016).

It is argued that in the context of sexual offending, the person and the situation can interact in multiple different ways to generate the situational motivation for an offence to occur, particularly for sexual offences against children: the environment can present cues that can influence behaviour directly, produce the necessary emotional arousal for offending behaviour, serve to weaken the moral constraints of the individual, or be an environment capable of exerting social pressure (Wortley & Smallbone, 2006). Therefore, for a crime to occur, not only does an individual need to have an interest in, or at least a lack of opposition to, the offending behaviour, but the situation in which offending behaviour can be carried out also needs to be present and that situation is very dependent on environmental cues and triggers. By actively working on minimising the environmental and situational risk in their daily lives, offenders are able to continue desisting from crime or allow the process of desistance to begin, and therefore need to create the a positive identity that allows them to believe that controlling their environment is

possible and worthwhile; that their previous offending behaviour is not who they are, but what they did, and that they can be responsible for what they do in the future.

Substance abuse and situational offending

Substance abuse is linked to situational offending twofold; substance use and abuse are common environmental cues and triggers that can lead to an offence being committed, and the protective factors associated with abstinence from substance abuse are very similar to the protective factors that reduce situations in which offences can be carried out, and further protective factors for desistance from sexual offending in general. Substance abuse has been identified as a significant barrier for desistance, and as a promoting factor for offending persistence (Lussier & McCuish, 2016). Addiction and substance abuse issues have been offered frequently in the offence narratives of offenders currently desisting from sexual offending as the explanation for why the offending behaviour took place; another example of externalising responsibility for their previous offences (Kras & Blasko, 2016). Substance abuse can increase the likelihood of situational offending by lowering inhibitions or impeding good judgement and decision making, as well as put offenders in more volatile environments where there may be vulnerable potential victims (e.g., with other drug users and those that may be too intoxicated to try and protect themselves from victimisation).

Additionally, it has been noted across several studies that the factors that promote abstinence from substance abuse are very similar to the factors that also promote desistance from sexual offending; stable and positive employment or a professional career, graduation from high school or tertiary study, marriage or parenthood (the positive influence of family life), as well as continual attempts to minimise any situational risk (D. A. Harris, 2016; Laub & Sampson, 2001;

Lussier & McCuish, 2016). This observation is not surprising when considered alongside Gottfredson and Hirschi's (1990) theory that low self-control can play a mediating role in a multitude of antisocial behaviours such as criminal activity, drug use, truancy, and dangerous driving, and that therefore the factors associated with reducing those behaviours should also have some similarities.

The focus on identifying behavioural triggers and generating alternative pathways and coping mechanisms for risky situations for substance abuse rehabilitation programmes, as per the Relapse Prevention Model (Pithers, 1990) is a large part of the framework for many sex offender treatment programmes, and is used as part of the treatment process at Kia Marama and Te Piriti STUs (Bakker et al., 1998; Moore, 2012; Nathan et al., 2003). As mentioned previously, Harris (2016) found that offenders who were desisting from crime have acknowledged the importance of sex offender treatment in becoming aware of their triggers and gaining the tools necessary to steer them away from situational opportunities to offend, and they in fact mirrored the language and messages of the standard Relapse Prevention Model that their treatment consisted of. Understanding their offence triggers and being able to gain more control over their behaviour was able to give offenders a sense of pride and achievement and something to strive towards every day; allowing the offender to feel a more positive sense of self-worth and prosocial purpose, which has been highlighted as another important component of successful desistance from sexual offending (D. A. Harris, 2016).

As evident from the factors described above, the unique environment experienced by people who have been convicted of sex offences justifies the creation and application of distinct

models of the desistance process for sexual offending; the most comprehensive model to date arguably being the ITDSO (Göbbels et al., 2012). The ITDSO builds on and incorporates the previous work undertaken by Maruna (2001, 2004), Sampson and Laub (2001, 2003) and Laws and Ward (2011). The ITDSO expands on the Good Lives Model (GLM) that was developed and advanced by Ward and colleagues (Laws & Ward, 2011; Lindsay, Ward, Morgan, & Wilson, 2007; Ward, 2002; Ward & Marshall, 2004; Ward & Maruna, 2007; Ward, Yates, & Willis, 2012), which argues that community re-entry is of the utmost importance to successful desistance, and that dynamic factors addressed in treatment and upon release, including a robust plan to deal with the community they will be returning back to, are vital to improve the chances of successful community re-entry. Due to the importance of the GLM for the development of the ITDSO, and the fact that the majority of published research on the development of the GLM, carried out by Ward and colleagues, was completed (at least in part) in New Zealand, both the GLM and the ITDSO will be outlined in brief.

Good Lives Model (GLM) and the Integrated Theory of Desistance from Sexual Offending (ITDSO)

The GLM is a strengths-based rehabilitation framework with a central objective of equipping offenders with both the internal and external resources to live a life that is both acceptable to society and fulfilling for the individual concerned; a good life. For a theory to be considered as a rehabilitation theory, Ward and Maruna (2007) identify three core components that must be present: (a) overarching principles, aims, or values; (b) etiological suppositions that can help guide correctional interventions; (c) implications for practice (i.e. plans for treatment or release from incarceration). Rehabilitation theories differ from other etiological theories that

focus solely on the causes and origins of offending behaviour, and from theories that focus solely on treatment practices, by offering a more comprehensive and inclusive framework that considers aspects of etiology, ethics, and best practice for treatment and community re-integration, and also includes both risk reduction and goods promotion; considering deficits and strengths together, acknowledging their interconnected nature, and the importance of addressing both to increase the changes of rehabilitation and desistance. In the context of the GLM, dynamic risk factors (or criminogenic needs), are considered to be either internal (i.e. emotional regulation difficulties), or external (i.e. unemployment) barriers or obstacles to being able to obtain a good life, and therefore are attended to within the strengths-based framework. The underlying theory behind the GLM is that every person (including those convicted of sexual offences), at their core, seeks to satisfy a multitude of 'primary goods' that together form the priorities, values, and goals that drive their behaviour and the decisions they make. These priorities and values will be weighted differently for each person, and present themselves as a combination of eleven primary goods; knowledge, friendship (including romantic and family ties), happiness, creativity, life (including, but not limited to, healthy living and functioning), excellence in work (including mastery of skills or tasks), excellence in agency (i.e., autonomy and self-directedness for their own life), inner peace, a sense of community, spirituality (in terms of having a sense of purpose or finding meaning to life) and excellence in play (e.g., involvement in sports or hobbies). Secondary goods are identified as the pathways or means by which the primary goods are to be obtained. In essence, they secondary goods are the actions taken, and the primary goods are the motivation for those actions (Ward & Maruna, 2007; Ward et al., 2012).

In the cases of those who commit crimes, their pursuit of primary goods and their offending behaviour can be either directly, or indirectly, linked. The two are seen as directly

linked when socially inappropriate or illegal secondary goods are used to obtain the desired primary goods, and the reasoning why this occurs can often be related to the criminogenic needs that the individual has. For example, if someone lacking in the necessary emotional or interpersonal skills to pursue an intimate relationship with an adult (an identified criminogenic need for those who sexually offend against children), they may attempt to meet that need of intimacy and friendship (a primary good) by pursuing an inappropriate relationship with a child (inappropriate secondary good). The pursuit of primary goods and offending behaviour can be indirectly linked when there is no initial intention to offend, but a combination of criminogenic needs and inability to obtain the necessary balance of primary goods ultimately leads to an offence. For example, if an individual is focusing heavily on the primary good of excellence in work, and excellence in play, they may be ‘burning the candle at both ends’ to attain these goals. Due to a lack of coping strategies for stress or reasonable goal-setting, and poor decision-making abilities (potential criminogenic need in the form of deficits in executive functioning) and the lack of insight into what may be causing their issues (i.e. needing to give less of a priority position to excellence in work or in play), they might turn to substance abuse in the form of alcohol and stimulants (an inappropriate secondary good, possibly related to a criminogenic need of impulsivity or poor self-regulation). As well as not helping constructively with the actual issue at hand, the substance abuse puts extra strain on the individual’s intimate relationship at home, and this combination of factors eventually leads to an offence being committed (Ward et al., 2012).

In terms of how the GLM is considered and applied to clinical intervention, such as when entering and leaving mandated treatment programmes for sexual offenders, there is a focus on the assessment of both the standard static and or dynamic risk factors, and

conceptualising the individual's good lives plan; this includes both identifying the current priorities given to each of the necessary primary goods, and identifying the potentially faulty pathways to those goods (see Laws & Ward, 2011; Ward et al., 2012, for a more comprehensive explanation of the structured assessments suggested to obtain the necessary GLM information from an offender). When examined as a whole, this information gives the clinician the intrinsic motivations for the offending behaviour, and the deficits and internal capabilities that lead to the offence pathways; more information, by far, than is provided by standard actuarial static or dynamic risk assessments. In turn, this information is utilised to generate alternative pathways and means to obtain the desired primary goods in a collaborative effort with the offender, while addressing the deficits and internal capabilities that lead to offending behaviour; in other words, addressing criminogenic needs tailored to the individual that are specifically related to the inappropriate secondary goods that the offender uses, to ensure the most effective treatment is carried out through the minimisation of risk factors and the promotion of protective factors. This process ensures that offenders leave treatment with a substantial plan mapped out for where they want to go in life, with the tools and internal capabilities to get them to those priorities in a legal and socially appropriate manner (Laws & Ward, 2011; Ward & Maruna, 2007; Ward et al., 2012).

The ITDSO draws on the rehabilitative framework of the GLM, in addition to insights from other prominent theories and models on the process of desistance that has been undertaken in the last few decades (including Farrall & Calverley, 2006; Giordano et al., 2002; Laub & Sampson, 2001, 2003, Maruna, 2001, 2004; Paternoster & Bushway, 2009). Göbbels, Ward and Willis (2012) propose a comprehensive four-stage desistance process, which begins at the point where the offender initially decides they want to make some sort of positive change in

their life, and ends at the point where the offender has desisted from crime for a lengthy period of time and is living a socially acceptable life away from crime.

The first phase of the ITDSO, decisive momentum (initial desistance), is very similar to the idea of turning points described by Sampson and Laub (2003), in which life events can offer either positive (or negative) opportunities for change (i.e. marriage, employment, military service, or imprisonment). However, it is acknowledged that these events are not sufficient in themselves to create change, and individuals must actively take advantage of those opportunities, which requires an openness to change, as well as the internal cognitive and emotional capabilities (such as self-regulation and self-evaluation) to be able to capitalise on the life events that are presented at any moment in time. Additionally, the ITDSO draws attention to the influence that the external environment has on both the events that serve as change catalysts, and on the internal capabilities for cognitive transformation (Göbbels et al., 2012; Shadd Maruna, 2001; Paternoster & Bushway, 2009). The challenging environment faced by those that have been convicted of sexual offences, and the negative effects that type of environment can have on the likelihood of positive cognitive transformation have been covered at length in previous sections of this literature review .

The second phase of the ITDSO, rehabilitation (promoting desistance), is the phase that encompasses treatment or the necessary intervention that is taken to address the necessary criminogenic needs, as well as the social and environmental variables that contribute to the persistence of, or desistance from, criminal activity. The overarching model that is utilised in this phase of the model is the GLM (with some elements of the RNR model being followed also), providing the individual with the necessary roadmap and resources to obtain a healthy and

socially acceptable life (Göbbels et al., 2012; Laws & Ward, 2011; Ward, 2002; Ward et al., 2012).

In the third phase of the ITDSO, re-entry (maintaining desistance), the offender rejoins the community. By definition, re-entry can simply mean the singular event that occurs on the day the offender is released from prison, or, in the broader context, re-entry can be construed as the long-term process of readjustment that must occur when an individual is leaving a controlled and isolated environment (such as prison) and entering a wider, social community with substantially more autonomy. Successful re-entry is linked to a reduction in reoffending, and therefore the ultimate aim of re-entry is to create a safer community with a lesser risk of harm to those living in it. However, it is well noted that the overarching support systems, and humanistic policies and practices that are required for successful re-entry, are often lacking for offenders, especially so for those convicted of sexual offences (Farrall & Maruna, 2004; Kazemian, 2007; Willis et al., 2010). Furthermore, Göbbels, Ward, and Willis (2012) recognise that during the re-entry phase, continued and sustained effort is required to ensure that psychological and behaviour changes become habitual and engrained in the individual. This effort is referred to as *maintenance of a commitment to change* and can be actualised in the form of approach goals (positive action taken towards desistance) as opposed to avoidance goals, which do not provide the offender with an effective alternative to the offending behaviour (Ward & Maruna, 2007).

The fourth and final phase of the ITDSO, normalcy or reintegration, can be understood as an extension of the third re-entry phase, where the commitment to change has been successfully maintained, and positive, adaptive behaviours and cognitive processes have replaced their negative, maladaptive predecessors. In other words, their good lives plan and other

rehabilitative steps have been applied and carried out successfully over an extended period of time, their re-entry into the wider community has overcome any barriers that were present, and the individual considers themselves to be a non-offending member of society. It is also noted that social acceptance, and gaining social capital in the community, is a vital and necessary part of the final stage of desistance; an individual cannot completely identify as a non-offending 'normal' member of society if society does not accept them as one of their own, regardless of how significant the internal change and commitment to desisting from crime may be (Farrall & Calverley, 2006; Göbbels et al., 2012).

In summary, every stage of desistance in the ITDSO is a process in itself, as opposed to static moments or events; highlighting the dynamic and complex nature of desistance from sexual offending, in addition to acknowledging that although treatment programmes offered during incarceration are an important aspect of the desistance process, the majority of the desistance process occurs after the offender has completed the mandated treatment and been released, and the community, and legislation affecting community re-entry, has the most significant and lasting impact on the likelihood of an individual being able to successfully desist from sexual offending.

Desistance in the absence of successful re-entry

Lastly, it is important to comment on recent research by D.A. Harris (2016), which identifies a number of potential styles of desistance for sexual offenders that do not follow the standard pathways to desistance involving positive social controls, positive cognitive transformation, or successful re-entry and community re-integration, but nevertheless have been able to desist from further criminal activity. The qualitative interview-based study of 60 men who

had been convicted of sexual offences and released from custody after serving a term of imprisonment for a sexual offence, attempted to identify the narratives the men used to explain their own desistance from offending. The men had been released in to the community for an average of 4 years at the time of their interview, and the interviews were carried out following the Life History Interview Protocol (McAdams, 1993), and the study builds on the previous narrative interview analysis undertaken by Harris (2014) on a similar sample of 21 men convicted and incarceration for a sexual offence.

Harris (2016) found that the offenders seemed to identify with four differing styles of desistance; the use of the term 'style' is to ensure that the different descriptions of desistance are not interpreted as being mutually exclusive, even with the distinct differences that were observed. These four styles were defined as desistance by age, resignation, rote, or resilience. Those who were identified as desisting by age followed the standard natural maturation pathway that is consistently found across offence types, and did not classify themselves as sex offenders; they did, in fact, all have long and versatile criminal histories, and tended to blame their offending on situational factors such as substance abuse. Those who were identified as desisting by resignation were generally unhappy, and utilised a substantial amount of negative and defeating language to describe both themselves and their future, defining themselves by their past offences. They did not seem to have much in the way of social support or prosocial bonds, and displayed a lot of regret and remorse for their actions while displaying little insight into the causes of their offending behaviour; also tending to be lowest in terms of overall functioning. Those identified as desisting by rote all used language and phrasing they had learned during therapy or mandated treatment. They justified the knowledge they would not reoffend again with a newly-developed insight in to their offence triggers and behaviour patterns,

and took pride in this insight and in working every day towards avoiding those triggers and risky situations. Rote desisters placed a lot of faith in routine activities keeping them away from risky opportunities, and often gave situational explanations for their offending behaviour, separating themselves from the identity of a sex offender and externalising their behaviour (which was common across all of the observed desistance styles). Finally, those identified as desisting by resilience displayed a combination of characteristics that emphasised both recovery and redemption. As with the rote desisters, the resilience desisters commended their cognitive transformation to the treatment and therapy they had received, stating that it had provided them with the necessary tools for a successful, prosocial life. They displayed both a willingness to obtain treatment and to work towards the future they wanted for themselves, and their narratives mirrored the pathway to desistance that was most similar to that of the ITDSO. It is also important to know that the men displaying the resilient style of desistance were most likely to have stronger social bonds and higher levels of intelligence to begin with, and this may contribute to their ability to gain the insight, motivation, and necessary tools to change their life through the knowledge gained in treatment; an ability that the rote desisters may not have been able to obtain with the typical cognitive-behavioural or relapse-prevention therapy that is offered in treatment (D. A. Harris, 2014, 2016).

Not only do these findings indicate that the complexities of desistance from sexual offending stretch even further than those covered by the rigorously comprehensive ITDSO, they also demonstrate that treatment is seen as a key transformative measure in many offenders who have both completed a sex offender treatment programme, and desisted from offending. Furthermore, the findings of Harris (2016) also highlight the alarming lack of prosocial goods that are available to many individuals returning back in to the community after incarceration for

a sexual offence, and that these formidable barriers to successful re-integration mean that the majority of recognised and well-validated pathways of general desistance, with the exception of natural maturation (one pathway that is common to all offenders), are simply not an option for many individuals convicted of a sexual offence.

Now that the relevant literature pertaining to the risk assessment and desistance of sexual offending has been examined, the empirical chapters of this thesis will be outlined. A general overview of the empirical chapters (including a general description of the sample used throughout) will be followed by, for each of the three studies: a brief overview and rationale, method, results, and a discussion of the empirical findings. An overall discussion with general implications and conclusions will succeed the empirical chapters.

Overview of Empirical Chapters

The accuracy of risk assessment and its informed application by criminal justice professionals is of paramount importance not just for community safety, but also for the allocation of government resources (including treatment programmes), and for the human rights and welfare of the offenders being assessed. Although the current static risk assessment measure for sexual offenders in New Zealand (the ASRS-R) underwent a revision within the last 5 years to better incorporate the impact of aging on the risk of recidivism, the factors used in the static risk measure have not changed since its inception in 2006, and there has not been a recent attempt to re-evaluate the efficacy of static risk assessment in New Zealand and determine whether improvements can be made, or to evolve the language used to communicate about offenders' risk. Because an automatically-scored static risk measure is used to assess all sexual offenders upon initial entry into the justice system (even though more comprehensive, dynamic risk assessment may well follow), it is vitally important that the risk measure being used is as accurate as possible for a New Zealand population, and that a common language for clear and effective communication of that risk is also employed. The application of a common risk language has received attention overseas in recent years as the standard risk language that refers to sexual offenders as being either high, medium, or low risk can be greatly misinterpreted both by the courts and probation services, and the general public. The misinterpretation of risk can lead to the mismanagement of offenders at multiple stages throughout the criminal justice process (most notably at court hearings and sentencing, treatment planning, and parole board decisions), as well as impacting the public perception of sexual offenders, which in turn may affect the policy and offender management decisions of government.

Additionally, New Zealand-based studies into the desistance patterns of sexual offenders are currently lacking, as are studies regarding the desistance of sexual offenders worldwide. However, it has been noted that the majority of the sparse desistance research published on sexual offenders to date has used American cohorts, and that more research needs to be carried out on the desistance of sexual offenders in other countries, especially countries with a less punitive approach to the management of sexual offenders, such as New Zealand. The post-release environment that is often shaped by stringent housing and employment restrictions, has a direct and significant impact on the potential pathways towards desistance. Policies of community notification can also dramatically affect an offender's quality of life post-release, and increase the likelihood of backlash and open hostility towards offender re-integration in their neighbourhood; further impacting the desistance pathways open to any given individual.

Penal policy and restrictive management of an offender in the community is commonplace across America, but offender management policies are not comparable in countries such as New Zealand. For example, we do have a child sex offender register in New Zealand, but we do not have a community notification policy; the necessary authorities are advised when an offender is released into the community, but it is not information that is allowed to be accessed by the general public. Furthermore, there are variations to our register, with different severities of offence leading to differing levels of the register being applied; individuals who commit low-level non-contact offences will be on the register for a few years, and individuals who commit the most serious of contact offences can be on the register for 20 years or more. In contrast, any individual convicted of any type of sexual offence is placed on the sex offender register in the United States and remains until their death.

With the bulk of research and statistics on desistance patterns coming from a country with policies that dramatically impact the post-release environment and likelihood of successful desistance for offenders, it is imperative that more comparative research is undertaken in countries with a differing approach to the post-release environment for offenders. Such research would broaden the depth of knowledge on the desistance of sexual offenders in general, and show if different offender management approaches have any potential impacts on the patterns of desistance from sexual offending over time. The need for comparative desistance research outside of the United States has been highlighted by a number of authors in recent years (Kazemian, 2007; Kras & Blasko, 2016; Lussier & McCuish, 2016).

The overall aim of this research is to provide more clarity on the accuracy and understanding of static risk assessment for sexual offenders in New Zealand by posing two questions: firstly, can any improvements be made on the current static risk measure that is used nationwide, and secondly, how stable is the level of assessed static risk over time once offenders are released back into the community; in other words, how long can the initial static risk level be applied to any given individual offender released into the community before it should be re-evaluated to maintain accuracy of the risk level, if that offender has not yet committed any new offences. Moreover, recent research by Hanson and colleagues (2014) found that high-risk sexual offenders do not remain high-risk once they have been offence free in the community for a number of years, and the current research aims to determine if similar patterns of desistance for high-risk offenders exist when looking at the entirety of the New Zealand population of sexual offenders released from prison within a 10-year period (1992-2002).

The question of whether any improvements can be made on the current static risk measure that is used nationwide will be addressed in Study 1, which was carried out in three distinct parts, outlined below.

Firstly, the characteristics, offence histories, and recidivism rates of the sample were gathered, and the relationship between recidivism and offence history variables was investigated; descriptive statistics were used to characterise the sample in terms of both offender histories and sexual, violent, and general recidivism. Kaplan-Meier survival analyses were also utilised in the assessment of recidivism. Correlational analyses and best subsets modelling were also carried out to ascertain the relationship between various offence history variables and the various types of recidivism, and to provide insight into the most suitable variables to use in the creation of predictive models for recidivism.

Secondly, forward stepwise regression was then used to formulate the predictive models for sexual, violent, and general recidivism, with ROC AUC values generated for each model as well as for the ASRS and ASRS-R. As it has been noted in previous research on the ASRS, some factors within the measure have been found to add no predictive validity to sexual recidivism when assessed individually (Moore, 2012), so one of the aims of the predictive modelling was to ascertain whether a similar level of predictive accuracy could be reached using fewer variables than the ASRS and ASRS-R includes, in addition to observing whether any alternative offence history variables could be more effective than those currently used in the ASRS-R. To increase the validity of the models being generated, the total sample of offenders were split in to a developmental sample ($n = 2,940$) and a validation sample ($n = 2,955$); the models were created using the development sample, and were then independently tested using the validation sample to ensure that there was no overfitting of the models.

Finally, the model for sexual recidivism was converted into a risk measure that can be scored automatically, to mirror the way that the ASRS-R and other static risk assessments worldwide can be scored, in order to categorise the risk level of any offender being assessed, and then apply that risk level and the communication of that risk to the processing and management of any given offender. The newly developed scoring model, currently named the Communicable Risk Measure for Sexual Offenders (CRMSO), was compared to the ASRS and ASRS-R in terms of the predictive accuracy, using ROC AUC values and Hanley and MacNeil tests. Extensive comparison of the risk categories used for the ASRS, the ASRS-R, and the CRMSO, was then carried out using descriptive statistics, Kaplan-Meier survival analyses, and life-table survival analyses, to identify whether there were any significant differences in the accuracy of the models for categorising offender risk level. The CRMSO was initially evaluated using 4 risk categories, to match the ASRS and the ASRS-R, and then evaluated using 5 categories, in order to try and integrate the recently created common risk language purported by Hanson and colleagues (2016), which utilises 5 different levels of risk (as opposed to the commonly used three or four risk levels).

Study 2 will attempt to offer some insight into the patterns of desistance for sexual offenders in New Zealand, specifically by demonstrating whether offenders deemed as high-risk still remain high-risk after 5, 10, 15 or 20 years offence-free in the community. The relative risk of recidivism for offenders was communicated using risk ratios, which were calculated using life-table survival analyses, while Kaplan-Meier survival analyses provided further comparisons on survival rates and initial 5-year recidivism rates for the offenders. The relative risk of high-risk offenders was compared to those categorised as low-risk, and medium-risk; with the three risk levels were calculated from the available ASRS-R scores, using the same percentile method

employed by Hanson and colleagues (2014) to alter the standard four risk categories of the risk assessment measure (low, medium-low, medium-high, and high) into three categories in order to maximise the sample (there is often a much smaller percentage of offenders falling in to the standard high-risk categories than in to the low or medium-low categories). To re-create the analyses used in the original Hanson and colleagues (2014) study, other potential mediators of the time-free effect, such as victim age, victim gender, contact or non-contact offences, and age at release were investigated.

Furthermore, desistance patterns for violent, general, and any recidivism were also included in Study 2, expanding again on the methodology of the Hanson and colleagues (2014) study, which only had the sexual recidivism information available. Including violent, general, and any recidivism will highlight whether those desisting from one type of offending are also desisting from other types of offending, and becoming completely offence-free. Whereas one of the mediator variables used in the research of Hanson and colleagues (2014) was the country of origin for the sample, due to the fact that the study pooled multiple cohorts of offenders from 21 studies worldwide (including one New Zealand study by Allan, Grace, Rutherford, & Hudson, 2007), the current research uses data solely from New Zealand. In doing so, and in utilising a complete offender population over a 10-year release period, the current research is able to provide a unique investigation into the desistance patterns of a nationwide offender population, which is impossible to achieve in countries with populations that are significantly larger than the New Zealand population.

Because Study 1 and Study 2 used the same sample of offenders, and followed the same initial data processing for the sample, a general methodology will now be outlined that applies to

both studies. The methodology that is specific to each study will then be covered in the Method sections within the empirical chapters for Study 1 and Study 2.

General Method

Offender Sample

The current sample consisted of all sexual offenders who were released from a New Zealand prison between 1st January 1992 and 31 December 2002 ($N = 5895$). Some offenders had sexual offences against child victims only ($N = 2966$), some had sexual offences against adult victims only ($N = 1960$), and some had sexual offences against both child and adult victims ($N = 713$). There were also 230 offenders with non-contact sexual offences only (commonly for child pornography or indecent exposure).

The offenders either had an index offence or a prior offence that was of a sexual nature. The index offence that accounted for their incarceration did not necessarily have to be a sexual offence for them to be included in the sample, however, 4330 offenders (73.5%) did have an index sex offence, and 2323 offenders (39.4%) had one or more prior sexual offences. The list of offenders was obtained from the New Zealand Department of Corrections, and was the same sample used for the construction and validation of the ASRS-R in 2014 (Grace & Wilson, 2014). Offence history and follow-up information was obtained for the sample in April 2017.

Procedure

The offence histories for the offenders in the sample were downloaded from the National Intelligence Application (NIA) database, maintained by the NZ Police, in spreadsheet form, and were then imported into a Microsoft Access database. The offence histories included details of all convictions (both prior and subsequent to the index offence), such as types of offence, offence,

hearing, and release dates; additionally, other demographic information was included, such as date of birth.

Queries were written to compute values for all the variables listed in Table 1 below from the Microsoft Access database, including ASRS items and additional variables relating to sexual offence history, as well as variables relating to new charges or convictions for sexual, violent, and general offences. A list of the total queries used in each database can be seen in Appendix A.

Many of the queries in the database extracted offence-related information, which was identified using the official New Zealand Police codes. All violent offences have codes between 1000-1999, and all sexual offences have codes between 2000-2999. General offences have a number of subcategories, with the most significant being drug offences (codes 3000-3999), property offences (codes 4000-4999), and driving or other general/administrative offences, such as breach of parole, failure to appear in court, and trespassing (codes 0-0999; 5000-9999). For a full list of all NZ Police offence codes see <http://www.abs.gov.au/ausstats/abs@.nsf/mf/1234.0>), however, it should be noted that the New Zealand Police brought the offence codes they used into line with those used by the Australian government in 2010, therefore the offence codes used when our offender samples were sentenced are no longer in use.

For the purposes of creating some queries, each offence code was coded based on the offence type. All violent offences with codes 1000-1999 were coded as category 1 offences, all sexual offences were category 2, all drug offences were category 3, all property offences were category 4, and all driving/administrative general offences were category 0 or 5.

The criterion hearing date was defined as the latest hearing date prior to the prison release date. The sexual offence (or offences) on the criterion hearing date constituted the criterion, or index, offence(s). Convictions with offence dates prior to the criterion hearing date (excluding

criterion offences) were defined as prior offences, and any charge or conviction with offence dates after the prison release date was defined as a reoffence. The follow up period started when the offender was released from prison and continued until 30th April 2017, when the offence histories were downloaded.

Automated Sexual Recidivism Scale (ASRS)

The ASRS is a risk assessment tool, used to gauge the risk level of an offender with regard to them committing a new sexual offence upon their release. The ASRS was developed in New Zealand and is based on the Static-99, which is still one of the most widely used and validated risk assessment tools used today (Hanson et al., 2016; Helmus, Hanson, Thornton, Babchishin, & Harris, 2012). The ASRS is a 7-item scale, consisting of items taken from the Static-99 that can be scored using data found in the Integrated Offender Management System (IOMS) database, intended to be an automatically-scored measure of risk level (Alexander Skelton et al., 2006), unlike measures such as the Static-99 which are usually completed by a probation officer or other corrections professionals. The automatic scoring allows for fast classification of any offender who moves through the Department of Corrections. The ASRS scores were calculated for all offenders in both groups of our sample. A description of each of the items in the scale and how they are coded follows.

Item 1 'Prior Sex Offences' is a measure of the number of sexual convictions an offender has prior to their index offence. This item is scored 0 to 3 (where 0 = no prior sexual conviction, 1 = 1 prior sexual conviction, 2 = 2 prior sexual convictions and 3 = 3 or more prior sexual convictions).

Item 2 'Prior Sentencing Dates' is a measure of the number of sentencing dates (i.e., hearing dates with convictions) an offender had prior to the sentencing date for their index offence. This item is scored 0 to 1, where 0 = between 0 and 3 prior sentencing dates and 1 = 4 or more prior sentencing dates.

Item 3 'Non-Contact Sexual Convictions' is a measure of whether an offender has ever been convicted of a non-contact sexual offence. This is a 'yes' or 'no' item, with a score of 0 being given for 'no' and a score of 1 being given for 'yes.'

Item 4 'Index Non-Sexual Violence' is a measure of whether an offender was convicted of a non-sexual violent offence on the same date they received their index (i.e., criterion) sexual offence. This is another 'yes' or 'no' item, with a score of 0 being given for 'no' and a score of 1 being given for 'yes.'

Item 5 'Prior Non-Sexual Violence' is a measure of whether an offender has received a conviction for a non-sexual violent offence prior to their index sexual offence conviction. This, again, is a 'yes' or 'no' item, with a score of 0 being given for 'no' and a score of 1 being given for 'yes.'

Item 6 'Male Victim' is a measure of whether an offender has been convicted of a sexual offence where the reported victim was male. This is another 'yes' or 'no' item, with a score of 0 being given for 'no' and a score of 1 being given for 'yes.'

Item 7 'Age at Release' is a measure of the age of the offender when they are released from prison. This item determines whether the offender was under or over the age of 25 when they released. A score of 0 is given if the offender is 25 years of age or older at their release and a score of 1 is given if the offender is between the 18 and 24.99 years of age at their release.

The cumulative score is then calculated across the 7 items, giving a minimum possible total score of 0 and a maximum possible total score of 9. Depending on the total score on the scale, the offender is placed in to one of four risk categories. 'Low Risk' corresponds to a total score of 0, 'Medium-Low Risk' corresponds to a total score of 1-2, 'Medium-High Risk' corresponds to a total score of 3-4 and 'High Risk' corresponds to a total score of 5 or more.

Automated Sexual Recidivism Scale - Revised (ASRS-R)

The ASRS-R is a revised version of the initial ASRS, which applies a set of revised age weights to the ASRS item-total score, to account for the effect of age on likelihood of recidivism (Grace & Wilson, 2014). The ASRS-R was created in line with recent revisions applied to the STATIC-99 and the STATIC-2002, which were applied in order to better accommodate the significant effect that aging has on an individual's likelihood to commit further crimes, including further sexual offences (Helmus et al., 2012). The ASRS-R adjusts the original ASRS total score as follows: those aged 18-34.9 years have a point added to the total score (+1), those aged 35-39.9 years have no adjustment to their ASRS score, those aged 40-54.9 years receive a point deduction (-1), those aged 55-64.9 years receive a 2 point deduction (-2), and those aged 65 and above receive a 3 point deduction to the ASRS total score (-3). The revised age-weights give the

ASRS-R a minimum possible score of -3 and a maximum possible score of 10. The same 4 risk categories are used in the ASRS-R as in the original ASRS, and the same score cut-offs are used for those categories, even though the score range has increased at the upper and lower ends; 'Low Risk,' 'Medium-Low Risk,' 'Medium-High Risk,' and 'High Risk' (note that the score cut-offs used for the STATIC-99R categories were also the same ones used for the original STATIC-99 categories; Helmus et al., 2012).

To create a number of the queries, a detailed breakdown of the offence codes needed to occur to create variables related to the sexual offence history of the sample. This process involved importing a list of all the sexual offence codes and their description into a Microsoft Excel spreadsheet, i.e. "2144 – Indecent assault on boy under 12," and then separating the 194 sexual offences into subtypes that would become variables in the data analysis. The subtypes were determined by victim age and gender, and whether the offence was contact or non-contact, and the full list of database queries can be seen in Appendix A. The breakdown led to 15 subtypes of sexual offence. A list of the total sexual offence codes can be seen in Appendix B and a list of the offence codes in each sexual offence subtype can be seen in Appendix C.

For the criteria of the sexual offence subtypes, a contact offence was considered an offence that involved physical contact, attempted physical contact or intent to obtain physical contact. For example, contact offences included offence codes that specified indecent assault, sexual intercourse, indecent acts, abduction, rape and unlawful sexual connection.

For the criteria of the sexual offence subtypes, a non-contact offence was considered an offence that did not involve physical contact. For example, non-contact offences included offence codes that specified possessing or distributing indecent or objectionable material,

indecent exposure, sexual grooming (including arranging or travelling to meet a young person), and other indecent performances. The specific variables from the full database list that were used in Study 1 will be outlined in the Method section of Study 1, and the specific variables used in Study 2 will be outlined in the Method section for Study 2.

Following the empirical chapters for Study 1 and Study 2, there will be a general discussion section which will include an overall summary of the empirical results from both studies, implications of the present research, and final concluding comments.

Study 1. Static Risk Assessment for Sexual Offenders in New Zealand: Can Improvements be Made?

The risk assessments carried out on individuals who commit sexual offences are the most important and valuable tools in determining how best to proceed with the management and treatment requirements an offender may need. As the consequences of sexual offences for victims and their loved ones are extremely severe, traumatic, and long-lasting, especially so for children and young adults (Barth et al., 2013; Boney-McCoy & Finkelhor, 1996; Turner et al., 2010), it is imperative that the most informed decisions possible are made regarding offender management in order to reduce the risk of recidivism and further harm to the community.

Initially, upon intake to the criminal justice system for a sexual offence, risk assessment may be used to influence the sentencing decision made by the judge. If an offender is found guilty and receives a prison sentence, risk assessment can be used to determine which level of security they should be placed in, and which treatment options (if any) they should be given. When the offender is able to apply for parole (early release), risk assessment can be considered by the parole board when deciding whether parole should or should not be granted. Finally, once released back in to the community, risk assessment will be used to determine the length and intensity of monitoring and supervision, and whether any special restrictions or requirements are added to the terms of release (i.e. being unable to reside near a school or park, or being unable to obtain employment in certain areas or locations). It is clear that the impact of having, or not having accurate risk assessment measures can be incredibly serious and far-reaching, both for the safety of the community, and for the quality of life the offender will have from the time of their sentencing.

Risk assessment measures in use today are based on the objective evaluation of factors that have demonstrated empirical links to recidivism outcomes, and can either use static risk factors, or a combination of static and dynamic risk factors to estimate the likelihood of recidivism an offender may have. Risk assessments of this nature are considered to be actuarial assessments, and have been proven to perform consistently at a higher level of accuracy than the unstructured clinical judgements that dominated the field of risk assessment previously (Grove et al., 2000). Static risk factors are offence history and other descriptive or demographic variables which are fairly stable and unchanging in nature and have been empirically linked to an increased chance of reoffending, such as number of prior sexual offences, and age at the time of their release from prison. Conversely, dynamic risk factors, are factors empirically linked to recidivism which are changeable and can be targeted in treatment; dynamic risk factors are often referred to as criminogenic needs for that reason and can include items such as antisocial associates, sexual deviancy, and socially maladaptive functioning (Andrews et al., 1990, 2006).

One of the most commonly applied risk assessment measures in New Zealand currently is the Automated Sexual Recidivism Scale – Revised (ASRS-R; Skelton et. al. 2006, Grace & Wilson, 2018), which was developed as a modified version of the Static-99 to be used in a New Zealand context, and comprises 7 out of the 10 items included in the Static-99R. Although other, more comprehensive static risk assessments such as the Static-99R (Hanson & Thornton, 2000), or risk assessment tools that determine both static and dynamic risk, such as the Violence Risk Scale: Sexual Offender Version (VRS:SO; Olver, 2003), are also utilised within the New Zealand correctional system, the ASRS-R offers unique benefits and advantages that influence its continued application.

Most importantly, the ASRS-R is computer-scored using offence history information that is included in the offender's official criminal record, held in a computer database that is maintained by the Department of Corrections; known as the Integrated Offender Management System (IOMS). An IT data warehouse platform, Corrections Business Reporting and Analysis (COBRA), has been recently introduced for the reporting and analysis of IOMS information. Because one method of obtaining and collecting offence information to be stored in a single database is used in New Zealand, a risk assessment measure that can utilise information available in this database is both feasible and an important resource for correctional staff and other decision makers. The ASRS-R can be carried out from any correctional building where there is file access, on any offender, at any time. This eliminates the need for lengthy training in scoring and coding protocols, removes the possibility of human errors in judgement or administration, and also dramatically reduces the time taken to administer the risk assessment, and the resources that are required to do so; allowing large numbers of sexual offenders to be screened for recidivism risk at one point in time. In fact, the driving force behind the development of the initial ASRS was a response to government legislation which required extended parole supervision for individuals convicted of sexual offences against children. This legislation meant there was a pressing need to be able to evaluate the risk level of large numbers of sexual offenders as efficiently and accurately as possible (Alexander Skelton et al., 2006; Vess & Skelton, 2010).

The scores from the ASRS-R classify offenders into one of four risk levels: low, medium-low, medium-high, and high. The original version of the ASRS was tested in New Zealand on three cohorts of child molesters, with follow-up periods of five, ten and fifteen years, and consistently demonstrated AUC values of 0.70 or above, establishing predictive accuracy similar

to the Static-99 (Skelton et al., 2006). A more recent evaluation of the ASRS, using 5889 sexual offenders released from prison in New Zealand, found AUC values for 5-year, 10-year, and any sexual recidivism of 0.68, 0.67, and 0.66, respectively (Grace & Wilson, 2018). In addition, the different risk bands for the ASRS corresponded to different recidivism rates, comparable to the Static-99. Vess and Skelton (2010) measured the recidivism rates of 2435 sex offenders released from incarceration between 1990 and 1995. After an average follow-up period of 15 years, 6-7% of low-risk offenders (as classified by the ASRS) had been convicted of a new sexual offence, whereas 34-38% of high-risk offenders (as classified by the ASRS) had been convicted of a new sexual offence (Vess & Skelton, 2010). The distribution of recidivism rates across the ASRS risk levels were identical for Grace and Wilson (2018).

However, it has been identified in a previous study (Moore, 2012), that some of the individual ASRS items were not correlated with sexual recidivism in a sample of child sex offenders; prior non-contact convictions, index violence, male victims and being a young offender. Moreover, a validation study of the Static-99, (Sjöstedt & Långström, 2001) followed-up a sample of 1400 offenders who were convicted of any sexual offence and were released from prison between 1993-1997. They found that after an average follow-up period of 3.7 years that index violence, young offender and male victims items were not correlated with sexual recidivism for their sample. As the ASRS items are all items from the Static-99, this finding is especially relevant.

Categorisation of risk is an important and pivotal aspect of any actuarial risk measure, as many decisions regarding offender management are made off the back of the risk category that an offender is placed in. The way that actuarial risk assessments have traditionally conveyed risk to decision makers is by placing each offender in to a specified risk category based on the

outcome score of the risk assessment measure. Both the Static-99R and the ASRS-R utilise the same risk category labels; ‘low-risk,’ ‘low-medium risk,’ ‘medium-high risk,’ and ‘high-risk.’ (Anderson & Hanson, 2010; Grace & Wilson, 2018). Effective and meaningful communication of risk categorisation is vital to ensure that offender management is carried out in the most accurate and most ethical way possible, and that the correct portrayal of risk is also passed on to the media and the general public.

There has been a large shift in the last few years to move away from the original ‘high’ or ‘low’ risk terms for sexual offenders which are still widely used in standard risk measures, as those terms can be very misleading, and are open to interpretation by decision makers. It has been documented that prospective jurors are significantly more likely to be influenced by the risk category label attached to the Static-99R than they are by any numerical information associated to the actual Static-99R scores (Varela, Boccaccini, Cuervo, Murrie, & Clark, 2014), so the choice of terminology for the risk category labels are important.

In addition, for violent or general crimes with much higher rates of recidivism, categorising an offender as “high risk” may mean that they have an 70-90% chance of reoffending in the next 5-15 years, but for sexual offenders, being categorised as “high risk” is likely to mean there is closer to a 30-50% chance of reoffending in the same timeframe (L. a. Craig et al., 2007; Girard & Wormith, 2004; G. T. Harris & Rice, 2007; Mann et al., 2010). When decision makers are under the impression that a high-risk sexual offender is *almost certain* to reoffend, as opposed to 30-50% likely to reoffend, the decisions made may be very different, and in a court setting (when this decision directly impacts on the sentence length, sentence type, or community supervision level), the consequences of those decisions are extremely significant; both in terms of allocation of resources, and the severity of impact on human life (of both the

offender, and the wider community). Similarly, a categorisation of low risk could be open to interpretation as ‘no risk’ when that is also not the case. Low-risk offenders may only have a 5-15% chance of reoffending within 5 years, but there is still a measurable level of risk that needs to be considered when decisions regarding offender management and treatment are being made (Lussier et al., 2016; Moore, 2012).

To address the issue of miscommunication around risk categories for sexual offenders, and expand on the standard ‘low, medium, or high’ risk categories, Hanson and colleagues (2017) re-classified the categories used in the Static-99R and the Static-2002R. They proposed a standardised classification system to communicate risk for sexual offenders in a meaningful way that could then be applied to any criterion-referenced prediction measure for sexual recidivism (not just applied to the Static-99R or Static-2002R). Additionally, the new risk categories they generated were able to increase the concordance of risk classification from 51% to 72% across the Static-99R and Static-2002R. The focus of the new risk categories was informing decision-makers about the *relative* risk of recidivism, as opposed to absolute risk (that is most common for actuarial risk assessments); relative risk refers to the risk an offender has to sexually reoffend compared to other offenders convicted of sexual offences. With this aim in mind, offenders were classified into five different risk categories, starting with an ‘average risk’ category, followed by two higher risk categories for those above the mean, and two lower risk categories for those below the mean. The higher risk categories were labelled as “above average risk” and “well above average risk,” with the lower risk categories labelled as “below average risk” and “very low risk.” Hanson et. al. (2017) also supplied detailed descriptions of the type of offence typologies and recidivism rates that could be expected for offenders in each category, which could be utilised to further supplement the information that the decision-makers had regarding an

offender's risk category in terms of what that category label actually means for their likelihood of sexually reoffending.

In light of the findings above, the aims of the current study were twofold. Firstly, to investigate whether it was possible to develop an alternative risk assessment measure to the ASRS-R; one that could also be computer-scored, and would be able to provide a comparable level of accuracy while utilising fewer offence history variables. Secondly, to attempt to categorise and communicate the sexual recidivism risk for the offenders in the current cohort using the framework that Hanson et. al. (2017) have previously detailed. The cohort for the present study consisted of all offenders convicted of a sexual offence who were released from a New Zealand prison between 1st January 1992 and 31st December 2002 ($N = 5,895$), and full offence histories and recidivism information was available for those offenders up to the point of data collection (1st April 2017).

If successful, the accuracy of computer-scored risk assessment for sexual offenders in New Zealand could be improved, and the new categories for the alternative risk assessment measure should then be able to provide those making decisions around offender management in New Zealand with more accurate and meaningful information regarding an individual's propensity to sexually reoffend, and allow them to act accordingly.

1. Method

The offender sample, and details of the general design and procedure can be found in the General Method section, within the Overview of Empirical Chapters.

Procedure

Table 1 lists all of the variables that were chosen for more detailed analyses in the current study, along with descriptors for those variables. More offence history variables were investigated initially (see Appendix A for full details), however were not chosen for further analyses due to extremely low frequencies within the dataset (i.e. prior convictions for bestiality, arson, and sexual offences against a subnormal victim). Additionally, in some cases, transformations of offence history variables (e.g. binary or log transformations) were used when deemed appropriate.

Data analyses

The goals of the research were to be addressed using multiple steps, each requiring different statistical analyses. They are as follows:

Step 1: Describe the characteristics, offence histories, and recidivism results of the sample, as well as relationships between offence history variables and recidivism; all recidivism results - sexual, violent, and general - will be investigated.

Step 2: Develop predictive models for sexual, violent and general recidivism, (informed by the findings from the analyses in Step 1), and determine if the predictive accuracy of the ASRS and ASRS-R can potentially be improved on.

Table 1. List of variables used in the current study

<i>Variable</i>	<i>Description</i>
ASRS Variables	
Prior Sex Offences (Item 1)	Detailed in previous ASRS section in 'General Method'
Prior Sentencing Dates (Item 2)	
Prior Non-contact convictions (Item 3)	
Index Violence (Item 4)	
Prior Violence (Item 5)	
Male Victims (Item 6)	
Young Offender (Item 7)	
ASRS Total Score	
ASRS-R Total Score	
Demographic Variables	
Age at Release	Age at prison release date
Other Offence History Variables	
No. Prior Driving/Admin	Number of prior convictions for driving/admin offences
No. Prior Drug	Number of prior convictions for drug offences
No. Prior Property	Number of prior convictions for property offences
Prior Sexual Offending Variables	
Prior Sexual Conv. (Any)	Prior conviction for one or more sex offences
Child Victim Only	Prior or index conviction for one or more sex offences against only a victim under 16 years of age
Adult Victim Only	Prior or index conviction for one or more sex offences against only a victim over 16 years of age
Child & Adult Victim	Prior or index conviction for one or more sex offences against victims both over and under 16 years of age
Female Victim Only	Prior or index conviction for one or more sex offences against a female victim only
Male Victim Only	Prior or index conviction for one or more sex offences against a male victim only
Female & Male Victim	Prior or index conviction for one or more sex offences against both female and male victims
Non-contact Offences Only	Prior or index conviction for one or more non-contact sex offences only
No. Prior Child Victim	Number of prior or index convictions for sex offences against a victim under 16 years of age
No. Prior Male Victim < 12	Number of prior or index convictions for sex offences against a male victim under 12 years of age
No. Prior Male Victim 12-15	Number of prior or index convictions for sex offences against a male victim between 12 and 15 years of age
No. Prior Female Victim < 12	Number of prior or index convictions for sex offences against a female victim under 12 years of age
No. Prior Female Victim 12-15	Number of prior or index convictions for sex offences against a female victim between 12 and 15 years of age
No. Prior Adult Victim	Number of prior or index convictions for sex offences against an adult victim
No. Prior Male Victim	Number of prior or index convictions for sex offences against a male victim
No. Prior Non-Contact Offence	Number of prior or index convictions for non-contact sex offences
Recidivism Variables	
New Sexual Charge or Conviction	Any new sexual offence charge/conviction post-release
New Violent Charge or Conviction	Any new violent offence charge/conviction post-release
New General Charge or Conviction	Any new general offence charge/conviction post-release

Step 3: Develop an automated scoring system for the sexual recidivism predictive model, with four accompanying risk level categories (the current number of categories used by the ASRS and ASRS-R) following the framework laid out in Hanson et. al. (2017), and compare the accuracy of the risk level categories against those generated by the ASRS and ASRS-R.

Step 4: Determine whether sensitivity to differences in relative risk of sexual offenders can be increased any further with the inclusion of a 5th risk category, which would bring the classification of risk more into line with Hanson et. al.'s (2017) guidelines for the standardisation of risk communication for sexual offenders.

For Step 1, descriptive statistics were used to characterize the sample in terms of offender characteristics. Descriptive statistics were also used to detail sexual, violent and general recidivism for the sample, along with Kaplan-Meier survival analyses. Correlational analyses were then completed to assess the relationship between recidivism (sexual, violent and general) and offence history variables.

Forward stepwise regression was then used for Step 2, in order to formulate predictive models for sexual, violent and general recidivism; ROC AUC values were also generated for each model and for the ASRS, and ASRS-R, comparatively. To assess the validity of the models and to guard against overfitting, a cross-validation strategy was used in which the data cohort was randomly divided in to a developmental sample and a validation sample – with the developmental sample being used to initially specify the models, and the validation sample being used to test the predictive accuracy of the models independently.

Lastly, for Steps 3 and 4, comparisons of the categories used for the ASRS, ASRS-R, and developed scoring model as predictors of recidivism were then carried out using Kaplan-Meier survival analyses, life-table survival analyses, ROC AUC values, and Hanley and MacNeil (1983) significance tests. The purpose was to identify any significant differences between the accuracy of the models for categorising offender risk level, initially using the same 4 risk categories as the ASRS-R, and with the inclusion of a 5th risk category.

1. Results

Step 1: Describe the characteristics, offence histories, and recidivism results of the sample, as well as examining the relationships between offence history variables and recidivism.

The total sample consisted of all sexual offenders who had been released from a New Zealand prison between 1st January 1992 and 31st December 2002 ($N = 5895$). The average follow-up time for offenders was 6874 days (18.83 years; $SD = 3.19$ years), with a minimum follow up time of 4684 days (12.83 years), and a maximum of 8693 days (23.82 years). The average age of an offender at the time of their release was 38 years old ($SD = 13.43$ years), with the youngest offender being 15 years of age, and the oldest offender being 72 years of age at the time of their release. 29% of the sample identified as New Zealand European, 30.7% as New Zealand Māori, 7.1% as Pacific Islander, and 1.5% as Asian, or other ethnicity. The ethnicity was unknown, or not specified, for 31.7% of the sample.

The average ASRS score for the sample was 1.78 ($SD = 1.57$), while the average ASRS-R score was 1.35 ($SD = 2.01$). In terms of the ASRS risk bands, 28% ($n = 1649$) of the offenders were low risk, 39.7% ($n = 2342$) were medium-low risk, 27.2% ($n = 1602$) were medium-high risk, and 5.1% ($n = 302$) were high risk. In terms of the ASRS-R risk bands, 34.7% ($n = 2048$)

were low risk, 34.7% ($n = 2046$) were medium-low risk, 24.6% ($n = 1451$) were medium-high risk, and 5.9% ($n = 350$) were high risk offenders.

The recidivism rates can be seen in Table 2, and were calculated for each type of recidivism; sexual, violent, and general, and all (any type of recidivism).

Table 2. 5-year, 10-year, and total recidivism rates for sexual, violent, general, and any recidivism

Type of Recidivism	5-year recidivism rate	10-year recidivism rate	Total recidivism rate
Sexual	8.8%	12.1%	14.7%
Violent	18.7%	25.1%	29.9%
General	33.5%	39.6%	43.3%
Any	41.1%	47.8%	51.8%

The 5-year sexual recidivism rate was 8.8%, increased to 12.1% at 10 years post-release, and by the end of the follow-up period 14.7% of the total sample had been convicted of a new sexual offence. 59.9% of all new sexual offences occurred in the first 5 years following release, and 82.3% occurred in the first 10 years following release. For those that did sexually reoffend, the average time to a new sexual offence was 1838.81 days (5.04 years), with times ranging from 1 day to 7914 days (21.68 years).

The 5-year violent recidivism rate was 18.7%, climbing to 25.1% at 10 years post-release, and 29.9% by the end of the follow-up period. 62.5% of all new violent offences occurred in the first 5 years following release, and 83.9% occurred in the first 10 years following release. For recidivists, the average time to a new violent offence was 1830.35 days (5.01 years), with times ranging from 2 days to 8754 days (23.98 years).

For general recidivism, the 5-year recidivism rate was 33.5%, with 39.6% at 10-years post-release, and a total of 43.3% by the end of the follow-up period. 77.4% of all new general offences occurred in the first 5 years following release, and 91.5% occurred in the first 10 years

following release. For those that did reoffend generally, the average time to a new general offence was 1186.66 days (3.25 years), with times ranging from 0 days to 8231 days (22.55 years).

For any recidivism (sexual, violent, or general), 41.1% of the sample had been convicted of another offence within 5 years, 47.8% within 10 years, and 51.8% by the end of the follow-up period. 79.3% of all new offences occurred in the first 5 years following release, and 92.3% occurred in the first 10 years following release. For those that did reoffend, the average time to a new offence of any type was 1118.93 days (3.07 years), with times ranging from 0 days to 8754 days (23.98 years).

Table 3 shows the sexual offence history characteristics of the sample in more detail, including more specific victim information. For some variables, the index offences and prior offences were combined to give the most accurate representation of the offending profile that led to their inclusion in the sample.

Table 3. Frequency and Percentage of Offenders with Differing Index or Prior Sex Offences.

Index/Prior Offences	Frequency	Percentage of Offenders
Index & Prior Combined		
Child Victim(s) Only	2966	50.3%
Adult Victim(s) Only	1960	33.2%
Child & Adult Victim(s)	713	12.1%
Female Victim(s) Only	4360	74%
Male Victim(s) Only	486	8.2%
Male & Female Victim(s)	267	4.5%
Non-Contact Only	230	3.9%
Index Sex Offences Only		
Index Sex Offence	4330	73.5%
Index Child Victim	2899	49.2%
Index Male Victim <12	347	5.9%
Index Male Victim 12-15	311	5.3%
Index Female Victim <12	1633	27.7%
Index Female Victim 12-15	1282	21.7%
Index Adult Victim	1730	29.3%
Index Male Victim	562	9.5%

Index/Prior Offences	Frequency	Percentage of Offenders
Index Non-Contact Offence	154	2.6%
Prior Offences Only		
Prior Sex Offence	2323	39.4%
Prior Child Victim	1170	19.8%
Prior Male Victim <12	93	1.6%
Prior Male Victim 12-15	152	2.6%
Prior Female Victim <12	381	6.5%
Prior Female Victim 12-15	682	11.6%
Prior Adult Victim	1088	18.5%
Prior Male Victim	250	4.2%
Prior Non-Contact Offence	347	5.9%

It was more common for offenders in the sample to have a history of only female victims (74%), rather than only male victims (8.2%), and it was even less common for offenders to have a history of sexual offences against both male and female victims (4.5%). It was also more common for offenders in the sample to have a history of only child victims (50.3%) than it was for offenders to have a history of only adult victims (33.2%), and it was even less common for offenders to have a history of sexual offences against both child and adult victims (12.1%). With regards to non-contact offences, 5.9% of the sample had a prior non-contact offence, 2.6% had an index non-contact offence, and overall 3.9% of the sample had offences for non-contact offences only.

Table 4. Frequency and Percentage of Offenders Displaying Differing Recidivism Profiles

<i>Type of Recidivism</i>	<i>Frequency</i>	<i>Percentage of Offenders</i>
Sexual Recidivism Only	278	4.7%
Violent Recidivism Only	183	3.1%
General Recidivism Only	824	14%
Sexual & Violent Recidivism	44	0.7%
Sexual & General Recidivism	188	3.2%
Violent & General Recidivism	1181	20%
Sexual, Violent & General Recidivism	357	6.1%
No Recidivism	2,840	48.2%
Total	5,895	100%

Additionally, the frequency of different recidivism profiles over the total follow-up period was investigated, as shown in Table 4, and Figure 1.

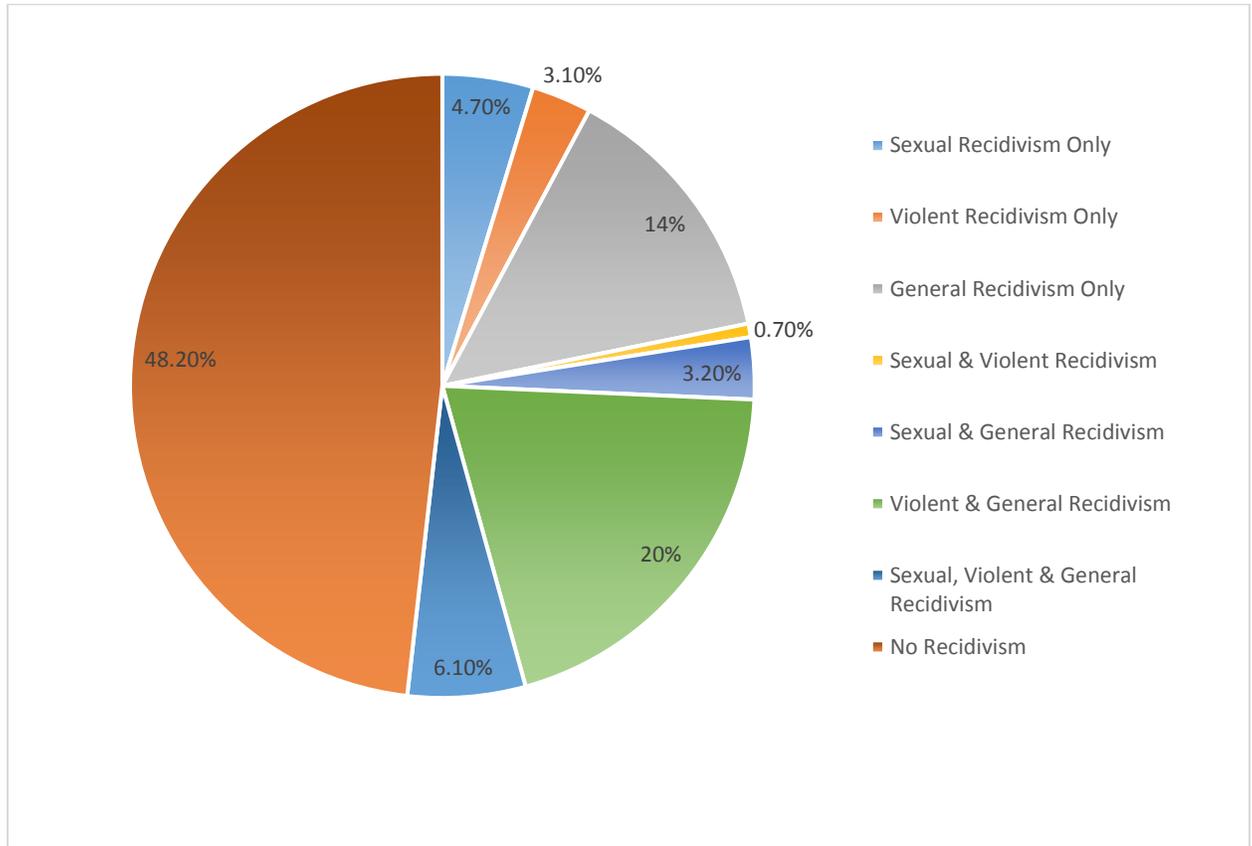


Figure 1. Recidivism profiles of offenders.

The most common recidivism combination for offenders in the sample was violent and general, and no sexual recidivism (20%), with the least common combination being sexual and violent, and no general recidivism (0.7%). Only 4.7% of offenders were reconvicted for a sexual offence only, with 3.1% reconvicted for a violent offence only, and 14% of offenders being reconvicted for a general offence only. There were also 6.1% of offenders who were reconvicted for every type of recidivism; sexual, violent and general.

The data set was split in half for the remaining analyses, to allow one sample to be used for developing the models for sexual, violent, and general recidivism, and the other for validating

and testing the models. These will be referred to as the developmental sample ($n = 2,940$), and validation sample ($n = 2,955$), respectively. Firstly, correlational analyses were carried out to ascertain which offence history variables were most strongly related to each type of recidivism in the developmental sample. The correlations between various offence history variables and sexual, violent, and general recidivism can be seen below in Table 5.

Table 5. Correlations (Pearson's r) between offence history variables (including selected binary and log-transformed variables) and sexual, violent, and general recidivism for the developmental sample. * $p < .05$, ** $p < .01$

<i>Offence History Variables</i>	<i>Correlation with sexual recidivism</i>	<i>Correlation with violent recidivism</i>	<i>Correlation with general recidivism</i>
Age at Release	-0.12**	-0.38**	-0.44**
ASRS variables			
Prior Sex Offences (Item 1)	0.19**	0.12**	0.23**
Prior Sentencing Dates (Item 2)	0.11**	0.39**	0.49**
Prior Non-Contact Offences (Item 3)	0.14**	0.03	0.06**
Index Violence (Item 4)	0.02	0.24**	0.20**
Prior Violence (Item 5)	0.06**	0.39**	0.42**
Male Victim (Item 6)	0.06**	-0.16**	-0.15**
Young Offender (Item 7)	0.06**	0.24**	0.26**
ASRS Total Score	0.19**	0.39**	0.47**
ASRS-R Total Score	0.19**	0.45**	0.54**
Binary Sex Offence Variables			
Prior Sex Offences	0.15**	0.22**	0.29**
Child Victim Only	-0.09**	-0.18**	-0.17**
Adult Victim Only	0.03	0.24**	0.22**
Child & Adult Victim	0.04	-0.10**	-0.13**
Female Victim Only	-0.10**	0.04*	0.02
Male Victim Only	0.03	-0.11**	-0.11**
Female & Male Victim	0.08**	-0.09**	-0.10**
Non-Contact Offences Only	0.09**	0.06**	0.11**
Prior Child Victim	0.08**	0.05**	0.10**
Prior Male Victim < 12	0.04*	-0.02	-0.02
Prior Male Victim 12-15	0.12**	-0.06**	-0.07**
Prior Female Victim <12	0.06**	-0.00	0.02
Prior Female Victim 12-15	-0.00	0.09**	0.14**
Prior Adult Victim	0.09**	0.20**	0.21**
Prior Male Victim	0.11**	-0.06**	-0.05**
Prior Non-Contact Offence	0.15**	0.05**	0.10**
Other Offence History Variables (LOG)			
No. Prior Driving/Admin Offences	-0.02	0.26**	0.33**

<i>Offence History Variables</i>	<i>Correlation with sexual recidivism</i>	<i>Correlation with violent recidivism</i>	<i>Correlation with general recidivism</i>
No. Prior Drug Offences	0.04*	0.26**	0.27**
No. Prior Property Offences	0.12**	0.35**	0.46**

Table 5 shows that there were multiple offence history variables that were positively and significantly correlated with sexual recidivism. As expected due to the low base rate of sexual recidivism, these correlations were generally small in magnitude. Positive correlations were found for three out of the seven ASRS items; ‘prior sex offences’ ($r = 0.19, p < .01$), ‘prior sentencing dates’ ($r = 0.11, p < .01$) and ‘prior non-contact offences’ ($r = 0.14, p < .01$), as well as the ASRS total score ($r = 0.19, p < .01$) and the ASRS-R total score ($r = 0.19, p < .01$). A number of the binary sex offence variables were also found to have small positive correlations with sexual recidivism; prior sex offences ($r = 0.15, p < .01$), having a male victim between 12 and 15 years of age ($r = 0.12, p < .01$), having a male victim ($r = 0.11, p < .01$) and having a non-contact offence ($r = 0.15, p < .01$). One other offence history variable was also positively correlated with sexual recidivism; the log-transformed ‘number of prior property offences,’ ($r = 0.12, p < .01$).

In addition, there were two variables that showed small negative correlations with sexual recidivism: the age of the offender at the time of their release ($r = -0.12, p < .01$) and having female only victims, ($r = -0.10, p < .01$).

For violent recidivism (Table 5), there were also multiple offence history variables that were positively and significantly correlated. Small-to-moderate positive correlations were found for five out of the seven ASRS items; ‘prior sex offences’ ($r = 0.12, p < .01$), ‘prior sentencing dates’ ($r = 0.39, p < .01$), ‘index violence’ ($r = 0.24, p < .01$), ‘prior violence’ ($r = 0.39, p < .01$), and ‘young offender’ ($r = 0.24, p < .01$), as well as the ASRS total score ($r = 0.39, p < .01$) and

the ASRS-R total score ($r = 0.45, p < .01$). A number of the binary sex offence variables were also found to have small positive correlations with violent recidivism; prior sex offences ($r = 0.22, p < .01$), having only adult victims ($r = 0.24, p < .01$), and having prior adult victims ($r = 0.20, p < .01$). All of the other offence history variables were also positively correlated with violent recidivism; the log-transformed ‘number of prior driving/admin offences’ ($r = 0.26, p < .01$), ‘number of prior drug offences’ ($r = 0.26, p < .01$), and ‘number of prior property offences,’ ($r = 0.35, p < .01$).

In addition, there were five variables that showed small-to-moderate negative correlations with sexual recidivism: the age of the offender at the time of their release ($r = -0.38, p < .01$), the ASRS item ‘male victims,’ ($r = -0.16, p < .01$), and three binary sexual offence variables; having only child victims ($r = -0.18, p < .01$), having both child and adult victims ($r = -0.10, p < .01$), and having only male victims ($r = -0.11, p < .01$).

For general recidivism (Table 5), multiple offence history variables were positively and significantly correlated. Small-to-large positive correlations were found for five out of the seven ASRS items; ‘prior sex offences’ ($r = 0.23, p < .01$), ‘prior sentencing dates’ ($r = 0.49, p < .01$), ‘index violence’ ($r = 0.20, p < .01$), ‘prior violence’ ($r = 0.42, p < .01$), and ‘young offender’ ($r = 0.26, p < .01$), as well as the ASRS total score ($r = 0.47, p < .01$) and the ASRS-R total score ($r = 0.54, p < .01$). A number of the binary sex offence variables were also found to have small positive correlations with general recidivism; prior sex offences ($r = 0.29, p < .01$), having only adult victims ($r = 0.22, p < .01$), having only non-contact offences ($r = 0.11, p < .01$), having prior child victims ($r = 0.10, p < .01$), having prior female victims between 2 and 15 years of age ($r = 0.14, p < .01$), having prior adult victims ($r = 0.21, p < .01$) and having prior non-contact offences ($r = 0.10, p < .01$). All of the other offence history variables were also positively

correlated with general recidivism; the log-transformed ‘number of prior driving/admin offences’ ($r = 0.33, p < .01$), ‘number of prior drug offences’ ($r = 0.27, p < .01$), and ‘number of prior property offences,’ ($r = 0.46, p < .01$).

In addition, there were six variables that showed small-to-moderate negative correlations with general recidivism: the age of the offender at the time of their release ($r = -0.44, p < .01$), the ASRS item ‘male victims,’ ($r = -0.15, p < .01$), and four binary sexual offence variables; having only child victims ($r = -0.17, p < .01$), having both child and adult victims ($r = -0.13, p < .01$), having only male victims ($r = -0.11, p < .01$), and having both male and female victims ($r = -0.10, p < .01$).

Step 2: Develop predictive models for sexual, violent and general recidivism, (informed by the findings from the analyses in Goal 1), and determine if the predictive accuracy of the ASRS and ASRS-R can potentially be improved on.

One of the primary goals of the present study was to assess whether it was possible to develop predictive models for sexual, violent, and general recidivism that improved on the accuracy of the ASRS and the ASRS-R. To accomplish this, for each type of recidivism, predictive models were developed using forward stepwise logistic regression, including ASRS items and various offence history variables (including binary offence variables and log-transformed variables) as potential predictors. The criterion for a variable being included in one of the final models was that it had to result in a significant increase in the overall model fit, and had to be significantly related to recidivism ($p < .05$). All forward stepwise logistic regressions were carried out with the developmental sample only ($n = 2940$), and predicted probabilities obtained from coefficients estimated from the developmental sample were then calculated for the

validation sample ($n = 2955$). AUC values will be reported for both the developmental and validation samples for each model, and will also be stated for predicting 5-year, 10-year, and overall recidivism rates, with 95% confidence intervals reported.

Sexual Recidivism

The stepwise regression analysis identified four significant predictor variables for sexual recidivism, as shown in Table 6: Offenders who had more prior sex offences (as identified by the ASRS Item 1), were younger at the time of their release (as identified by the natural 'age at release' variable), had prior non-contact offences (binary) and prior sex offences against male victims between 12 and 15 years of age (binary), were more likely to be charged with a new sexual offence. For the developmental sample, the model performed moderately well in predicting 5-year sexual recidivism, with an AUC = .679 (lower CI = .643, upper CI = .716), and 10-year sexual recidivism, with an AUC = .676 (lower CI: .646, upper CI: .707). The model performed almost identically for total sexual recidivism as it did for 10-year recidivism; AUC = .676 (lower CI: .648, upper CI: .704). The Nagelkerke R^2 values were .090, .095, and .095, for 5-year, 10-year, and total recidivism, respectively.

To test how well the model predicted recidivism for new data, we examined AUCs for the validation sample. Predicted probabilities were calculated using parameters estimated from the developmental sample. AUC values were overall slightly higher for the validation sample, with AUC = .718 (lower CI: .686, upper CI: .750) for 5-year sexual recidivism, an AUC = .695 (lower CI: .666, upper CI: .724) for 10-year sexual recidivism, and an AUC = .695 (lower CI: .668, upper CI: .721) for total sexual recidivism. This shows that model predictions generalized for

new data, confirming that the stepwise procedure used with the developmental sample did not result in an overfitted model.

Table 6. Stepwise regression analysis for sexual recidivism; 5-year, 10-year, and total. * $p < .05$, ** $p < .01$, *** $p < .005$

		B	Exp(B)
5-year recidivism			
Step 1	Prior Sex Offences (ASRS Item 1)	.611***	1.846
	Age At Release	-.024***	.976
	Prior Non-Contact Offences (Binary)	.569**	1.767
	Prior Male Victims 12-15 (Binary)	1.189***	3.285
10-year recidivism			
Step 1	Prior Sex Offences (ASRS Item 1)	.519***	1.680
	Age At Release	-.030***	.970
	Prior Non-Contact Offences (Binary)	.681***	1.977
	Prior Male Victims 12-15 (Binary)	1.236***	3.443
Total recidivism			
Step 1	Prior Sex Offences (ASRS Item 1)	.502***	1.653
	Age At Release	-.030***	.970
	Prior Non-Contact Offences (Binary)	.656***	1.927
	Prior Male Victims 12-15 (Binary)	1.208***	3.347

Violent Recidivism

The stepwise regression analysis identified three significant predictor variables for violent recidivism, as shown in Table 7: Offenders who had more prior sentencing dates (log), more prior violent convictions (log), and were younger at the time of their release (as identified by the natural ‘age at release’ variable), were more likely to be charged with a new violent offence. For the developmental sample, the model performed very well in predicting 5-year violent recidivism, with an AUC = .832 (lower CI = .815, upper CI = .849), and very well in predicting 10-year violent recidivism, with an AUC = .838 (lower CI: .823, upper CI: .853). The model performed equally well for total violent recidivism; AUC = .850 (lower CI: .835, upper CI: .864). The Nagelkerke R^2 values were .331, .375, and .424, for 5-year, 10-year, and total recidivism, respectively.

When the predicted probabilities of violent recidivism were applied to the validation sample, the model slightly increased its predictive efficacy for each recidivism level; with an AUC = .838 (lower CI: .822, upper CI: .855) for 5-year violent recidivism, an AUC = .844 (lower CI: .829, upper CI: .859) for 10-year violent recidivism, and an AUC = .859 (lower CI: .845, upper CI: .872) for total violent recidivism. Thus, the model generated from the developmental sample made accurate predictions for new data and was not overfitted.

Table 7. Stepwise regression analysis for violent recidivism; 5-year, 10-year, and total. * $p < .05$, ** $p < .01$, *** $p < .005$

		B	Exp(B)
5-year recidivism			
Step 1	# Prior Sentencing Dates (Log)	1.349***	3.854
	# Prior Violent Convictions (Log)	1.381***	3.978
	Age at Release	-.088***	.915
10-year recidivism			
Step 1	# Prior Sentencing Dates (Log)	1.510***	4.525
	# Prior Violent Convictions (Log)	1.311***	3.711
	Age at Release	-.088***	.916
Total recidivism			
Step 1	# Prior Sentencing Dates (Log)	1.603***	4.970
	# Prior Violent Convictions (Log)	1.468***	4.340
	Age at Release	-.094***	.910

General Recidivism

The stepwise regression analysis identified two significant predictor variables for general recidivism, as shown in Table 8: Offenders who had more prior sentencing dates (log), and were younger at the time of their release (as identified by the natural ‘age at release’ variable), were more likely to be charged with a new general offence. For the developmental sample, the model performed very well in predicting 5-year general recidivism, with an AUC = .885 (lower CI = .872, upper CI = .897), and very well in predicting 10-year general recidivism, with an AUC = .883 (lower CI: .870, upper CI: .895). The model performed the same for total general recidivism

as it did for 10-year recidivism; AUC = .883 (lower CI: .871, upper CI: .895). The Nagelkerke R^2 values were .525, .534, and .543, for 5-year, 10-year, and total recidivism, respectively.

*Table 8. Stepwise regression analysis for general recidivism; 5-year, 10-year, and total. * $p < .05$, ** $p < .01$, *** $p < .001$*

		B	Exp(B)
5-year recidivism			
Step 1	# Prior Sentencing Dates (Log)	2.876***	71.739
	Age at Release	-.102***	.903
10-year recidivism			
Step 1	# Prior Sentencing Dates (Log)	2.894***	18.074
	Age at Release	-.095***	.909
Total recidivism			
Step 1	# Prior Sentencing Dates (Log)	2.885***	17.908
	Age at Release	-.098***	.907

When the predicted probabilities of general recidivism were applied to the validation sample, predictive accuracy decreased only slightly for each recidivism level; with an AUC = .873 (lower CI: .860, upper CI: .886) for 5-year general recidivism, an AUC = .873 (lower CI: .861, upper CI: .886) for 10-year general recidivism, and an AUC = .877 (lower CI: .865, upper CI: .889) for total general recidivism. Thus similar to sexual and violent recidivism, predictions of the model generalized well to the validation sample.

ASRS and ASRS-R

The predictive accuracy of the regression models for sexual, violent, and general recidivism were then compared to the predictive accuracy demonstrated by the ASRS and ASRS-R, as shown below in Tables 9 and 10. Note that the ASRS and ASRS-R were designed specifically to predict sexual recidivism, and the inclusion of violent and general recidivism in these analyses is for exploratory purposes. The performance of the models were compared

across 5-year, 10-year, and total recidivism, for both the developmental (Table 19) and validation (Table 20) samples.

As expected, the ASRS-R outperformed the ASRS for each type of recidivism, although the differences were not significant for each recidivism level. For sexual recidivism, the ASRS performed moderately well for 5-year recidivism, with an AUC = .664 (lower CI: .629, upper CI: .700), moderately well for 10-year recidivism, with an AUC = .654 (lower CI: .624, upper CI: .683), and similarly for total sexual recidivism, with an AUC = .648 (lower CI: .620, upper CI: .676). The ASRS did improve its performance across each recidivism level when applied to the validation sample; with an AUC = .698 (lower CI: .665, upper CI: .730) for 5-year recidivism, an AUC = .677 (lower CI: .648, upper CI: .706) for 10-year recidivism, and an AUC = .670 (lower CI: .643, upper CI: .697) for total sexual recidivism.

The ASRS-R performed moderately well in predicting 5-year sexual recidivism, with an AUC = .664 (lower CI: .629, upper CI: .698), moderately well in predicting 10-year sexual recidivism, with an AUC = .657 (lower CI: .628, upper CI: .687), and moderately well in predicting total sexual recidivism, with an AUC = .656 (lower CI: .629, upper CI: .683). When applied to the validation sample, the ASRS-R improved its performance; with an AUC = .713 (lower CI: .683, upper CI: .743) for 5-year recidivism, an AUC = .694 (lower CI: .667, upper CI: .722) for 10-year recidivism, and an AUC = .693 (lower CI: .667, upper CI: .718) for total sexual recidivism.

For violent recidivism, the ASRS performed well for 5-year recidivism, with an AUC = .753 (lower CI: .733, upper CI: .774), well for 10-year recidivism, with an AUC = .751 (lower

CI: .732, upper CI: .770), and similarly for total violent recidivism, with an AUC = .750 (lower CI: .732, upper CI: .769). The ASRS did improve its performance across each recidivism level

Table 9. AUC values of the ASRS, ASRS-R, and Test Model for sexual, violent, and general recidivism for the developmental sample (95% confidence intervals given in brackets).

<i>Type of Recidivism</i>	<i>ASRS</i>	<i>ASRS-R</i>	<i>Test Model</i>
Sexual Recidivism			
- 5-Year	.664 (.629,.700)	.664 (.629,.698)	.679 (.643,.716)
- 10-Year	.654 (.624,.683)	.657 (.628,.687)	.676 (.646,.707)
- Total	.648 (.620,.676)	.656 (.629,.683)	.676 (.648,.704)
Violent Recidivism			
- 5-Year	.753 (.733,.774)	.790 (.771,.808)	.832 (.815,.849)
- 10-Year	.751 (.732,.770)	.788 (.771,.805)	.838 (.823,.853)
- Total	.750 (.732,.769)	.791 (.775,.808)	.850 (.835,.864)
General Recidivism			
- 5-Year	.784 (.767,.800)	.818 (.803,.833)	.885 (.872,.897)
- 10-Year	.788 (.771,.805)	.823 (.809,.838)	.883 (.870,.895)
- Total	.781 (.765,.798)	.823 (.808,.838)	.883 (.871,.895)

when applied to the validation sample; with an AUC = .743 (lower CI: .722, upper CI: .764) for 5-year recidivism, an AUC = .739 (lower CI: .719, upper CI: .758) for 10-year recidivism, and an AUC = .746 (lower CI: .727, upper CI: .764) for total violent recidivism.

The ASRS-R also performed well in predicting 5-year violent recidivism, with an AUC = .790 (lower CI: .771, upper CI: .808), well in predicting 10-year violent recidivism, with an AUC = .788 (lower CI: .771, upper CI: .805), and well in predicting total violent recidivism, with an AUC = .791 (lower CI: .775, upper CI: .808). When applied to the validation sample, the ASRS-R demonstrated very similar predictive accuracy; with an AUC = .782 (lower CI: .763, upper CI: .801) for 5-year recidivism, an AUC = .784 (lower CI: .766, upper CI: .801) for 10-year recidivism, and an AUC = .796 (lower CI: .779, upper CI: .812) for total violent recidivism.

For general recidivism, the ASRS performed well for 5-year recidivism, with an AUC = .784 (lower CI: .767, upper CI: .800), well for 10-year recidivism, with an AUC = .788 (lower

CI: .771, upper CI: .805), and similarly for total general recidivism, with an AUC = .781 (lower CI: .765, upper CI: .798). The ASRS maintained its performance across each recidivism level when applied to the validation sample; with an AUC = .766 (lower CI: .749, upper CI: .784) for 5-year recidivism, an AUC = .770 (lower CI: .753, upper CI: .788) for 10-year recidivism, and an AUC = .771 (lower CI: .754, upper CI: .789) for total general recidivism.

Table 10. AUC values of the ASRS, ASRS-R, and Test Model for sexual, violent, and general recidivism for the validation sample (95% confidence intervals given in brackets).

<i>Type of Recidivism</i>	<i>ASRS</i>	<i>ASRS-R</i>	<i>Test Model</i>
Sexual Recidivism			
- 5-Year	.698 (.665,.730)	.713 (.683,.743)	.718 (.686,.750)
- 10-Year	.677 (.648,.706)	.694 (.667,.722)	.695 (.666,.724)
- Total	.670 (.643,.697)	.693 (.667,.718)	.695 (.668,.721)
Violent Recidivism			
- 5-Year	.743 (.722,.764)	.782 (.763,.801)	.838 (.822,.855)
- 10-Year	.739 (.719,.758)	.784 (.766,.801)	.844 (.829,.859)
- Total	.746 (.727,.764)	.796 (.779,.812)	.859 (.845,.872)
General Recidivism			
- 5-Year	.766 (.749,.784)	.798 (.782,.814)	.873 (.860,.886)
- 10-Year	.770 (.753,.788)	.806 (.791,.822)	.873 (.861,.886)
- Total	.771 (.754,.789)	.811 (.796,.827)	.877 (.865,.889)

The ASRS-R performed very well in predicting 5-year general recidivism, with an AUC = .818 (lower CI: .803, upper CI: .833), very well in predicting 10-year general recidivism, with an AUC = .823 (lower CI: .809, upper CI: .838), and very well in predicting total general recidivism, with an AUC = .823 (lower CI: .808, upper CI: .838). When applied to the validation sample, the ASRS-R demonstrated very similar predictive accuracy; with an AUC = .798 (lower CI: .782, upper CI: .814) for 5-year recidivism, an AUC = .806 (lower CI: .791, upper CI: .822) for 10-year recidivism, and an AUC = .811 (lower CI: .796, upper CI: .827) for total general recidivism.

Overall, the developed test models performed significantly better than the ASRS and ASRS-R for accurately predicting violent and general recidivism. For sexual recidivism, the test

model demonstrated slightly higher predictive accuracy than the ASRS, and performed on par with the ASRS-R; highlighting that there may be items in the ASRS that are not significantly related to sexual recidivism (over and above other key items), and that age at release is a consistently important factor in predicting recidivism of any kind; it was the only factor that displayed predictive significance across each of the sexual, violent, and general recidivism models.

Step 3: Develop an integer-based scoring system for the sexual recidivism predictive model, with accompanying risk level categories, and compare the accuracy of the risk level categories against those generated by the ASRS and ASRS-R.

To further compare the new model for sexual recidivism against the ASRS and ASRS-R, various methods were attempted to create an optimal integer-based scoring protocol for the four variables in the model; age at release, prior sex offences, prior non-contact sexual offences, and prior sexual offences against a male victim between 12 and 15 years of age. An integer-based scoring protocol would allow the model potentially to be applied in the same way that the ASRS(R) is already applied by the Department of Corrections, and would therefore also allow offenders to be placed into a defined risk category, similar to the risk categories used in the ASRS and ASRS-R.

For the item ‘prior sex offences,’ the coding was kept identical to the coding used in the original ASRS: offenders with no prior sex offences received a score of 0, offenders with 1 prior sexual offence received a score of 1, offenders with 2 prior sexual offences received a score of 2, and offenders with 3 or more prior sexual offences received a score of 3.

For the item 'non-contact offences,' the binary coding was retained; offenders with no prior non-contact sexual offences received a score of 0, and offenders with 1 or more prior non-contact offences received a score of 1.

For the item 'prior male victim 12-15,' the binary coding was also retained; offenders with no sexual prior offences against a male victim between the ages of 12 and 15 received a score of 0, and offenders with 1 or more prior sexual offences against a male victim between the ages of 12 and 15 received a score of 1.

The 'age at release' item was converted to the same age weights used in the ASRS-R; those aged 15-34.9 years have a point added to the total score (+1), those aged 35-39.9 years have no adjustment to their initial score, those aged 40-54.9 years receive a point deduction (-1), those aged 55-64.9 years receive a 2 point deduction (-2), and those aged 65 and above receive a 3 point deduction to the initial total score (-3). It should be noted that the original age weights for the ASRS-R started the youngest age band at 18 years of age, but this was lowered to 15 for the purposes of the current study as that was the youngest age presented at the time of release by any offender in the current sample. With the age weights applied, the possible scores on the model ranged from -3 up to +6 (10 possible values overall).

In the process of deciding on the most effective scoring method, other versions were examined. These included increasing the score range of the binary variables from a maximum score of 1 to a maximum score of 2, and a maximum of 3, increasing the 'prior sex offences' item from a maximum score of 3 to a maximum score of 4 and a maximum score of 5, lowering the 'prior sex offences' item maximum score to 1 (a binary scoring item), and altering the cutoff for the 'prior male victim 12-15' item to include victims aged 16 also (increasing the item range to victims aged between 12 and 16). None of the alterations stated above demonstrated stronger

efficacy than the scoring method that was eventually chosen. The predictive accuracy of the scoring model in predicting 5-year, 10-year, and total sexual recidivism can be seen below in Table 11, for both the developmental and validation samples.

Table 11. AUC values of the developed sexual risk measure, for 5-year, 10-year, and total sexual recidivism, for both the developmental and validation samples, with 95% confidence intervals stated.

<i>Sexual Recidivism</i>	<i>Developmental Sample</i>	<i>Validation Sample</i>
5-year	.657 (.620,.693)	.712 (.680,.743)
10-year	.660 (.629,.690)	.686 (.657,.715)
Total	.660 (.632,.689)	.690 (.663,.716)

The AUC values obtained from the scored version of the developed sexual risk model ranged from .657 to .712, which is comparable to the AUC values obtained from the raw-variable version of the model (AUCs ranging from .676 to .718) and the AUC values obtained from the ASRS-R (ranging from .656 to .713). Thus the integer-based version of the model provided very good predictive accuracy for recidivism. Additionally, as seen in Table 12, Hanley & MacNeil (1983) significance testing confirmed that there were no significant differences between the predictive accuracy of the test model and the ASRS, or the ASRS-R. The correlation between total scores on the ASRS-R and the test model was $r = 0.88$ ($p < .01$), indicating that there is a strong reliability between the classification of the two models for the sample.

*Table 12. Comparison of the 5-year, 10-year, and total predictive accuracy of the ASRS, ASRS-R, and test model (Hanley & MacNeil Z scores). * $p < .05$*

<i>Model Comparison</i>	<i>5-year predictive accuracy (Z)</i>	<i>10-year predictive accuracy (Z)</i>	<i>Total predictive accuracy (Z)</i>
ASRS vs. test model	-1.08	0.74	1.82 (
ASRS-R vs. test model	0.12	-1.03	-0.44 (0.86)
ASRS vs. ASRS-R	-1.96	-2.37*	-3.44 (0.88)*

Because one of the key aspects of an integer-based risk assessment measure is to attribute a level of risk to an offender based on their total score, the next step in the analyses was to create

four risk categories for the test model to compare against the four current risk categories currently used in the ASRS and ASRS-R; low risk, medium-low risk, medium-high risk, and high risk. The cut-off scores decided on for each risk category were as follows: those with total scores of -3, -2, and -1 were categorised as ‘low risk,’ those with scores of 0 and 1 were categorised as ‘medium-low risk,’ those with scores of 2 were categorised as ‘medium-high risk,’ and those with scores of 3 or above as ‘high risk.’ The frequencies of each score on the test model can be seen in Table 13, and the frequency of offenders in each category can be seen in Table 14, along with the relative frequency of offenders in each risk category for the ASRS and ASRS-R.

Table 13. Frequency of each score on the developed sexual risk scoring measure for the total sample.

<i>Score</i>	<i>Frequency</i>	<i>Percentage of Sample</i>
-3	230	3.9
-2	352	6.0
-1	1115	18.9
0	1435	24.3
1	1672	28.4
2	819	13.9
3	192	3.3
4	58	1.0
5	22	0.4
6	0	0

Table 14. Frequency and percentage of offenders in each risk category for the test model, ASRS, and ASRS-R.

<i>Risk Category</i>	<i>Test Model</i>		<i>ASRS-R</i>		<i>ASRS</i>	
	<i>Frequency</i>	<i>% of Sample</i>	<i>Frequency</i>	<i>% of Sample</i>	<i>Frequency</i>	<i>% of Sample</i>
Low	1697	28.8	2048	34.7	1649	28
Medium-low	3107	52.7	2046	34.7	2342	39.7
Medium-high	819	13.9	1451	24.6	1602	27.2
High	272	4.6	350	5.9	302	5.1

The percentage of offenders in each risk category of the test model who were convicted of a new sexual offence within 5 years, 10 years, and by the end of the follow-up period, can be seen in Table 15, along with the comparative percentages for the ASRS and the ASRS-R. For the 'low-risk' category, recidivism rates were very similar across the three models; between 3.4-3.5% for 5-year sexual recidivism, 5.0-5.1% for 10-year sexual recidivism, and 6.3-6.4% for total sexual recidivism. For the 'medium-low' risk category, the recidivism rates had slightly larger ranges across the three models; from 7.0% (test model) up to 8.4% (ASRS-R) for 5-year sexual recidivism, from 9.8% (test model) up to 12.2% (ASRS-R) for 10-year sexual recidivism, and from 10.0% (test model) up to 14.9% (ASRS-R) for total sexual recidivism. For the 'medium-high' risk category, there was also a moderate range of recidivism rates across the three models; from 10.6% (test model) up to 13.0% (ASRS-R) for 5-year sexual recidivism, from 15.0% (test model) up to 17.4% (ASRS-R) for 10-year sexual recidivism, and from 18.6% (test model) up to 21.0% (ASRS-R) for total sexual recidivism. Lastly, for the 'high' risk category, the range of recidivism rates across the three models was significantly larger than for the previous three risk categories; from 25.4% (ASRS-R) up to 36.8% (test model) for 5-year sexual recidivism, from 30.9% (ASRS-R) up to 41.5% (test model) for 10-year sexual recidivism, and from 36.3% up to 47.8% for total sexual recidivism.

Kaplan-Meier survival analysis was also carried out to identify if there were any significant differences in the survival rates of the four test model risk categories for overall sexual recidivism, and to compare the survival rates against those of the four ASRS-R risk categories. Similar analyses were also carried out for the ASRS but will not be reported in the current results as the survival results were very similar to those of the ASRS-R. As expected,

Figure 2 shows that the ASRS-R categories all demonstrated significantly different survival rates; Log Rank statistics for the pairwise comparisons were all significant at $p < 0.001$.

Table 15. Percentage of offenders in each risk category of the test model, the ASRS and ASRS-R convicted of a new sexual offence within 5 years, 10 years, and overall.

<i>Risk Category</i>	<i>5-year sexual recidivism</i>	<i>10-year sexual recidivism</i>	<i>Total sexual recidivism</i>
Test Model			
Low	3.4%	5.1%	6.3%
Medium-low	7.0%	9.8%	10.0%
Medium-high	10.6%	15.0%	18.6%
High	36.8%	41.5%	47.8%
ASRS			
Low	3.4%	5.0%	6.4%
Medium-low	7.6%	11.3%	14.1%
Medium-high	12.4%	16.5%	19.5%
High	28.8%	33.8%	39.1%
ASRS-R			
Low	3.5%	5.1%	6.4%
Medium-low	8.4%	12.2%	14.9%
Medium-high	13.0%	17.4%	21.0%
High	25.4%	30.9%	36.3%

For those that did sexually reoffend, the average time till a new sexual offence was 5.45 years (1990.18 days) for the ‘low risk’ offenders, 5.35 years (1953.83 days) for the ‘medium-low risk’ offenders, 4.88 years (1782.43 days) for the ‘medium-high risk’ offenders, and 4.22 years (1541.42 days) for the ‘high risk’ offenders. T-tests showed that no ASRS-R risk levels significantly differed.

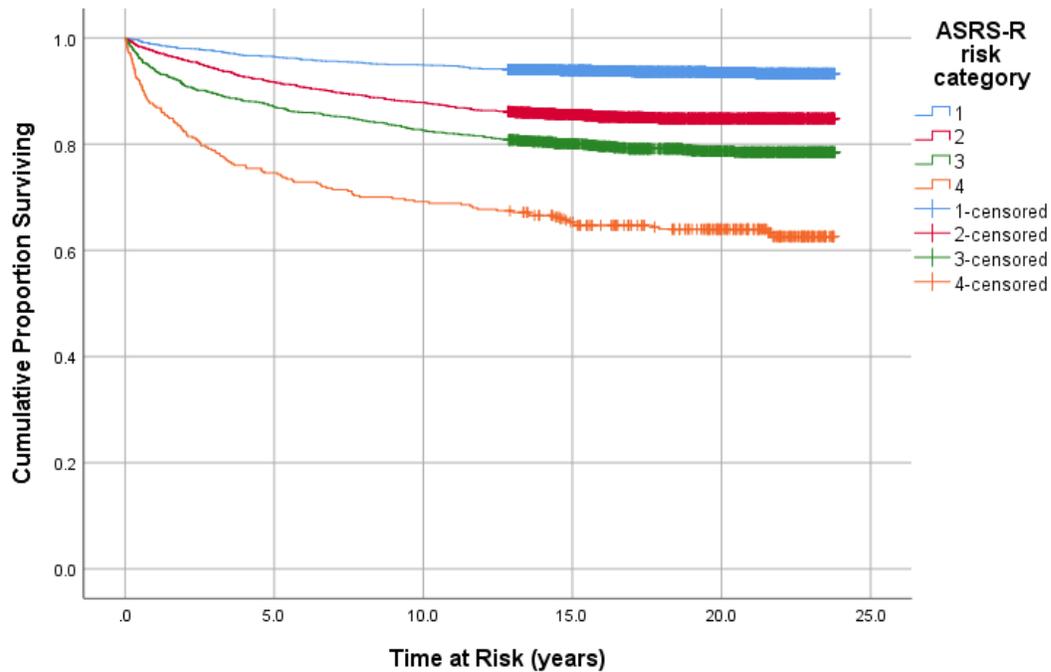


Figure 2. Kaplan-Meier survival plot showing cumulative sexual recidivism failure rates as a function of ASRS-R risk category.

from the risk level that was immediately above or below it, in terms of time at large before sexually reoffending.

Comparatively, as seen in Figure 3, the four categories of the of the test model also demonstrated significantly different sexual survival rates; Log Rank statistics all obtained significance of $p < 0.001$. For those who did sexually reoffend, the average time till a new sexual offence was 5.51 years (2009.36 days) for the ‘low’ risk offenders, 5.35 years (1952.81 days) for the ‘medium-low’ risk offenders, 5.08 years (1852.60 days) for the ‘medium-high’ risk offenders, and 3.52 years (1285.54 days) for the ‘high’ risk offenders. Similar to the ASRS-R, none of the risk levels significantly differed from the risk level that was immediately above or below in terms of time at large before sexually reoffending.

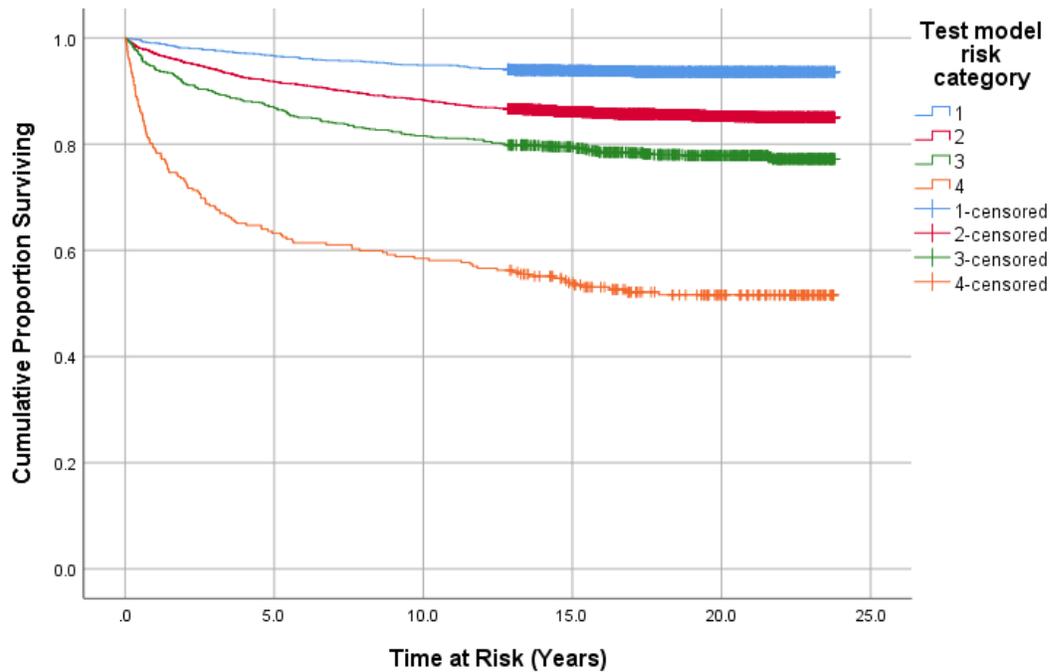


Figure 3. Kaplan-Meier survival plot showing cumulative sexual recidivism failure rates as a function of the test model risk category.

In an attempt to improve the interpretive value of the risk categories that were to be applied to the total score for the model, it was decided to expand the categories from the original four that were used in the ASRS and ASRS-R; low risk, medium-low risk, medium-high risk, and high risk, in to five categories, labelled as: very low risk, below average risk, average risk, above average risk, and well above average risk. The rationale for five categories, and the name of the risk labels attached to them, was based on recent research by Hanson and colleagues (2017) who investigated expanding the risk category labels applied to the Static-99R and Static2002-R to improve the communication of risk among justice professionals, and standardise the risk category labels across different risk assessment tools. The cutoff scores used for each of the 5 risk category labels were decided on using the methodology used by Hanson and colleagues (2017) as a framework, and are as follows: those with total scores of -3 and -2 were categorised

as ‘very low risk,’ those with scores of -1 were categorised as ‘below average risk,’ those with scores of 0 and 1 were categorised as ‘average risk,’ those with scores of 2 were categorised as ‘above average risk,’ and those with scores of 3 or above were categorised as ‘well above average risk.’ The frequencies of each updated risk category for the sample can be seen below in Tables 16.

Table 16. Frequency of each risk category for the developed sexual risk scoring measure for the total sample.

<i>Risk Category</i>	<i>Frequency</i>	<i>Percentage of Sample</i>
Very low	582	9.9
Below average	1115	18.9
Average	3107	52.7
Above average	819	13.9
Well above average	272	4.6

Because of the expansion of the number of risk categories to five, and the re-naming of those categories in line with Hanson et. al.’s (2017) recommendations for more communicable risk categories, from this point it was decided to name the test model the Communicable Risk Measure for sexual offences (CRMSO), and it will be referred to as such throughout the rest of the dissertation. Due to the clustering of the offenders around the scores of -1, 0 and 1 on the CRMSO; 4,222 offenders in total, which accounted for 71.6% of the total sample, it was decided that the ‘average’ risk category should comprise of only two scores (0 and 1) as opposed to the three scores used by Hanson et. al. (2017). This ensured that the ‘average’ category comprised of approximately half of the total sample. 9.9% of offenders sat below the median scores, and 18.5% of offenders sat above the median scores. The smallest groups of offenders were those at either end of the risk category labels; with 9.9% of the offenders categorised as ‘very low risk’ and 4.6% of the offenders categorised as ‘well above average risk.’ Additionally, there were no offenders in the sample with the highest possible score of 6, and only very few offenders with a

score of 5 ($n = 22$), and a score of 4 ($n = 58$), which, coupled with the clustering of scores around -1, 0, and 1, indicates that the majority of the sample were low-to-medium risk. The percentage of offenders in each risk category who sexually reoffended within 5 years, 10 years, and by the end of the follow-up period, is shown in Table 17.

Table 17. Percentage of offenders in each risk category of the CRMSO convicted of a new sexual offence with 5 years, 10 years, and overall.

<i>Risk Category</i>	<i>5-year sexual recidivism</i>	<i>10-year sexual recidivism</i>	<i>Total sexual recidivism</i>
Very low	1.9%	3.3%	4.0%
Below average	4.1%	6.1%	7.5%
Average	8.2%	11.7%	14.5%
Above average	13.1%	18.4%	22.1%
Well above average	36.8%	41.5%	47.8%

The observed differences in sexual recidivism rates between the risk categories of the CRMSO were substantial; most notably for the category deemed ‘very low risk,’ with 1.9% of offenders in that category sexually reoffending within 5 years of their release, and for the category deemed ‘well above average risk,’ with 36.8% of offenders in that category sexually reoffending within 5 years of their release. 3.3 % of the ‘very low risk’ offenders had sexually reoffended within 10 years of their release, and 41.5% of the ‘well above average risk’ offenders had sexually reoffended within 10 years of their release. When looking at total sexual recidivism (with an average follow-up time of 18.83 years), there were still only 4.0% of offenders in the ‘very low risk’ category who had been convicted of a new sexual offence, while 47.8% of offenders in the ‘well above average risk’ category had been convicted of a new sexual offence; a recidivism rate of close to 50%. Additionally, it should be noted that offenders in the ‘average’ category had almost identical 5-, 10-, and total sexual recidivism rates to the mean recidivism rates for the overall sample.

The five categories of the of the CRMSO also demonstrated significantly different sexual survival rates, as seen in Figure 4; Log Rank statistics all obtained at least $p < 0.005$, with the vast majority of pairwise comparisons obtaining significance of $p < 0.001$. For those who did sexually reoffend, the average time till a new sexual offence was 5.59 years (2039.96 days) for the ‘very low risk’ offenders, 5.48 years (2000.98 days) for the ‘below average risk’ offenders, 5.35 years (1952.81 days) for the ‘average risk’ offenders, 5.07 years (1852.60 days) for the ‘above average risk’ offenders, and 3.52 years (1285.54 days) for the ‘well above average risk’ offenders. The average time at large was significantly lower for the ‘well above average risk’ offenders than it was for the ‘above average risk’ offenders ($t(592) = 3.93, p < 0.001$). No other risk levels significantly differed from the risk level that was immediately above or below in terms of time at large before sexually reoffending.

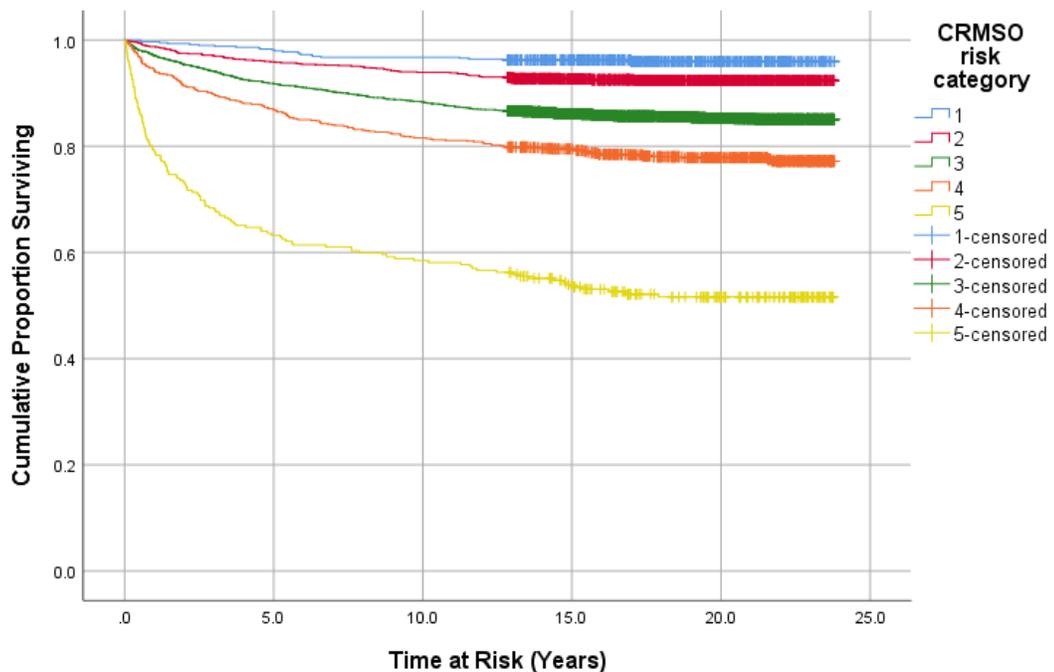


Figure 4. Kaplan-Meier survival plot showing cumulative sexual recidivism failure rates as a function of the CRMSO risk category.

Overall, the risk levels attached to the CRMSO appear to be at least as successful, if not more successful, at categorising offenders as the ASRS and ASRS-R, in terms of sexual recidivism risk, especially for those at the highest risk of recidivism, and the addition of a fifth risk category identified a group of offenders with a significantly lower risk of recidivism than the ‘low-risk’ (or ‘below average risk’) category.

1. Empirical Discussion

The first purpose of the current study was to determine if it was possible to create an alternative integer-based scoring model that could predict sexual recidivism at a comparable or improved level to the ASRS-R. The second purpose was to establish if the new model could improve on the ASRS-R’s classification and communication of risk. Efficient and accurate risk assessment an integral part of offender management, and is especially challenging for sexual recidivism as the rates of both initial offending and re-offending are substantially lower than the equivalent rates for violent and general offences. The results of the current study determined that it is possible to create an integer-based scoring model that can obtain comparable accuracy to the ASRS-R, with the additional advantage of being more parsimonious, as it is based on fewer variables; a model currently named the Communicable Risk Measure for Sexual Offences (CRMSO). Additionally, the CRMSO was able to improve on the classification and communication of risk currently defined by the ASRS-R, in line with the new standardised communication of risk created and advocated for by Hanson et al. (2017).

The items for the CRMSO were selected using the outcomes from stepwise logistic regression analyses that were initially informed by the results of correlational and best subsets regression analyses. Each item had to reach a $p < .05$ level of significance, and improve the

overall predictive accuracy of the model, in order to be included in the final model. Only 4 variables met this criteria; prior sexual offences, age at release, prior non-contact offences, and prior male victims aged 12-15 years. The finding that some ASRS-R items were not significantly correlated with (or predictive of) sexual recidivism, has been found in previous research using a sample of New Zealand child sex offenders (Moore, 2012). The correlations between sexual recidivism and the ASRS items were very small for prior violence, male victim, and young offender ($r = .06$), and even smaller for index violence ($r = .02$).

The finding that having male victims was not significantly correlated with sexual recidivism, but having male victims specifically between 12 and 15 years of age was significantly correlated, has occurred in previous research using a sample of New Zealand child sex offenders (Moore, 2012). Additionally, the MnSOST-R, which contains 16 items in total, includes an item for having previous sexual convictions with a male victim between 13 and 15 years of age (Epperson, Kaul, Huot, Goldman, & Alexander, 2003). However, although there is concordance in the literature that having a male victim is a significant risk factor for sexual recidivism (Brouillette-Alarie et al., 2016; R Karl Hanson et al., 2010; R Karl Hanson & Morton-Bourgon, 2009), there has been little commentary into that risk potentially being moderated by the specific age of the male victim. As such, this particular finding warrants further investigation.

Although prior sentencing dates was correlated with sexual recidivism, the item did not add predictive value to the final model once the effects of prior sexual offences, age at release, prior non-contact offences, and prior male victims aged between 12-15 years, had been considered. As any prior sexual offence would have also incurred a prior sentencing date this finding is not entirely surprising, but it does indicate that prior convictions for violent and general offences may not be significantly predictive of sexual recidivism once prior convictions

for sexual offences had been accounted for. This finding is in contrast to prior research that has found sexual recidivism is predicted by three broad constructs of age, sex crime specific criminality, and general criminality, and many widely used scales for the risk assessment of sexual offenders, such as the Static-99R and Static-2002R, include multiple general criminality items (Babchishin et al., 2012; Hanson & Thornton, 2000; L. Helmus et al., 2012). However, it should be noted that the Static-99 was initially designed to predict both sexual and violent recidivism, as opposed to just sexual recidivism (Anderson & Hanson, 2010), and since the ASRS was modelled off the Static-99, it follows that by default, the ASRS was also designed to capture recidivism risk for both sexual and violent recidivism (Alexander Skelton et al., 2006; Vess & Skelton, 2010). In contrast, the aim of the current study was to improve the prediction of the risk of sexual recidivism only, so it is possible that the ASRS-R items not included in the CRMSO are more related to violent recidivism than they are to sexual recidivism (i.e. index violence, prior violence, and prior sentencing dates).

The idea that different risk factors may be significantly predictive of sexual, violent and general recidivism is further supported by the subsequent outcomes of the models that were generated for violent and general recidivism in the current study. The strongest model with the fewest items for violent recidivism included age at release, prior sentencing dates (log), and prior violent convictions (log), and for general recidivism, age at release and prior sentencing dates (log) were the most significant predictors. It is apparent that items in the initial ASRS-R not significantly predictive of sexual recidivism in the current study, were significantly predictive of violent and general recidivism. This finding supports recent research that found Static-2002R subscales predicted violent and general recidivism among sexual offenders more effectively than the Static-2002R in its entirety; namely, the subscales related to general criminality, and to age

(Babchishin, Hanson, & Blais, 2016). As the focus of the current study was on improving the prediction of risk for sexual recidivism, the violent and general models were not subsequently converted into automatic integer-based scoring measures, but this step is planned for further research.

In addition to providing a comparable level of predictive accuracy to the ASRS-R, the CRMSO was able to discriminate between the relative risk of sexual recidivism for the different categories of offenders more sensitively than the ASRS-R, using a similar 4-category risk classification framework that was modelled using the same methodology and guidelines for category cut-off scores as Hanson et. al. (2017) proposed to standardise the categorisation of risk for the Static-99R and Static-2202R. The increase in ability to discriminate between the relative levels of recidivism risk was most notable for offenders in the highest risk category, with a meaningfully higher percentage being convicted of another sexual offence within 5 years (a trend that continued for both 10-year and total recidivism rates). The offenders in the highest risk category for the CRMSO also displayed significantly lower survival rates than the other categories, and those that did reoffend in the highest risk category had a significantly shorter average time at large than offenders in the other categories. Moreover, the number of offenders in the sample who were classified as being in the highest risk category for the CRMSO was lower than those in the highest risk category for the ASRS-R to start with. Identifying a smaller group of offenders who demonstrate levels of well above average risk when compared to other sexual offenders is important as it allows for stronger adherence to the RNR principle of risk (Andrews & Bonta, 2006; Andrews et al., 1990); it allows more treatment to be targeted towards that group of individuals, and also ensures that the highest level of supervision and management is being offered to those offenders who are at the highest risk of reoffending.

Furthermore, the inclusion of a fifth risk category identified a group of very low risk offenders, and brought the classification and communication of sexual recidivism risk for the CRMSO more in to line with the recent move towards a standardised communication of sexual recidivism risk directed by Hanson et al. (2017). This meant the five risk categories were named, from lowest to highest: very low risk, below average risk, average risk, above average risk, and well above average risk. The reasoning behind these category labels of relative risk, as described by Hanson et. al. (2017) is that the relative risk was considered to be the most empirically stable feature of the risk scale scores.

The 5-year recidivism rate of 1.9% and 10-year recidivism rate of only 3.3% for offenders classified as ‘very low risk’ is especially significant, as it has been documented in previous research that 1-3% is the expected sexual offence rate for general offenders who have never been previously convicted of a sexual offence (i.e. an ‘out of the blue’ sexual offence). Additionally, the 1-3% stated in the literature was displayed during follow-up periods of between 3 and 4.5 years (Duwe, 2012; Wormith et al., 2012). Therefore, a recidivism rate of only 3.3% after a 10-year follow-up period means that the offenders classified as ‘very low risk’ by the CRMSO strongly display a risk profile that is comparable to a non-sexual offender. The same pattern of recidivism rates was found for the ‘very low risk’ group in Hanson et. al.’s (2017) original study. Identifying the lowest risk category of offenders with recidivism rates of less than 2% within 5 years means that resources and supervision can be directed away from these individuals, and allows more resources to be available for those that truly require it. Moreover, as this very low risk group encompassed 582 offenders over a 10-year period (approximately 58 offenders every year), the impact in terms of resource allocation could be significant going forward.

In addition to the strong concordance between the results of the current study and those of Hanson et. al. (2017) for the ‘very low risk’ category, the relative recidivism rates for the other four categories were mostly similar to those identified by Hanson et. al. (2017). Firstly, the recidivism rates of those in the ‘below average’ risk category (4.1%, 6.1%, and 7.5%) were approximately half of the recidivism rates for those in the ‘average’ risk category (8.2%, 11.7%, and 14.5%) for 5-year, 10-year, and total sexual recidivism. It is promising that the relative recidivism rates appear comparable to Hanson et. al.’s (2017) expected rates across the entire follow-up period, as the expected relative recidivism rates for the risk categories are only provided for 5-year sexual recidivism in Hanson et. al.’s (2017) original study.

Additionally, the rates of recidivism for the ‘well above average’ group, although similar to the absolute recidivism rates Hanson et. al. (2017) identified for their ‘well above average’ group (20-50%), were higher than Hanson et. al.’s (2017) expected recidivism rates relative to the ‘above average’ and ‘average’ recidivism rates for 5-year sexual recidivism; recidivism rates for the ‘well above average’ risk category were expected to be twice as high as the rates for the ‘above average’ risk category, and four times as high as the rates for the ‘average’ risk category. The 5-year recidivism rates found for the ‘well above average’ risk category in the current study were 36.8%, with the equivalent recidivism rates for the ‘above average’ risk category being 13.1%. However, this pattern reversed slightly for 10-year (41.5% and 18.4%) and total (47.8% and 14.5%) sexual recidivism, both of which displayed patterns closer to those expected by Hanson et. al. (2017).

Even though the same methodology was followed to decide upon the cut-off scores for each category as closely as possible, there are some possible explanations for the inconsistencies, which are covered in detail below.

Firstly, deciding on cut-off scores for the below average, average, and above average categories was particularly challenging, due to the fact that 71% of offenders in the current study had scores of -1, 0 and +1 (with a possible range of between -3 and +6). This finding, coupled with the fact that the average ASRS-R score for the sample was 1.35, indicates that the sample as a whole comprised of relatively low-risk offenders. In addition, the fact that the CRMSO uses very few variables intrinsically means that the range of available scores is smaller, and therefore identifying a meaningful median range to work outwards from is more challenging; for instance, both the 'above average' and 'below average' risk categories comprised of only 1 score each. If the current study had followed Hanson et. al's (2017) decision-making process exactly, then the category labelled 'average' would have included the median score plus one score on either side, and would have therefore included two-thirds of the offender sample (as opposed to the suggested 50%). Therefore, the decision to use only the two most populated scores for the 'average' risk category was made, and this meant that the 'average' risk category comprised of approximately half of the sample, as was the case for Hanson et. al. (2017). However, regardless of the inherent difficulties in choosing the cut-offs for each risk category, the CRMSO categories all still demonstrated meaningful differences in recidivism rates for 5-year, 10-year, and total sexual recidivism. For future research in to the standardisation of risk communication for the CRMSO, potential adjustments to the cut-off scores and to the application of Hanson et. al.'s (2017) guidelines would be investigated in more depth.

Secondly, alongside potential differences in the overall risk of the current sample compared to the samples utilised in the Hanson et. al. (2017) study, there may have been other sample differences that could account for some of the variance observed between the two outcomes. Out of the four samples aggregated in the Hanson et. al. (2017) study, three were

Canadian, and one was German, giving a combined sample size of 2,395 offenders. Not only did the current study utilise a sample twice the size, the entirety of the sample comprised of a nationwide New Zealand cohort. Although risk assessment tools, such as the Static-99R, have demonstrated predictive validity across many samples from different countries, there has been previous instances of country-specific effect sizes, notably effect sizes from UK samples demonstrating significantly higher effect sizes for the RM2000 than samples from other countries (L. Helmus, Babchishin, & Hanson, 2013). Additionally, it has been found that at least some of the items of the Static-2002R may not be as predictive for Canadian Aboriginal offenders as they are for Canadian non-Aboriginal offenders (Babchishin et al., 2012). Although that finding cannot be directly applied to indicate that New Zealand Māori or Pacific Islander offenders will have a risk profile distinct from New Zealand European offenders, it could indicate that as an overall cohort, there may be inherent population differences relevant to risk assessment between the current sample and the samples used in Hanson et. al. (2017), especially when 38.8% of the current sample identified as New Zealand Māori or Pacific Islander. Further research into the application of Hanson et. al.'s (2017) standardised risk categories would endeavour to shed more light on potential population differences, similarities, and normative characteristics for each of the risk categories in a New Zealand context.

However, even with the aforementioned population differences, the similarities that were observed between the recidivism rates of the CRMSO categories and the expected recidivism rates of the five categories given by Hanson et. al. (2017), provide further validation for the application of the standardised communication of risk; demonstrating comparable results in a New Zealand context with a different integer-based static risk measure, the CRMSO.

The CRMSO should undergo further independent validation in New Zealand before it can be recommended for wider use, however, the fact that the measure was developed using a cross-validation strategy – estimated from one half of the sample, and tested on the remaining half – does provide initial support for the measure, especially as the predictive accuracy did not decrease at all when applied to the test sample, and should have minimised any potential overfitting of the measure while it was being modelled.

Overall, the current study demonstrates that some of the items in the ASRS-R may not be relevant for predicting sexual recidivism among offenders in New Zealand, and offers an alternative measure, the CRMSO, which has been able to demonstrate moderate predictive accuracy for both 5-year and 10-year sexual recidivism that is comparable to the predictive accuracy demonstrated by the ASRS-R. Furthermore, the risk categories of the CRMSO were more sensitive to differences in the relative risk of sexual offenders than the ASRS-R, and the application of the risk communication labels created by Hanson et. al. (2017) and utilised in the CRMSO will allow for risk to be communicated to decision-makers in a more meaningful way; impacting on the decisions that will be made relating to offender management and treatment, especially so for those offenders deemed to be at the relative highest and lowest categories of risk.

Study 2. Do high-risk sexual offenders remain high-risk over time? Investigating patterns and potential moderators of desistance in New Zealand.

Although the concept of desistance from offending in general has been well studied in the realm of criminology over multiple decades (Farrington & West, 1995; Giordano et al., 2002; Laub & Sampson, 2001; Shadd Maruna, 2001), little attention has been given to desistance from sexual offending specifically. The limited research focus on both the observed rates of desistance and the potential mechanisms or pathways of desistance can be mostly attributed to the long-held belief that offenders who commit sexual crimes are inherently different from who commit violent or general crimes, and as a group are more dangerous and untreatable than the general criminal population. In other words, it has generally been regarded that a high-risk sexual offender will always be a high-risk sexual offender (Farmer et al., 2015; D. A. Harris, 2014; Lussier et al., 2010).

However, it is well established that the base rates and recidivism rates of sexual offending are substantially lower than those for violent and general offending, and that a sexual offender who is released from prison has a higher chance of not being convicted of another sexual offence than they do being convicted of another sexual offence, even for those considered as high-risk. Furthermore, it is significantly more common for a sexual offender to be convicted of another violent or general offence than another sexual offence (L. a. Craig et al., 2007; G. T. Harris & Rice, 2007; Lussier & Cale, 2013; Lussier et al., 2016; Moore, 2012). Therefore, it is suggestive of desistance for sexual offenders, and there is still much to be determined as to the similarities or differences between when, why, and how sexual desistance occurs, compared to desistance from violent and general crime. Improving the working knowledge and understanding of sexual

desistance within correctional psychology would allow for more accurate risk assessment to be made over time, and for more efficient allocation of the resources attached to the outcomes of those risk assessments. Additionally, knowledge of the strongest protective factors for sexual offenders could then be utilised to increase the chances of desistance and reduce the chance of offending behaviour persisting.

Recent research by Hanson and colleagues (2014) found that high-risk sexual offenders, as classified by the Static-99R, did not remain high-risk once they had been offence-free in the community for a certain period of time. Using an aggregated sample of 7,740 sexual offenders from 21 samples, with follow-up times of at least 20 years, the authors used survival analyses to calculate the yearly rates of recidivism. They found that the initial 5-year rate of sexual recidivism for the high-risk sexual offenders was 22%, and once offenders in that same static risk category had been sexual offence-free in the community for 10 years, their 5-year rate of sexual recidivism had decreased to 4.2%. The low-risk offenders maintained sexual recidivism rates of 1-5% throughout, which indicates that once the high-risk offenders had remained offence-free in the community for 10 years, their risk was the same as the low-risk sexual offenders. Furthermore, the rate of desistance was not affected by any of the investigated moderators of the time offence-free effect; age at release, type of sample (routine correctional, preselected treatment, preselected high risk/needs), type of sexual offender (adult rapists, child molesters, incest offenders), year of release, and country of origin. This finding is significant for interpreting and applying static risk assessment to sexual offenders, and indicates that static risk is a valid but time-dependent measure of an individual's propensity to reoffend sexually; most high-risk sexual offenders do not remain high-risk over an extended period of time (R. Karl Hanson, Harris, Helmus, & Thornton, 2014).

Hanson et. al (2014) identified a few important limitations of their study; firstly, the recidivism information they had access to for the samples only included data on sexual recidivism, so the authors were unable to determine whether the offenders were desisting only from sexual recidivism, while continuing to persist with violent and general offending behaviour, or whether the offenders were in fact completely desisting from all criminal behaviour.

Additionally, Hanson et. al. (2014) commented on the necessary assumption for their results that being released into the community would in fact offer opportunities to reoffend for the offenders; however, offenders in some samples may have been placed on release conditions that drastically lowered those opportunities (i.e. being placed on to house arrest, or daily probation checks with restrictions on housing, recreation, and employment locations), and supervision data was not available for the 21 samples that were included in the study (R. Karl Hanson et al., 2014). Five of the 21 samples included were North American-based, and North America in particular has been highlighted in terms of strict supervision conditions for sexual offenders, as well as inclusion on a Sex Offender Register. This database can be accessed by the general public and provides a register which guarantees lifetime inclusion for any individual convicted of a sexual offence, regardless of the severity or type of sexual offence (Bersot & Arrigo, 2015; Göbbels et al., 2012; Kruttschnitt et al., 2000; Lussier et al., 2016).

Supervision conditions have previously been identified as a possible moderator of the time offence-free effect for sexual offenders, where a constant hazard rate of 1% per year for the first 10 years was found in a Florida sample of 1,789 adult sex offenders (Zgoba et al., 2012). It was theorised that the unusually constant hazard rate could have been due to strict supervision conditions and high rates of technical breaches for those conditions. To add further support to that theory, Lussier and Gress (2014) found that technical violation of supervisory conditions

was the most common negative re-entry outcome for a sample of 169 moderate-to-high risk sexual offenders who had all been released in to the community either on standard probation services or intensive supervision, with 31% of the sample breaching the conditions of their supervision in a one-year follow-up.

The current study aims to address the limitations in the original Hanson et. al. (2014) study, while extending the results to a New Zealand context where little is known empirically about the desistance of sexual offenders, especially in regard to the stability of static risk assessment over time for sexual offenders who are deemed to be at a high risk of reoffending at the time of their release back in to the community. Firstly, access to full offence histories for all of the offenders included in the current study means that it will be possible to determine whether desistance from violent and general offending, as well as from sexual offending, has occurred, thus providing a more comprehensive picture of the desistance rates and patterns for sexual offenders.

Secondly, the offenders included in the current study are a nationwide cohort; all offenders convicted of a sexual offence who were released from a New Zealand prison within an 11-year period of time, from 1st January 1992 to 31st December 2002 ($N = 5,895$). This contrasts with the aggregated sample of offenders taken from 21 studies in 8 different countries that was utilised in the initial Hanson et. al. (2014) study, and means that the results will not be confounded by any potential effects of differing policies and supervisory conditions seen across countries that could directly impact the opportunities that offenders have to commit further offences while in the community. Furthermore, a nationwide sample is difficult to obtain in the vast majority of countries where research into desistance, risk assessment, or recidivism often occurs, due to the size of the countries and the scale of the offender population within those

countries. In larger countries (i.e. North America, United Kingdom, Australia, Canada), the issue of obtaining access to nationwide samples is further compounded by offender records being maintained on a variety of county or state databases, and from state to state (or county to county), different supervision practices and policies may also be in place. However, in New Zealand, only one set of supervisory practices are employed across the country by the Department of Corrections, and all offender records are kept in one national Database (Integrated Offender Management System), making New Zealand a unique environment for this type of research.

Moreover, comments have previously been made regarding the dearth of literature on sexual desistance in Western countries outside of North America; countries that maintain a less penal approach to offender management and supervision of sexual offenders (Kazemian, 2007; Kras & Blasko, 2016; Lussier & McCuish, 2016). As supervision practices and offender management policies may directly impact both the available mechanisms of desistance for sexual offenders and the overall likelihood of desistance occurring, it is imperative to obtain a broader range of data on desistance from sexual offending in an international context. The current study will be able to offer some empirical evidence for the desistance rates and patterns of sexual offenders in a country with less penal policy towards the management and community supervision of sexual offenders. One example of the differing type of supervision practice is the current New Zealand approach to the Child Sex Offender (CSO) Register. Offenders convicted of a sexual offence against a child who have been imprisoned for that offence (or if given a community sentence, at the direction of the judge) can be placed on the register for an 8-year or 15-year term, or for life, dependent on the severity of the offence committed. Class 1 offences, that incur an 8-year term on the register, include non-contact only offences (such as indecent

communication with a child under 16 years of age, or offences relating to the procurement or distribution of indecent materials involving a child under 16 years of age). Class 2 offences, that incur a 15-year term on the register, include contact offences deemed to be at the less severe end of offence behaviour (i.e. indecent acts or assaults). Class 3 offences, that incur lifetime placement on the register, include more serious contact offences (i.e. sexual violation, attempted or actual sexual connection). In addition, the public do not have access to any information about who may be on the register and where they may be located; New Zealand has no community notification policy. Only the New Zealand Police and Department of Corrections have access to the CSO Register, with the ability to notify other government agencies (i.e. Ministry of Social Development) or affected persons (i.e. parent or teacher) if it is believed that an individual on the register may be a potential threat to a specific child or children (New Zealand Police, 2016). This contrasts with the Sex Offender Register in the United States, where it is possible for an individual to be placed on the register for life for an offence as minor as urinating in a public playground (classified as indecent exposure), and while on that register, can be identified and have their location tracked by any member of the public (Kazemian, 2007).

If the current study is able to determine that desistance from sexual offending still occurs in a country which does not employ mandatory lifetime placement on a sex offender register, or a community notification policy, there could be significant implications for how other countries could manage the community supervision of sexual offenders. Additionally, the current study may be able to confirm that the sexual desistance patterns for high-risk sexual offenders initially identified by Hanson et.al. (2014) can be extended to violent and general offending and determine that high-risk sexual offenders are desistance from criminal behaviour overall after a

period of time spent offence-free in the community; providing valuable information regarding the long-term application of static risk assessment for high-risk sexual offenders in New Zealand.

2. Method

For details on the offender sample and the majority of the procedural steps taken, please refer back to the General Method section of the Overview of the Empirical Chapters.

Procedure

For some of the analyses in this study, the categories of the ASRS and ASRS-R were reduced to 3 risk categories (from the usual 4 categories), in order to maximise the sample size and increase the stability of the results. To ensure that the methodology of this study was closely aligned with that of Hanson et. al. (2014), a similar percentile ranking system was used to the one they applied to the Static-99R. Specifically, scores one standard deviation below the population mean were considered “low-risk”, scores one standard deviation above the population mean were considered “high-risk”, and the remaining scores were considered “moderate-risk.” The ranking system was applied to both the ASRS and the ASRS-R, to observe how both scoring methods compared. For the ASRS, this meant that scores of 0 were coded as “low-risk,” scores of 1, 2, and 3 were coded as “moderate-risk,” and scores of 4 and above were considered “high-risk.” For the ASRS-R, scores of -3, -2, and -1 were coded as “low-risk,” scores of 0, 1, 2, and 3 were coded as “moderate-risk,” and scores of 4 and above were considered “high-risk.”

Data analyses

Goals of the current research are threefold, and are as follows:

Goal 1: Describe the desistance results of the sample, as characterised by a lack of reconviction. Generate desistance results for sexual, violent, and general recidivism, as well as any recidivism overall (total recidivism), to determine whether all types of offending are desisted from at the same rate.

Goal 2: Determine whether there are any significant differences in desistance rates or initial 5-year recidivism rates between offenders with differing levels of risk (risk levels characterised by the ASRS and ASRS-R), and with differing offender profiles; victim gender, victim age, age at release, and contact or non-contact offenders.

Goal 3: Determine how similar the desistance results are from the results of Hanson and colleagues (2014), and confirm whether the results are able to expand on the 2014 findings and add further support to the original conclusions that were drawn.

Life-table survival analyses were carried out to identify the desistance rates of each type of recidivism – sexual, violent, general, any – and the desistance rates for each offender subgroup that may prove to be a moderator to the time-free effect; level of risk, age of victim, gender of victim, and age at release. 10-year, 15-year, and 20-year desistance results were reported using hazard ratios; the risk of recidivism relative to the initial 5-year rates of recidivism. Desistance was identified as time spent offence-free in the community; offence-free as measured by a lack of conviction for any new offence post-release. The 95% confidence intervals were generated both for the hazard ratios and for the observed proportions of recidivism, in order to demonstrate the significance of any differences between the offender subgroups, and across recidivism types.

Kaplan-Meier survival analyses were also carried out to further compare the overall survival rates of the different risk categories, and the varying offender profiles. Survival rates for offenders who had been in the community for 5 years offence free, and 10 years offence free, were also obtained using Kaplan-Meier survival analyses. Chi square analyses then tested for the significance of any differences in survival rates.

2. Results

Sexual Recidivism

The overall sexual recidivism rate was 14.71% for the total sample ($n = 5,895$), 4.68% for the low-risk cases ($n = 1196$), 14.54% for the moderate-risk cases ($n = 3754$), and 28.04% for the high-risk cases ($n = 945$). The average follow up period for the sample was 18.8 years (6874 days), with a minimum follow up time of 12.8 years (4684 days), and a maximum follow up time of 23.8 years (8693 days).

The cumulative survival rates over time for the three risk categories of the ASRS-R are plotted in Figure 5 below. Although all analyses and calculations were carried out for both the ASRS and the ASRS-R, only the analyses pertaining to the ASRS-R will be addressed in the results, due to the more accurate classification of offender risk level obtained by the ASRS-R categories compared to the ASRS. Figure 4 demonstrates that the risk of recidivism is highest in the years immediately following release, and diminishes over the remainder of the follow up period. The pattern is noticeably strongest for the high-risk cases, and still very apparent for the moderate-risk cases, whereas the low-risk cases stay fairly stable over time, at a consistently low rate of recidivism. During the first 5 years post-release, 8.82% of the total cases, 2.17% of the

low-risk cases, 8.42% of the moderate cases, and 18.84% of the high-risk cases reoffended sexually.

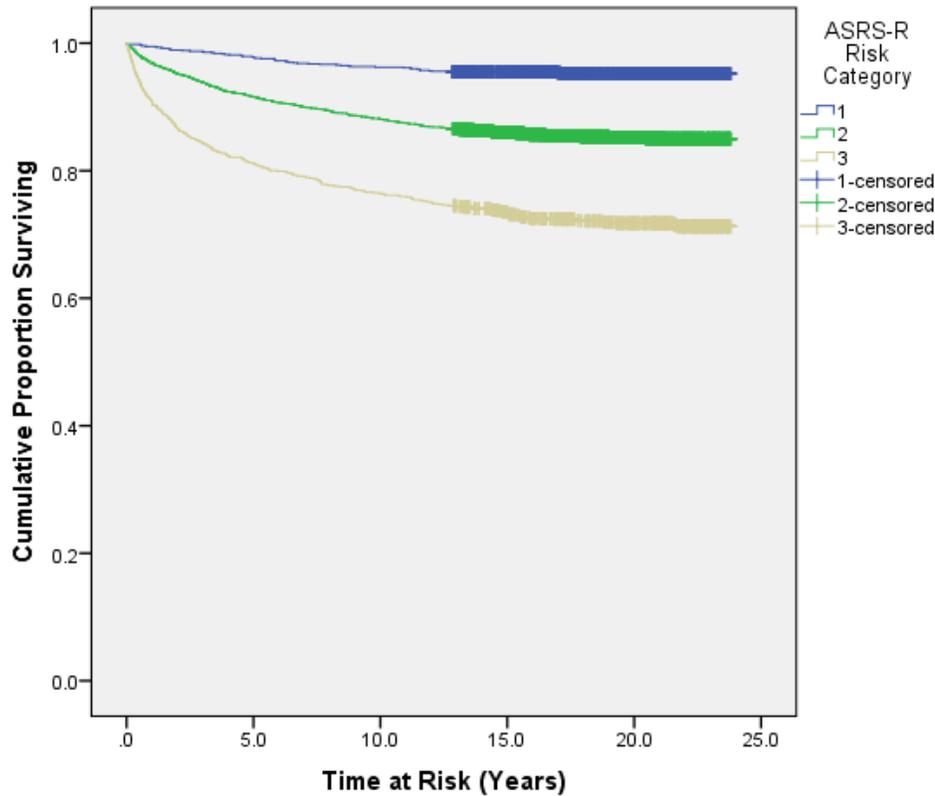


Figure 5. Kaplan-Meier survival plot showing cumulative sexual recidivism failure rates as a function of ASRS-R risk category.

Figures 6 and 7 demonstrate the cumulative survival rates for offenders who remained free of a sexual offence for 5 years, and 10 years, respectively. Table 18 summarises the data from Figures 5, 6 and 7. Although there were differences between the overall sexual survival rates of the three offender groups, with the high-risk group reoffending at a faster rate than the other groups, all offenders who had made it to 5-or-10-years offence-free had significantly lower rates of recidivism than the respective rates for offenders at the time of their release. For example, from time at release, the 5-year sexual recidivism rate for the high-risk group was

18.84%, whereas for high-risk offenders who remained sexual offence-free for 5 years, the 5-year recidivism rate dropped to 5.87%, and decreased further to 3.74% for offenders who remained sexual offence-free for 10 years. The 5-year recidivism rate for high-risk offenders who had been offence-free for 5 years was less than the expected 5-year recidivism rate for the moderate-risk offenders from time-at-release (8.42%). The 5-year recidivism rate for high-risk offenders who had been offence-free for 10 years was not substantially different from the expected 5-year recidivism rate from time-at-release for the low-risk offenders (2.17%).

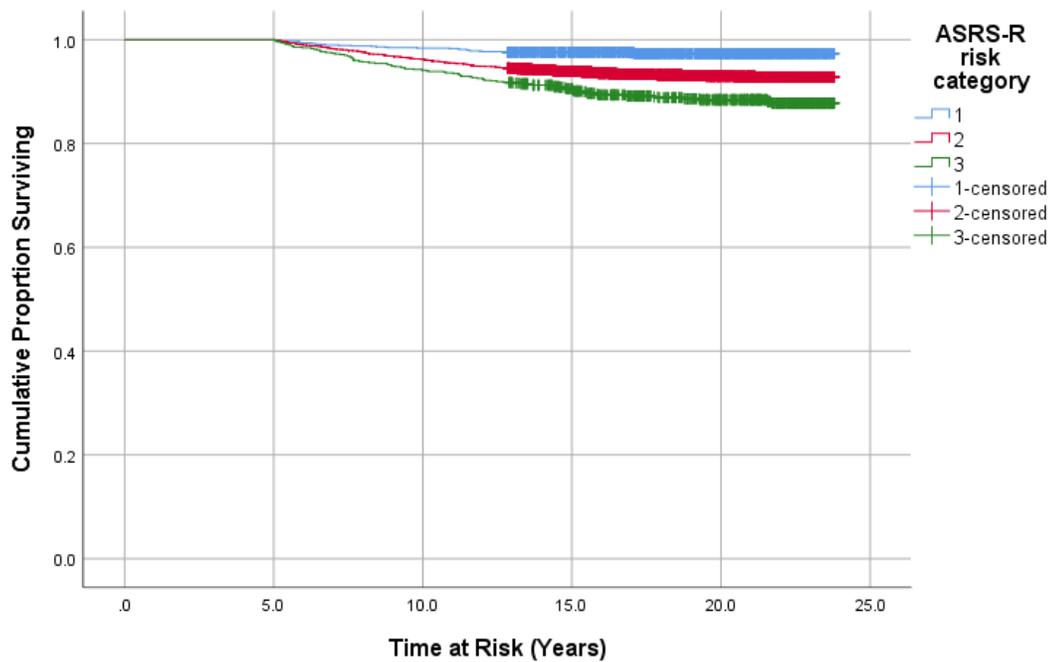


Figure 6. Kaplan-Meier survival plot showing cumulative sexual recidivism failure rates from 5 years sexual offence-free as a function of ASRS-R risk category.

Moreover, the 5-year sexual recidivism rate for the high-risk offenders who remained sexual offence-free for 15 years dropped to 2.11%, which matched the 5-year sexual recidivism rate for the low-risk offenders at the time of release.

Additionally, the 10-year sexual recidivism rate (from time at release) for the high-risk group was 23.60%, whereas for high-risk offenders who remained sexual offence-free for 5 years, the 10-year recidivism rate declined to 9.39%, and dropped even further to 5.54% for offenders who remained sexual offence-free for 10 years. The 10-year recidivism rate for high-risk offenders who remained sexual offence-free for 5 years was less than the expected 10-year recidivism rate for the moderate-risk group from time-at-release (11.88%). As for the 10-year recidivism rate for high-risk offenders who remained sexual offence-free for 10 years, it was still significantly closer to the 10-year recidivism rate for low-risk offenders (3.76%) than it was to the rate for the moderate-risk offenders (11.88%) from time-at-release.

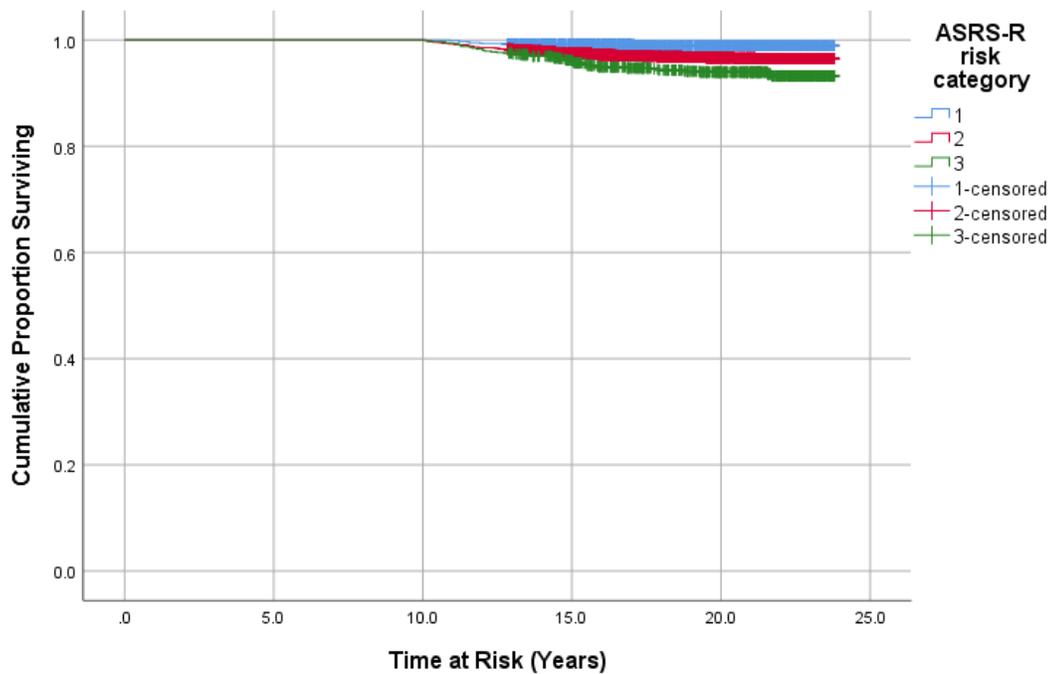


Figure 7. Kaplan-Meier survival plot showing cumulative sexual recidivism failure rates from 10 years sexual offence-free as a function of ASRS-R risk category.

Similar results were also found for the moderate-risk offenders; the initial 5-year recidivism rate from time-at-release was 8.42%, and for offenders who had remained sexual

offence-free for 5 years, this rate dropped to 3.78%, dropped again to 2.36% for moderate-risk offenders who had been sexual offence-free for 10 years, and dropped further to 0.09% for those offenders who had been sexual offence-free for 15 years. The 5-year recidivism rate for moderate-risk offenders who had been sexual offence-free for 10 years was almost identical to the 5-year recidivism rate for the low-risk offenders from time at release (2.17%). Additionally, the initial 10-year sexual recidivism rate for the moderate-risk offenders was 11.88% from time-at-release, which dropped to 6.05% for offenders who had been sexual offence-free for 5 years, and 2.96% for offenders who had been sexual offence-free for 10 years. The 10-year sexual recidivism rate for moderate-risk offenders who had been sexual offence-free for 10 years was less than the expected rate of low-risk offenders from time-at-release (3.76%).

Conversely, the low-risk group showed very little change in sexual recidivism rates over time offence-free, with the recidivism rates remaining below 4% at all times. The initial 5-year sexual recidivism rate for the low-risk offenders was 2.17% from time-at-release, which dropped to 1.62% after 5 years sexual offence-free, 0.78% after 10 years sexual offence-free, and 0.21% after 15 years sexual offence-free. For 10-year sexual recidivism, the low-risk offenders had initial rates of 3.76%, which dropped to 2.39% for offenders who had remained sexual offence-free for 5 years, and 0.96% for offenders who had remained sexual offence-free for 10 years.

Table 22 compares the observed sexual recidivism rate for the initial 5 years post-release with the sexual recidivism rates for years 6 to 10, years 11 to 15, and years 16 to 20 post-release. For increased readability of the Results section, the tables of risk ratios (Table 22, 23, 24, & 25) are included at the end of the Results section. The comparisons are reported as risk ratios, with the rates for 6-10 years, 11-15 years, and 16-20 years being divided by the rates for the first 5

years following release. For example, a risk ratio of 0.5 would indicate that the sexual recidivism rate was 50% of the initial 5-year rate of recidivism, and a ratio of 0.25 would indicate that the sexual recidivism rate was a quarter of the initial 5-year rate of recidivism. All risk ratios were calculated using life table survival analyses.

There were significant differences in the initial 5-year sexual recidivism rates between offender subgroups (as identified using 95% confidence intervals), and especially prominent were the initial 5-year sexual recidivism rate differences between each of the ASRS-R risk levels and “age at release” groups. For the ASRS-R risk levels, the low-risk group displayed a 2.17% 5-year sexual recidivism rate, with an 8.42% rate for the medium-risk group, and a rate of 18.84% for the high-risk group. For the various age at release groups, the young offenders (aged 15-29) displayed an initial 5-year sexual recidivism rate of 11.50%, with a rate of 9.02% for offenders aged between 30 and 49, and a rate of 4.30% for those offenders aged 50 and above at their release from prison.

The initial 5-year sexual recidivism rates were also significantly different for the majority of the “victim age” and “victim gender” groups; the only exceptions being the differences between sexual offenders with male only victims and those with both male and female victims, and the differences between initial 5-year sexual recidivism rates for offenders who only offended against adults and those who offended against both children and adults (over and under the age of 16). For the varying victim age groups, 6.34% of those with child-only victims had sexually reoffended in the first 5 years post-release, with a 5-year recidivism rate of 9.54% for those with adult-only victims, and a rate of 11.22% for offenders with both child and adult victims. For the varying victim gender groups, the initial 5-year sexual recidivism rate for those

with female-only victims was 7%, with a rate of 12.96% for offenders with male-only victims, and a rate of 16.48% for offenders with both male and female victims.

However, even with the initial differences in risk of sexual recidivism between the various offender subgroups, the relative reductions in risk over each subsequent 5-year period were very similar across all subgroups. The risk ratios comparing the sexual recidivism rates for years 6 to 10 post-release with years 1 to 5 were clustered between 0.29 and 0.50, with a median risk ratio of 0.42. The outlier for 6 to 10 years post-release was the low-risk group, with a risk ratio of 0.75, but the higher ratio is likely due to the very low initial recidivism rate (2.17%) for the low-risk offenders. The risk ratios comparing the sexual recidivism rates for years 11 to 15 post-release with years 1 to 5 were tightly clustered between 0.19 and 0.30 (median of 0.25), with the exception of the low-risk group, which demonstrated a slightly higher risk ratio of 0.36. The risk ratios comparing the sexual recidivism rates for years 16 to 20 post-release with years 1 to 5 post-release were tightly clustered between 0.03 and 0.14, with a median risk ratio of 0.10. For the total sample, the risk ratios were 0.41 for years 6 to 10 post-release, 0.25 for years 11 to 15, and 0.09 for years 16 to 20.

Additionally, the offenders with only non-contact offences had a lower risk ratio for 6 to 10 years post-release (0.13), and for 11 to 15 years post-release (0.09), than the rest of the subgroups, but due to the unusual risk profile of this group, and the relatively small number of offenders included, the results of this offender category will be discussed separately. Out of the 77 offenders who did reoffend sexually in this group, at least 28 offenders were convicted of a contact sexual offence post-release, so the sexual offending behaviour for some of historically non-contact offenders had potentially escalated in severity over time. It is also worth noting that 27.39% of the prior non-contact group had sexually reoffended in the first 5 years post-release –

a rate significantly higher than all other subgroups; by comparison, 18.84% of the high-risk group (as identified by the ASRS-R) sexually reoffended after 5 years following their initial release, and 16.48% of the offenders with both male and female victims sexually reoffended in their first 5 years following release. During the total follow-up time, the sexual recidivism rate for the complete sample was 14.71%, and during the same timeframe, 33.48% of the non-contact offenders sexually reoffended; this was higher than the overall recidivism rate for all other subgroups, including the high-risk offenders (28.04%), the offenders aged 15 to 29 at the time of their release (19.91%), the offenders with both male and female victims (25.09%), and the offenders with only male victims (19.96%).

Violent Recidivism

The overall violent recidivism rate for the total sample ($n = 5,895$) was 28.24%; 3.01% for the low-risk cases, 30.47% for the moderate-risk cases, and 61.9% for the high-risk cases. The cumulative violent survival rates for the three offender groups are plotted in Figure 8 below. As was the case for sexual recidivism, the recidivism risk is highest in the first 5 years and steadily declines from that point onwards for the high-risk and moderate-risk offenders, whereas the low-risk offenders have a much more consistent recidivism risk over time. During the first 5 years post-release, 17.05% of the total sample had violently offended, 1.17% of the low-risk group, 18.09% of the moderate-risk group, and 43.60% of the high-risk group, had violently offended.

Figures 9 and 10 demonstrate the cumulative survival rates for offenders who remained free of a new violent offence for 5 years, and 10 years, respectively. Table 19 summarises the data from Figures 8, 9 and 10. Although there were differences between the overall violent

survival rates of the three offender groups, with the high-risk group reoffending at a much faster rate than the other groups, all offenders who made it to 5-or-10-years offence-free had

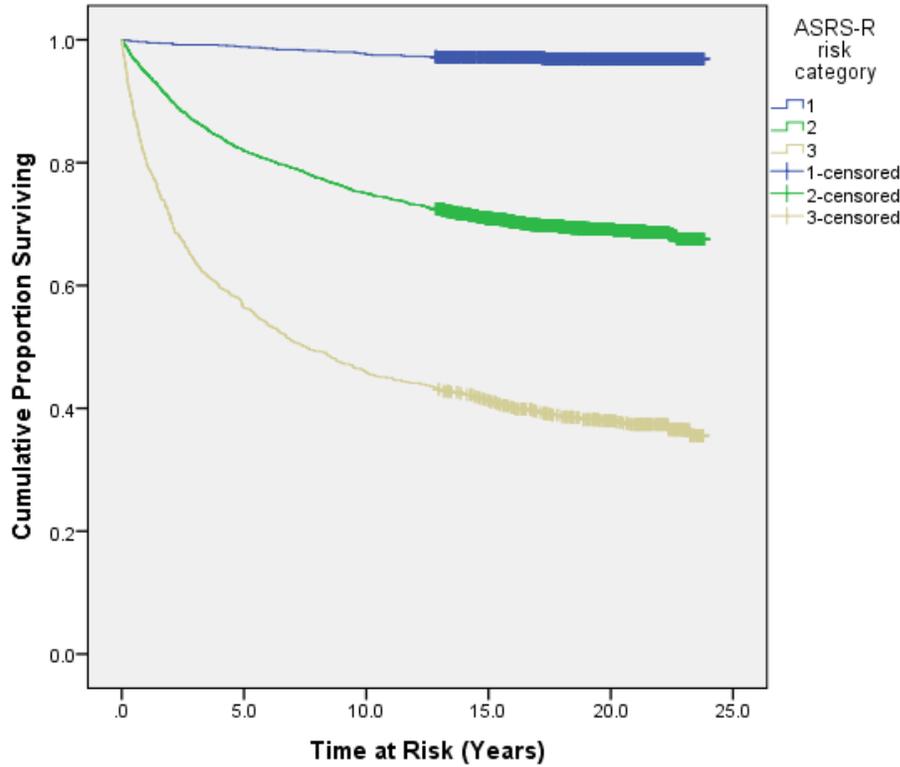


Figure 8. Kaplan-Meier survival plot showing cumulative violent recidivism failure rates as a function of ASRS-R risk category.

significantly lower rates of violent recidivism than the respective rates for offenders at the time of their release. For example, from time at release, the 5-year violent recidivism rate for the high-risk group was 43.60%, whereas for high-risk offenders who remained violent offence-free for 5 years, the 5-year recidivism rate dropped to 18.57%, decreased further to 10.14% for offenders who remained violent offence-free for 10 years, and decreased again to 6.72% for those who remained violent offence-free for 15 years. The 5-year recidivism rate for high-risk offenders who had been violent offence-free for 5 years was the same as the expected 5-year recidivism rate for the moderate-risk offenders from time-at-release (18.09%), Moreover, for high-risk

offenders who had been violent offence-free for 10 years, the 5-year recidivism rate was almost half of the initial 5-year rate for the moderate-risk offenders from time-at-release.

In addition, the 10-year violent recidivism rate from time at release for the high-risk group was 54.07%, whereas for high-risk offenders who remained violent offence-free for 5 years, the 10-year recidivism rate declined to 26.83%, and dropped even further to 15.67% for offenders who remained violent offence-free for 10 years. The 10-year recidivism rate for high-risk offenders who remained violent offence-free for 5 years was almost identical to the 10-year recidivism rate for the moderate-risk group from time-at-release (24.99%). As was also seen with the 5-year recidivism rates, the 10-year recidivism rate for high-risk offenders who remained violent offence-free for 10 years was significantly less than the initial 10-year recidivism rate for the moderate-risk offenders from time-at-release (15.67% compared to 24.99%, respectively).

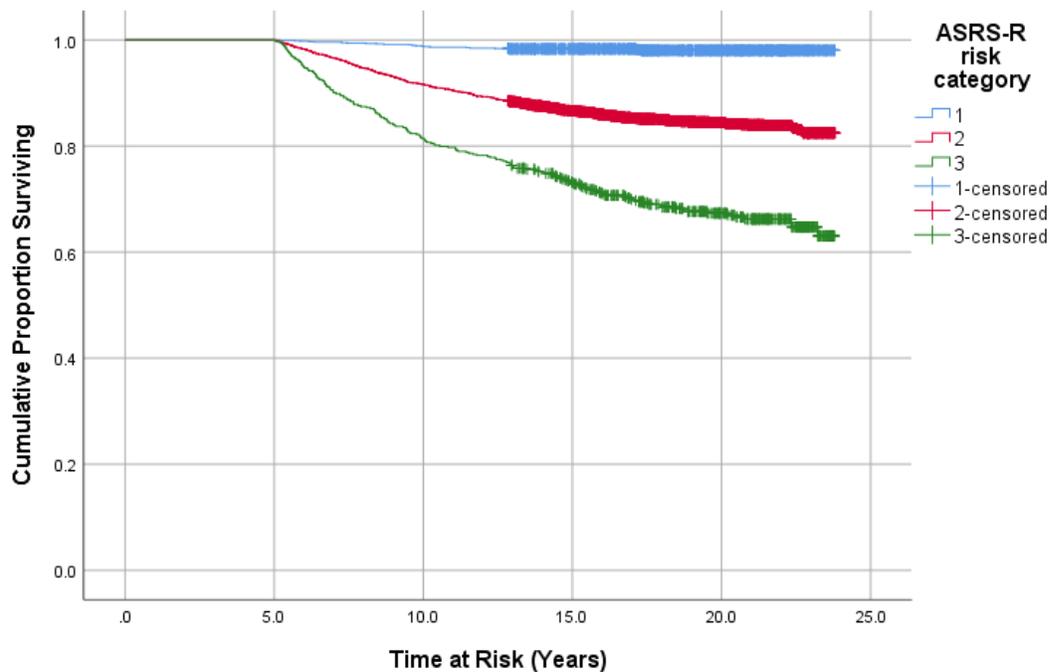


Figure 9. Kaplan-Meier survival plot showing cumulative violent recidivism failure rates from 5 years violent offence-free as a function of ASRS-R risk category.

Comparable results were also found for the moderate-risk offenders; the initial 5-year violent recidivism rate from time-at-release was 18.09%, and for offenders who had remained violent offence-free for 5 years, this rate dropped to 8.42% dropped again to 5.26% for moderate-risk offenders who had been violent offence-free for 10 years, and dropped further to 2.04% for those who had been violent offence-free for 15 years. The 5-year recidivism rate for moderate-risk offenders who had been violent offence-free for 10 years was substantially closer to the initial 5-year rate for the low-risk offenders (1.17%) than it was to the initial 5-year rate for the moderate-risk offenders (18.09%). Additionally, the initial 10-year violent recidivism rate for the moderate-risk offenders was 24.99% from time-at-release, which dropped to 13.24% for offenders who had been violent offence-free for 5 years, and 6.85% for offenders who had been violent offence-free for 10 years. The 10-year violent recidivism rate for moderate-risk offenders who had been violent offence-free for 10 years was, again, substantially closer to the expected rate of low-risk offenders from time-at-release (2.34%), than it was to the expected 10-year rate of moderate-risk offenders from time-at-release (24.99%).

In contrast, the low-risk group showed very little change in violent recidivism rates over time offence-free, with the recidivism rates remaining below 2.5% at all times. The initial 5-year violent recidivism rate for the low-risk offenders was 1.17% from time-at-release, which remained the same at 1.18% after 5 years violent offence-free, dropped to 0.51% after 10 years violent offence-free, and dropped again to 0.21% for those who remained violent offence-free for 15 years. For 10-year violent recidivism, the low-risk offenders had initial rates of 2.34%, which dropped to 1.69% for offenders who had remained violent offence-free for 5 years, and 0.68% for offenders who had remained violent offence-free for 10 years.

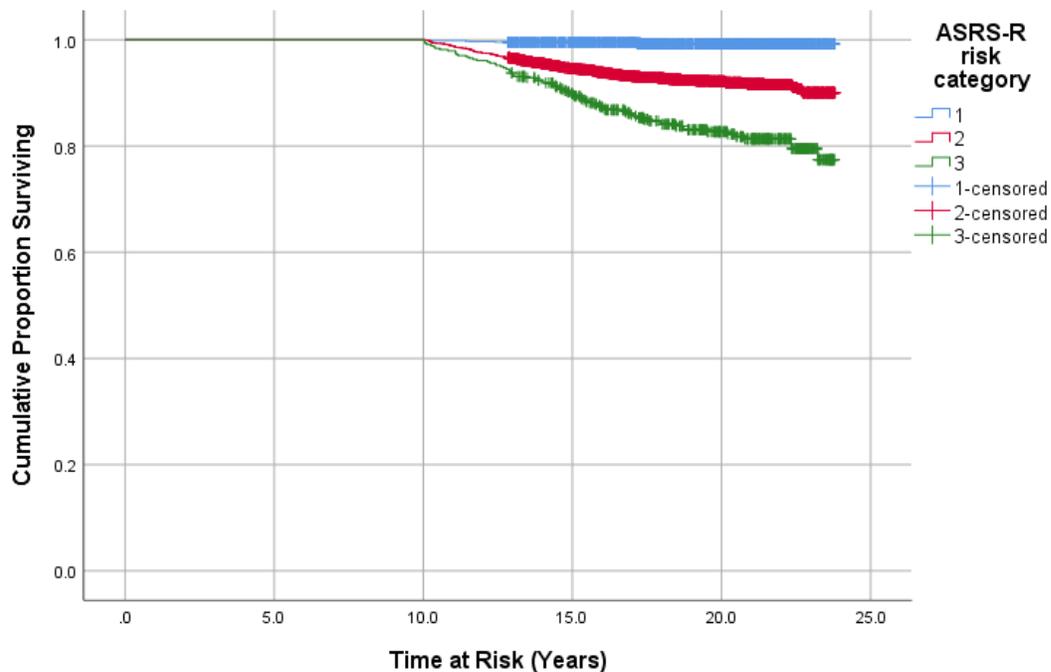


Figure 10. Kaplan-Meier survival plot showing cumulative violent recidivism failure rates from 10 years violent offence-free as a function of ASRS-R risk category.

Table 23 compares the observed violent recidivism rate for the initial 5 years post-release with the violent recidivism rates for years 6 to 10, years 11 to 15, and years 16 to 20 post-release. The comparisons are reported as risk ratios, with the rates for 6-10 years, 11-15 years, and 16-20 years being divided by the rates for the first 5 years following release. All risk ratios were calculated using life table survival analyses. There were very significant differences in the initial 5-year violent recidivism rates for all of the ASRS-R risk categories and for all of the “age at release” categories. For the low-risk group, the initial 5-year violent recidivism rate was 1.17%, with a rate of 18.09% for the medium-risk group, and an initial 5-year violent recidivism rate of 43.60% for the high-risk group. For offenders aged between 15 and 29 at the time of their release, the initial 5-year violent recidivism rate was 35.05%, with a rate of 15.69% for offenders

aged between 30 and 49 at the time of their release, and a rate of 1.77% for offenders aged 50 and above at the time of their release.

Almost all of the “victim age” and “victim gender” categories also demonstrated significantly different initial 5-year rates of violent recidivism. There were only two comparisons that did not reach significance (at the 95% confidence interval cut-off); offenders with child-only victims and offenders with both child and adult victims, and offenders with male-only victims and those with both male and female victims. Offenders with child-only victims had a 5-year violent recidivism rate of 12.81%, with a rate of 29.64% for offenders with adult-only victims, and a rate of 9.96% for offenders with both child and adult victims. For offenders with male-only victims, the initial 5-year violent recidivism rate was 9.26%, with a rate of 18.88% for offenders with female-only victims, and a rate of 9.74% for offenders with both male and female victims.

However, even with the significant differences in initial violent recidivism rates between the subgroups, the time-free effect was stable and consistent across all of the groups, just as it was for sexual recidivism. The risk ratios comparing the violent recidivism rates for years 6 to 10 with the initial recidivism risk in the first five years following release were tightly clustered between 0.41 and 0.57, with a median of 0.43. There were a few outlier subgroups; the low-risk offenders (risk ratio of 1.01), the offenders who were 50 years or older at the time of their release (risk ratio of 0.24), and offenders with both male and female victims (risk ratio of 0.04). The risk ratios comparing the rates for years 11 to 15 with the first five years post-release were tightly clustered between 0.13 and 0.29, with a median risk ratio of 0.26. The single outlier for years 11 to 15 remained the low-risk group (risk ratio of 0.43). The risk ratios comparing years 16 to 20 with years 1 to 5 following release were clustered between 0 and 0.18, with two groups

displaying no violent recidivism in years 16 to 20 post-release; offenders aged 50 and older at their time of release ($N = 380$), and offenders with both male and female victims ($N = 88$). The median risk ratio was 0.12. For the total sample, the risk ratio for years 6 to 10 was 0.46, with a risk ratio of 0.26 for years 11 to 15, and a risk ratio of 0.12 for years 16 to 20 post-release.

The non-contact offenders displayed a more normative profile for violent recidivism than for sexual recidivism, with an initial 5-year recidivism rate of 29.57%. Only three other subgroups shared 5-year rates that were above 20%; high-risk offenders (43.60%), offenders who were between 15 and 29 years of age at the time of their release (35.05%), and offenders with only adult victims (29.64%). The risk ratio comparing 6 to 10 years post-release with years 1 to 5 post-release for the non-contact group was 0.46, which dropped to 0.29 for years 11 to 15 post-release. However, the group became too small to include in the calculations for years 16 to 20, as there were only 46 offenders left in the group at the conclusion of year 20. During the follow-up period, the overall violent recidivism rate for the sample was 28.24%, with some subgroups producing significantly higher rates of recidivism; the high-risk offenders (61.9%), the offenders between 15 and 29 years of age at their time of release (52.33%), offenders with only adult victims (44.39%), and offenders with only non-contact offences (47.39%).

General Recidivism

The overall general recidivism rate for the total sample ($n = 5,895$) was 43.26%, 5.18% for the low-risk cases, 46.54% for the moderate-risk cases, and 78.41% for the high-risk cases. The cumulative general survival rates for the three offender groups are plotted in Figure 11 below. As was the case for sexual and violent recidivism, the general recidivism risk is highest in the first 5 years and steadily declines from that point onwards for the high-risk and moderate-risk

offenders, whereas the low-risk offenders have a much more consistent recidivism risk over time, and only decline slightly over the follow up period. During the first 5 years post-release, 33.47% of the total sample had been convicted of a new general offence, 2.59% of the low-risk group, 34.79% of the moderate-risk group, and 67.30% of the high-risk group, had been convicted of a new general offence.

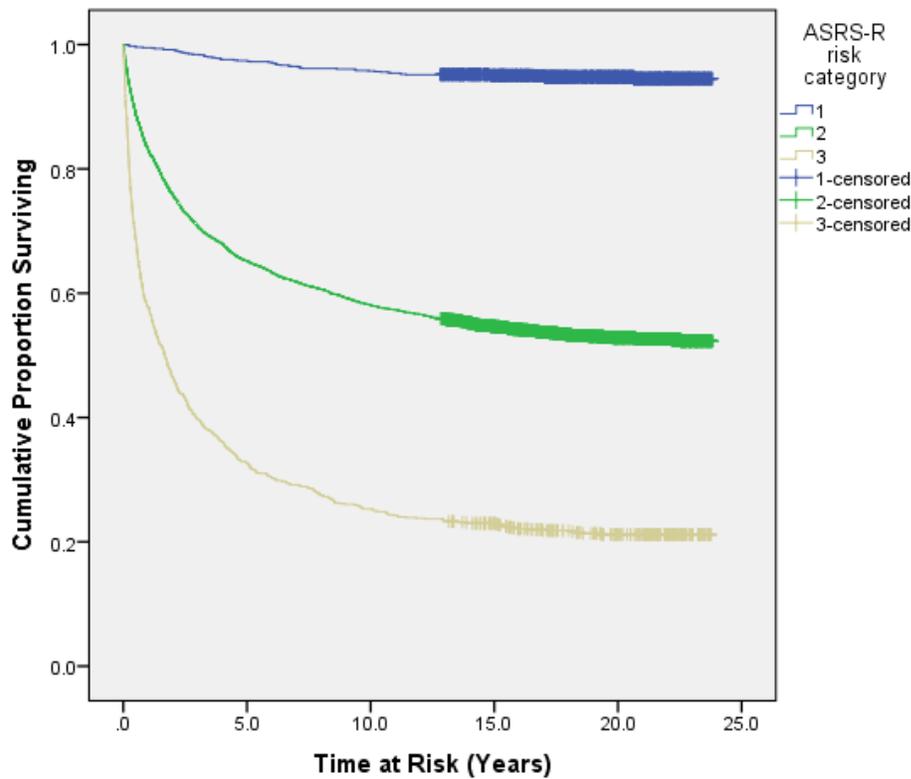


Figure 11. Kaplan-Meier survival plot showing cumulative general recidivism failure rates as a function of ASRS-R risk category.

Figures 12 and 13 demonstrate the cumulative survival rates for offenders who remained free of a new general offence for 5 years, and 10 years, respectively. Table 20 summarises the data from Figures 11, 12 and 13. Although there were differences between the overall general survival rates of the three offender groups, with the high-risk group reoffending at a much faster

rate than the other two groups, all offenders who made it to 5-or-10-years offence-free had significantly lower rates of general recidivism than the respective rates for offenders at the time of their release. For example, from time at release, the 5-year general recidivism rate for the high-risk group was 67.30%, whereas for high-risk offenders who remained general offence-free for 5 years, the 5-year recidivism rate dropped to 22.65%, decreased further to 9.21% for offenders who remained general offence-free for 10 years, and decreased again to 6.67% for those who remained general offence-free for 15 years. The 5-year recidivism rate for high-risk offenders who had been general offence-free for 5 years was markedly less than the expected 5-year recidivism rate for the moderate-risk offenders from time-at-release (34.79%). Moreover, for high-risk offenders who had been general offence-free for 10 years, the 5-year recidivism rate was less than a third of the initial 5-year rate for the moderate-risk offenders from time-at-release.

In addition, the 10-year general recidivism rate from time at release for the high-risk group was 74.71%, whereas for high-risk offenders who remained general offence-free for 5 years, the 10-year recidivism rate declined to 29.77%, and dropped even further to 14.64% for offenders who remained general offence-free for 10 years. The 10-year recidivism rate for high-risk offenders who remained general offence-free for 5 years was markedly less than the 10-year recidivism rate for the moderate-risk group from time-at-release (41.90%). As was also seen with the 5-year recidivism rates, the 10-year recidivism rate for high-risk offenders who remained general offence-free for 10 years was just over a third of the initial 10-year recidivism rate for the moderate-risk offenders from time-at-release (14.64% compared to 41.90%, respectively).

A similar pattern was also found for the moderate-risk offenders; the initial 5-year general recidivism rate from time-at-release was 34.79%, and for offenders who had remained

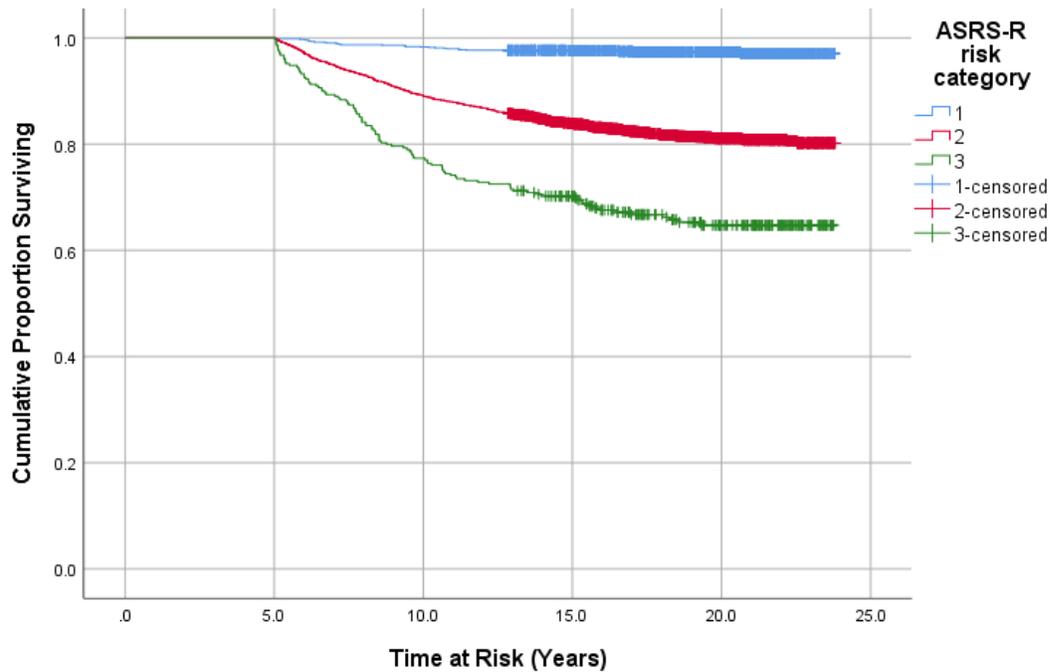


Figure 12. Kaplan-Meier survival plot showing cumulative general recidivism failure rates from 5 years general offence-free as a function of ASRS-R risk category.

general offence-free for 5 years, this rate dropped to 10.91%, dropped again to 5.69% for moderate-risk offenders who had been general offence-free for 10 years, and dropped further to 2.69% for those who had been general offence-free for 15 years. The 5-year recidivism rate for moderate-risk offenders who had been general offence-free for 10 years was substantially closer to the initial 5-year rate for the low-risk offenders (2.59%) than it was to the initial 5-year rate for the moderate-risk offenders (34.79%). Additionally, the initial 10-year general recidivism rate for the moderate-risk offenders was 41.90% from time-at-release, which dropped to 15.97% for offenders who had been general offence-free for 5 years, and 7.79% for offenders who had been general offence-free for 10 years. The 10-year general recidivism rate for moderate-risk offenders who had been general offence-free for 10 years was, again, substantially closer to the

expected 10-year rate of low-risk offenders from time-at-release (4.26%), than it was to the expected rate of moderate-risk offenders from time-at-release (41.90%).

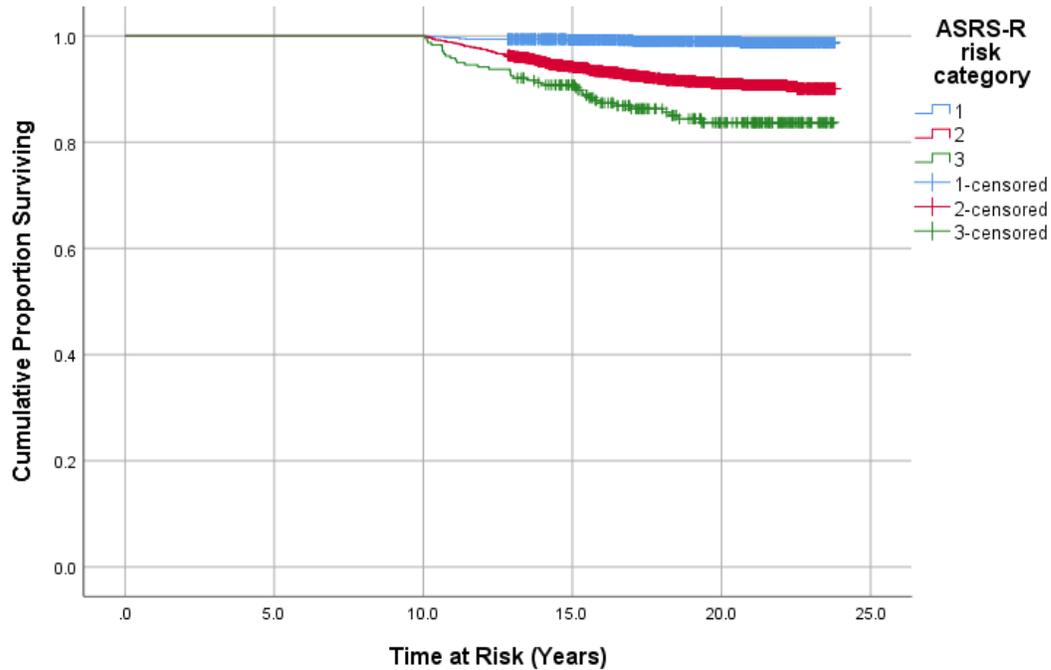


Figure 13. Kaplan-Meier survival plot showing cumulative general recidivism failure rates from 10 years general offence-free as a function of ASRS-R risk category.

In contrast, the low-risk group showed very little change in general recidivism rates over time offence-free, with the recidivism rates remaining below 4.5% at all times. The initial 5-year general recidivism rate for the low-risk offenders was 2.59% from time-at-release, which dropped to 1.72% after 5 years general offence-free, dropped further to 0.70% after 10 years general offence-free, and dropped again to 0.21% for those who had remained general offence-free for 15 years. For 10-year general recidivism, the low-risk offenders had initial rates of 4.26%, which dropped to 2.40% for offenders who had remained general offence-free for 5 years, and 0.87% for offenders who had remained general offence-free for 10 years.

Table 24 compares the observed general recidivism rate for the initial 5 years post-release with the general recidivism rates for years 6 to 10, years 11 to 15, and years 16 to 20 post-release. The comparisons are reported as risk ratios, with the rates for 6-10 years, 11-15 years, and 16-20 years being divided by the rates for the first 5 years following release. All risk ratios were calculated using life table survival analyses. There were significant differences in the initial 5-year general recidivism rates for all of the ASRS-R risk categories, all of the “age at release” categories, all of the “victim age” categories, and all of the “victim gender” categories. For the low-risk group, the initial 5-year general recidivism rate was 2.59%, with a rate of 34.79% for the medium-risk group, and an initial 5-year general recidivism rate of 67.30% for the high-risk group. For offenders aged between 15 and 29 at the time of their release, the initial 5-year general recidivism rate was 56.03%, with a rate of 30.90% for offenders aged between 30 and 49 at the time of their release, and a rate of 5.90% for offenders aged 50 and above at the time of their release. For offenders with child-only victims, the initial 5-year general recidivism risk was 25.69%, with a rate of 46.84% for offenders with adult-only victims, and a rate of 17.67% for offenders with both child and adult victims. Lastly, for offenders with male-only victims, the initial 5-year general recidivism rate was 21.60%, with a rate of 33.35% for offenders with female-only victims, and a rate of 11.99% for offenders with both male and female victims.

However, even with the significant differences in initial recidivism risk for each of the subgroups, the pattern of a stable and consistent time-free effect across the subgroups was very similar to the pattern seen previously with sexual and violent recidivism. The risk ratios comparing the general recidivism rates for years 6 to 10 with the initial recidivism risk in the first five years following release were tightly clustered between 0.22 and 0.39, with a median of 0.31.

There were a few subgroups that remained outliers; the low-risk offenders (risk ratio of 0.66), and offenders with both male and female victims (risk ratio of 0.67). The risk ratios comparing the rates for years 11 to 15 with the first five years post-release were tightly clustered between 0.03 and 0.27, with a median risk ratio of 0.14. The risk ratios comparing years 16 to 20 with years 1 to 5 following release were clustered between 0.02 and 0.11. The median risk ratio was 0.08. For the total sample, the risk ratio for years 6 to 10 was 0.27, with a risk ratio of 0.13 for years 11 to 15, and a risk ratio of 0.06 for years 16 to 20 post-release.

The non-contact offenders displayed an unusual profile for general recidivism, with an initial 5-year recidivism rate of 65.65%. Only three other subgroups shared 5-year rates that were above 35%; high-risk offenders (67.30%), offenders who were between 15 and 29 years of age at the time of their release (56.03%), and offenders with only adult victims (46.84%). The risk ratio comparing 6 to 10 years post-release with years 1 to 5 post-release for the non-contact group was 0.25. However, the group became too small to include in the calculations for years 11 to 15, or years 16 to 20, as there were only 43 offenders left in the group at the conclusion of year 15 (and only 19 left at the end of year 20). During the total follow-up period, the overall general recidivism rate for the sample was 43.26%, with some subgroups producing significantly higher rates of recidivism; the high-risk offenders (78.41%), the offenders between 15 and 29 years of age at their time of release (66.91%), offenders with only adult victims (57.86%), and offenders with only non-contact offences (74.78%).

Any Recidivism

The overall rate of any type of recidivism (sexual, violent, or general) for the total sample ($n = 5,895$) was 51.79%, 11.04% for the low-risk cases, 56.29% for the moderate-risk cases, and 85.71% for the high-risk cases. The cumulative general survival rates for the three offender

groups are plotted in Figure 14 below. As was the case for sexual, violent and general recidivism, the overall recidivism risk is highest in the first 5 years and steadily declines from that point onwards for the high-risk and moderate-risk offenders, whereas the low-risk offenders have a much more consistent recidivism risk over time, and only decline slightly over the follow up period. During the first 5 years post-release, 41.02% of the total sample had been convicted of a new offence, 5.60% of the low-risk group, 42.97% of the moderate-risk group, and 78.31% of the high-risk group, had been convicted of a new offence.

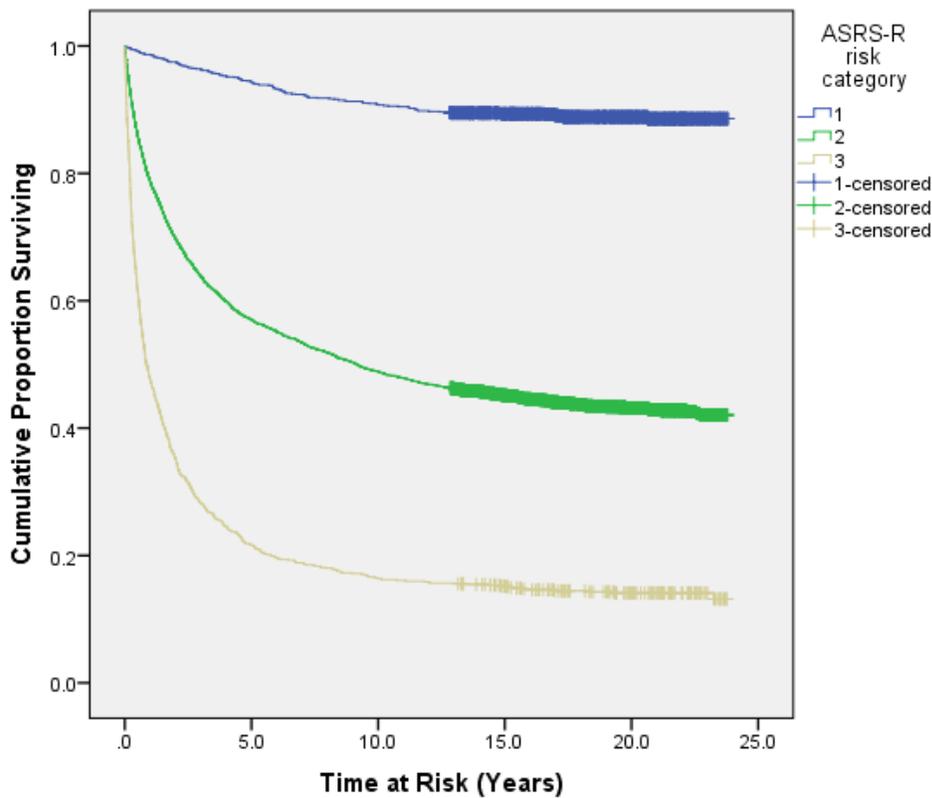


Figure 14. Kaplan-Meier survival plot showing cumulative any recidivism failure rates as a function of ASRS-R risk category.

Figures 15 and 16 demonstrate the cumulative survival rates for offenders who remained free of a new offence for 5 years, and 10 years, respectively. Table 24 summarises the data from Figures 14, 15 and 16. Although there were differences between the overall survival rates of the

three offender groups, with the high-risk group reoffending at a much faster rate than the other two groups, all offenders who made it to 5-or-10-years offence-free had significantly lower rates of recidivism than the respective rates for offenders at the time of their release. For example, from time at release, the 5-year overall recidivism rate for the high-risk group was 78.31%, whereas for high-risk offenders who remained offence-free for 5 years, the 5-year recidivism rate dropped to 24.39%, decreased further to 7.10% for those who remained free from any new offence for 10 years, and decreased again to 6.30% for those who remained free from any new offence for 15 years. The 5-year recidivism rate for high-risk offenders who had been offence-free for 5 years was almost half of the expected 5-year recidivism rate for the moderate-risk offenders from time-at-release (42.97%).

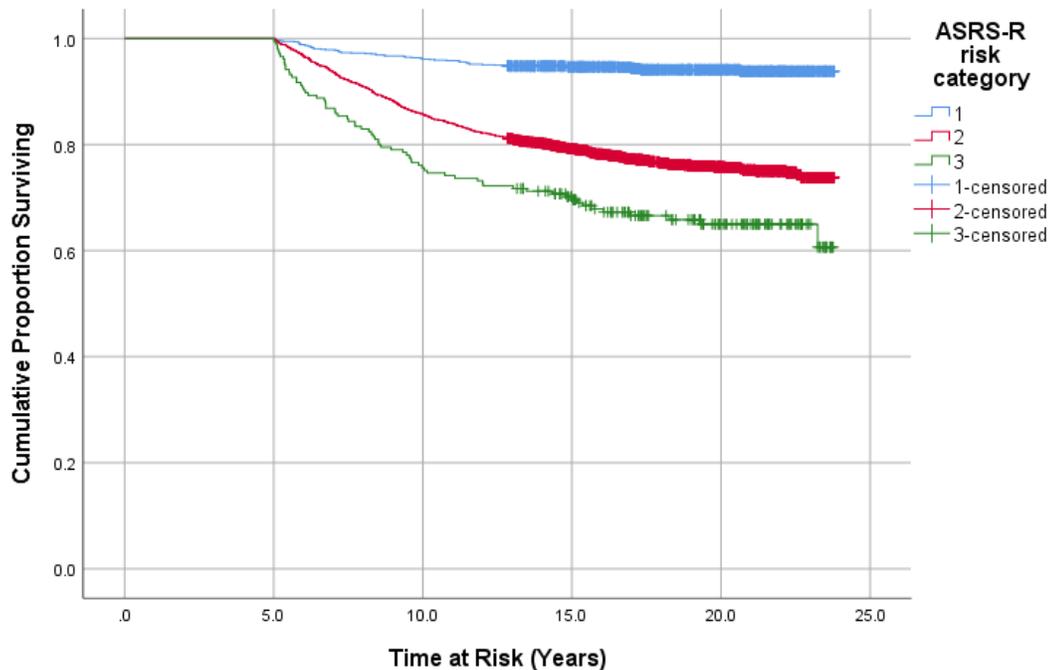


Figure 15. Kaplan-Meier survival plot showing cumulative any recidivism failure rates from 5 years any offence-free as a function of ASRS-R risk category.

Moreover, for high-risk offenders who had been offence-free for 10 years, the 5-year recidivism rate was one sixth of the initial 5-year rate for the moderate-risk offenders from time-at-release, and was very close to the initial 5-year rate for the low-risk offenders from time-at-release (5.60%).

In addition, the 10-year overall recidivism rate from time at release for the high-risk group was 83.60%, whereas for high-risk offenders who remained free from any new offence for 5 years, the 10-year recidivism rate declined to 29.76%, and dropped even further to 12.26% for offenders who remained offence-free for 10 years. The 10-year recidivism rate for high-risk offenders who remained offence-free for 5 years was markedly less than the 10-year recidivism rate for the moderate-risk group from time-at-release (51.09%). As was also seen with the 5-year recidivism rates, the 10-year recidivism rate for high-risk offenders who remained offence-free for 10 years was only a quarter of the initial 10-year recidivism rate for the moderate-risk offenders from time-at-release (12.26% compared to 51.09%, respectively). The 10-year recidivism rate for high-risk offenders who remained offence-free for 10 years was also very close to the initial 10-year recidivism rate for the low-risk group from time-at-release (9.20%).

A similar pattern was also found for the moderate-risk offenders; the initial 5-year overall recidivism rate from time-at-release was 42.97%, and for offenders who had remained offence-free for 5 years, this rate dropped to 14.25%, dropped again to 7.46% for moderate-risk offenders who had been free from any new offence for 10 years, and dropped further to 3.47% for those who had been free from any new offence for 15 years. The 5-year recidivism rate for moderate-risk offenders who had been offence-free for 10 years was substantially closer to the initial 5-year rate for the low-risk offenders (5.60%) than it was to the initial 5-year rate for the moderate-risk offenders (42.97%).

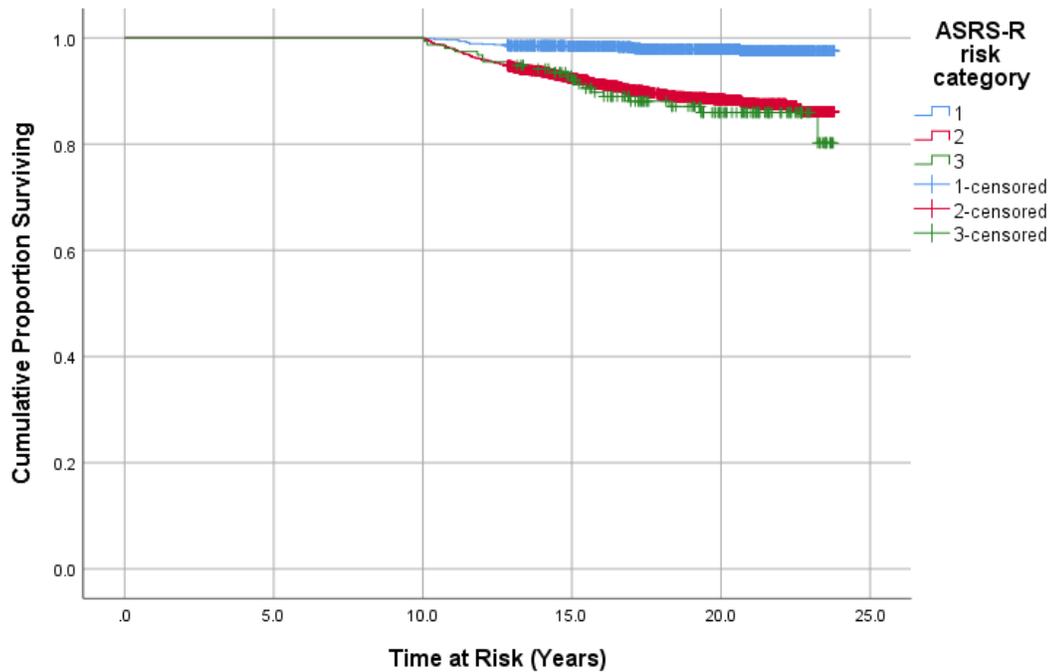


Figure 16. Kaplan-Meier survival plot showing cumulative any recidivism failure rates from 10 years any offence-free as a function of ASRS-R risk category.

Additionally, the initial 10-year recidivism rate for the moderate-risk offenders was 51.09% from time-at-release, which dropped to 20.64% for offenders who had been offence-free for 5 years, and 7.49% for offenders who had been offence-free for 10 years. The 10-year recidivism rate for moderate-risk offenders who had been offence-free for 10 years was less than the expected 10-year rate of low-risk offenders from time-at-release (9.20%).

The low-risk group showed much less change in overall recidivism rates over time offence-free than the high-risk or moderate-risk groups, however, the changes were more substantial than for any individual type of recidivism (i.e. sexual), especially for 10-year recidivism rates over time. The initial 5-year recidivism rate for the low-risk offenders was 5.60% from time-at-release, which dropped to 3.81% after 5 years offence-free, dropped further

to 1.57% after 10 years offence-free, and dropped again to 0.45% for those who remained free of any new offence for 15 years. For 10-year overall recidivism, the low-risk offenders had initial rates of 9.20% at time of release, which dropped to 5.31% for offenders who had remained offence-free for 5 years, and 1.93% for offenders who had remained offence-free for 10 years.

Table 25 compares the observed total (any type of offence) recidivism rate for the initial 5 years post-release with the total recidivism rates for years 6 to 10, years 11 to 15, and years 16 to 20 post-release. The comparisons are reported as risk ratios, with the rates for 6-10 years, 11-15 years, and 16-20 years being divided by the rates for the first 5 years following release. All risk ratios were calculated using life table survival analyses. There were significant differences in the initial 5-year total recidivism rates for all of the ASRS-R risk categories, all of the “age at release” categories, and all of the “victim gender” categories. For the low-risk group, the initial 5-year total recidivism rate was 5.60%, with a rate of 42.97% for the medium-risk group, and an initial 5-year general recidivism rate of 78.31% for the high-risk group. For offenders aged between 15 and 29 at the time of their release, the initial 5-year total recidivism rate was 63.77%, with a rate of 39.75% for offenders aged between 30 and 49 at the time of their release, and a rate of 10.12% for offenders aged 50 and above at the time of their release. For offenders with male-only victims, the initial 5-year total recidivism rate was 6.34%, with a rate of 40.18% for offenders with female-only victims, and a rate of 26.97% for offenders with both male and female victims.

Almost all of the “victim age” categories also demonstrated significantly different initial 5-year rates of total recidivism. There was only one comparison that did not reach significance (at the 95% confidence interval cut-off); offenders with child-only victims and offenders with

both adult and child victims. Offenders with child-only victims had a 5-year violent recidivism rate of 31.86%, with a rate of 55.31% for offenders with adult-only victims, and a rate of 28.33% for offenders with both child and adult victims.

However, even with the significant differences in initial recidivism risk for almost all of the subgroups, the pattern of a stable and consistent time-free effect for total recidivism across the subgroups mirrored the patterns displayed for each individual type of recidivism. The risk ratios comparing the total recidivism rates for years 6 to 10 with the initial recidivism risk in the first five years following release were tightly clustered between 0.25 and 0.47, with a median of 0.33. There was one subgroup that remained an outlier; the low-risk offenders, with a risk ratio of 0.68. The risk ratios comparing the rates for years 11 to 15 with the first five years post-release were tightly clustered between 0.09 and 0.17, with a median risk ratio of 0.16. There were a few outlier subgroups for years 11 to 15; the low-risk group (risk ratio of 0.28) and the offenders with male-only victims (risk ratio of 0.30). The risk ratios comparing years 16 to 20 with years 1 to 5 following release were clustered between 0.04 and 0.13. The median risk ratio was 0.08. For the total sample, the risk ratio for years 6 to 10 was 0.28, with a risk ratio of 0.13 for years 11 to 15, and a risk ratio of 0.06 for years 16 to 20 post-release.

The non-contact offenders displayed another unusual profile for total recidivism, with an initial 5-year recidivism rate of 75.65%. Only three other subgroups shared 5-year rates that were above 45%; high-risk offenders (78.31%), offenders who were between 15 and 29 years of age at the time of their release (63.77%), and offenders with only adult victims (55.31%). The risk ratio comparing 6 to 10 years post-release with years 1 to 5 post-release for the non-contact group was 0.19, but can only be included tentatively as by the end of year 10 there were only 48 offenders left (just under the usable cut-off of 50 offenders). Therefore, the group was also far too small to

include in the calculations for years 11 to 15, or years 16 to 20, as there were only 34 offenders left in the group at the conclusion of year 15 (and only 16 left at the end of year 20). During the total follow-up period, the overall total recidivism rate for the sample was 51.79%, with some subgroups producing significantly higher rates of total recidivism; the high-risk offenders (85.71%), the offenders between 15 and 29 years of age at their time of release (74.14%), offenders with only adult victims (65.36%), and offenders with only non-contact offences (81.74%).

In summary, a number of key results demonstrated the substantial reduction in recidivism rates over time for offenders who remained offence-free after their release. The 5-year recidivism rates for low-, medium-, and high-risk offenders are displayed for sexual recidivism in Figure 17, and for any recidivism (sexual, violent, or general) in Figure 18.

For both sexual and any recidivism, the reduction in 5-year rates of reoffending was most apparent for the high-risk offenders, with the moderate-risk offenders also displaying measurable reductions in recidivism compared to the low-risk offenders, who maintained consistently low rates of recidivism throughout.

The significant time offence-free effect for high-risk offenders was observed for sexual, violent, and general recidivism, as well as for any recidivism, as seen in Figure 19, with the risk of recidivism displayed after 5 years offence-free being 31-43% of the initial recidivism risk at the time of release across all types of recidivism, and only 8-15% of the initial recidivism risk for offenders who had remained offence-free in the community for 15 years. The respective observed rates of 5-year sexual, violent, general, and any recidivism for the high-risk offenders over time are shown in Figure 20.

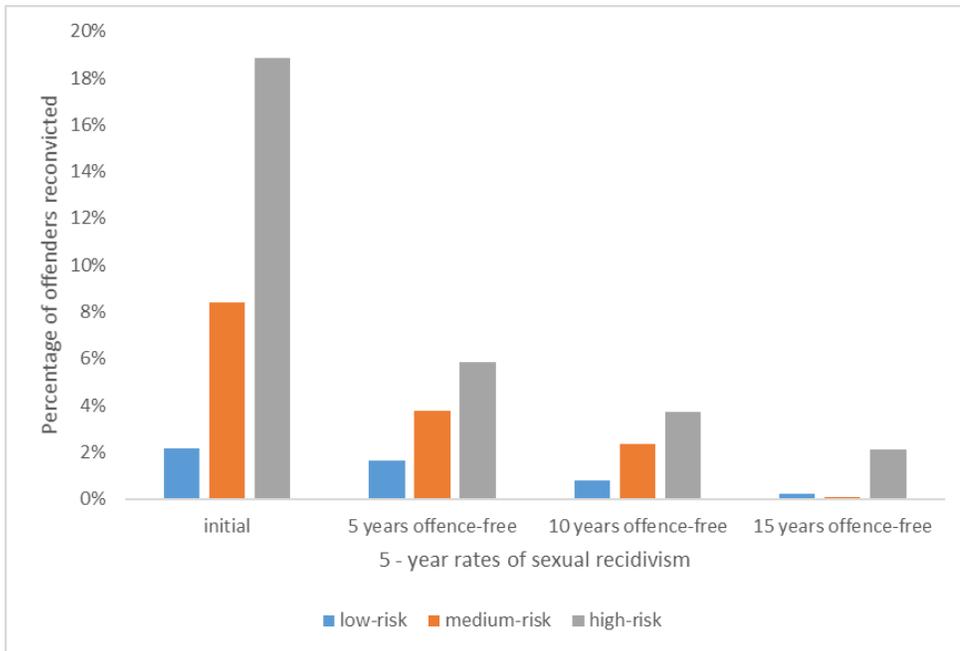


Figure 17. Sexual recidivism rates at the time of release and after 5 years, 10 years, and 15 years offence-free for low-, medium-, and high-risk offenders.

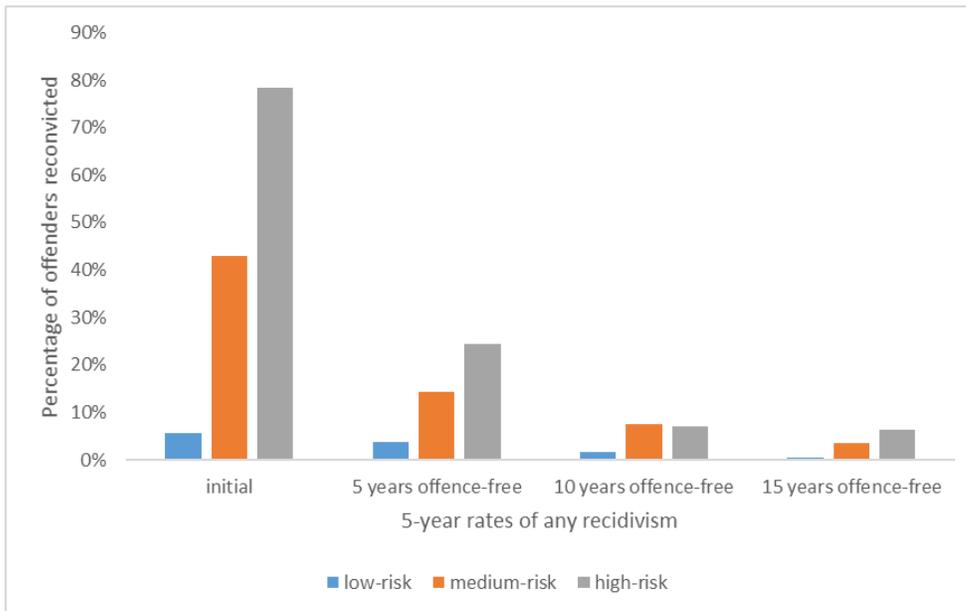


Figure 18. Sexual recidivism rates at the time of release and after 5 years, 10 years, and 15 years offence-free for low-, medium-, and high-risk offenders.

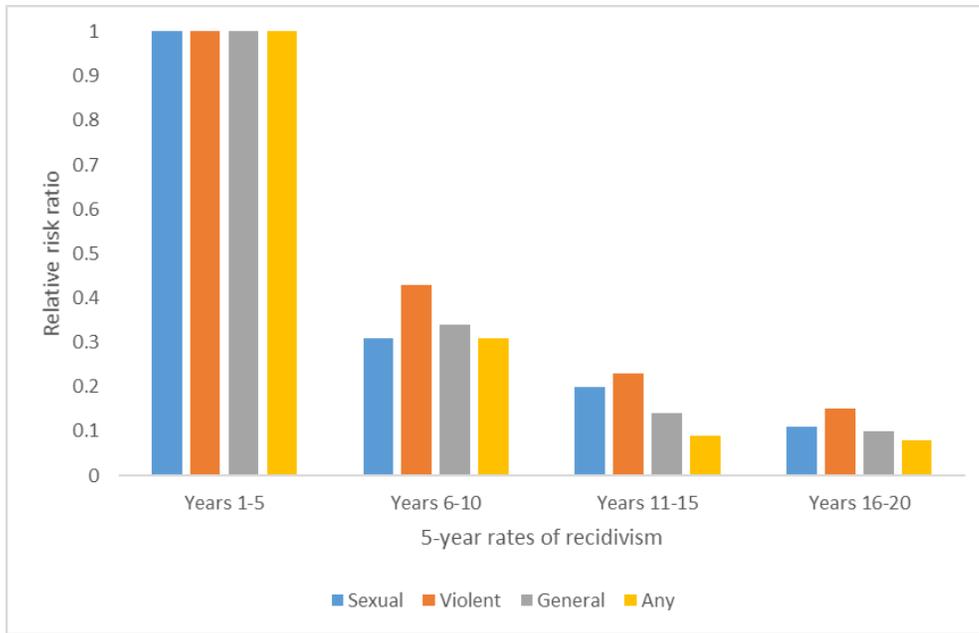


Figure 19. Relative 5-year risk ratios for sexual, violent, general, and any recidivism for years 6-10, 11-15, and 16-20 offence-free in the community. Note: Years 1-5 have a risk ratio of 1 to indicate the starting point for each recidivism category.

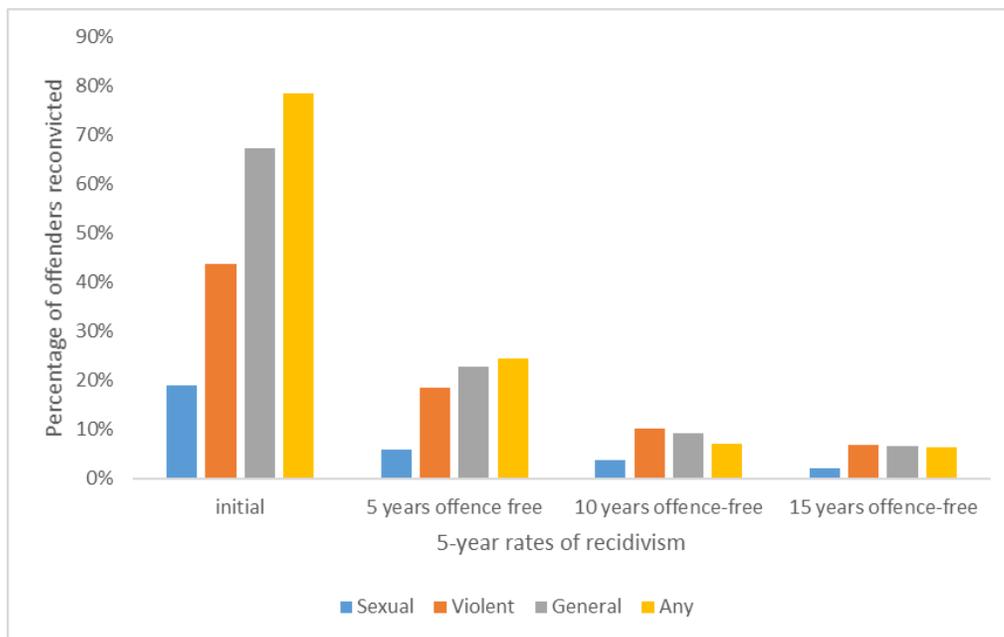


Figure 20. 5-year sexual, violent, general, and any recidivism rates for high risk offenders at the time of their release and after remaining 5, 10, and 15 years offence-free in the community.

For high-risk offenders, the most important 5-year recidivism rate reductions are for sexual recidivism and any recidivism. The rate of 5-year sexual recidivism declined from 18.84% at the time of release, to 5.87% after 5 years offence-free, and to only 2.11% for those who remained offence-free for 15 years. For any recidivism, the initial 5-year recidivism rate was 78.31%, which declined to 24.39% after 5 years offence-free, and 6.30% after 15 years offence-free. Overall, the results indicate that high-risk sexual offenders do not remain high-risk for any once they have remained offence-free in the community for an extended period of time (at least 5 years). The data confirm that desistance occurs for sexual offenders, and not only for sexual recidivism but offending in general.

Table 22. Relative Reduction in Sexual Recidivism based on comparing the rate during the first 5 years in the community with the 5-year rates starting after 5, 10, and 15 offence-free years in the community.

	Sample Size at Start of Follow up	Initial 5-year Recidivism Rate (Years 1-5) % (n)		Relative Rate After 5 Years Offence-Free (Years 6-10) Risk Ratio (n)		Relative Rate After 10 Years Offence-Free (Years 11-15) Risk Ratio (n)		Relative Rate After 15 Years Offence-Free (Years 16-20) Risk Ratio (n)	
Complete Sample	5895	8.82 (9.5,8.1)	(5375)	0.41 (0.48,0.35)	(5181)	0.25 (0.30,0.20)	(4202)	0.09 (0.13,0.06)	(2025)
Low (ASRS-R scores of -3,-2,-1)	1196	2.17 (3.0,1.3)	(1170)	0.75 (1.35,0.42)	(1151)	0.36 (0.76,0.17)	(944)	0.10 (0.41,0.02)	(420)
Medium (ASRS-R scores of 0,1,2,3)	3754	8.42 (9.3,7.5)	(3438)	0.45 (0.55,0.37)	(3308)	0.28 (0.35,0.22)	(2641)	0.09 (0.14,0.06)	(1201)
High (ASRS-R scores of 4+)	945	18.84 (21.3,16.3)	(767)	0.31 (0.42,0.23)	(722)	0.20 (0.30,0.14)	(617)	0.11 (0.19,0.06)	(404)
Age at Release: 15-29	1783	11.50 (13.0,10.0)	(1578)	0.44 (0.56,0.34)	(1498)	0.30 (0.40,0.22)	(1213)	0.12 (0.20,0.07)	(658)
Age at Release: 30-49	2926	9.02 (10.1,8.0)	(2662)	0.40 (0.50,0.32)	(2565)	0.22 (0.30,0.16)	(2089)	0.07 (0.12,0.04)	(1015)
Age at Release: 50+	1186	4.30 (5.5,3.1)	(1135)	0.35 (0.60,0.20)	(1118)	0.25 (0.47,0.13)	(900)	0.10 (0.27,0.04)	(352)
Victim Age: Child only	2966	6.34 (7.2,5.5)	(2778)	0.47 (0.60,0.36)	(2695)	0.30 (0.41,0.22)	(2175)	0.13 (0.21,0.08)	(929)
Victim Age: Adult only	1960	9.54 (10.8,8.2)	(1779)	0.43 (0.56,0.33)	(1701)	0.24 (0.34,0.17)	(1385)	0.07 (0.14,0.04)	(782)
Victim Age: Child and Adult	713	11.22 (13.5,8.9)	(633)	0.42 (0.63,0.28)	(603)	0.25 (0.42,0.15)	(498)	0.09 (0.22,0.04)	(253)

	Sample Size at Start of Follow up	Initial 5-year Recidivism Rate (Years 1-5) % (n)		Relative Rate After 5 Years Offence-Free (Years 6-10) Risk Ratio (n)		Relative Rate After 10 Years Offence-Free (Years 11-15) Risk Ratio (n)		Relative Rate After 15 Years Offence-Free (Years 16-20) Risk Ratio (n)	
Victim Gender: Male only	486	12.96 (15.9,10.0)	(423)	0.29 (0.49,0.17)	(407)	0.23 (0.42,0.13)	(324)	0.14 (0.32,0.06)	(148)
Victim Gender: Female only	4360	7.00 (7.8,6.2)	(4055)	0.50 (0.61,0.41)	(3913)	0.30 (0.38,0.24)	(3176)	0.10 (0.15,0.07)	(1493)
Victim Gender: Male & Female	267	16.48 (20.9,12.0)	(223)	0.41 (0.72,0.23)	(208)	0.19 (0.41,0.09)	(175)	0.03 (0.21,0.00)	(70)
Non-contact offences only	230	27.39 (33.2,21.6)	(167)	0.13 (0.29,0.06)	(161)	0.09 (0.24,0.03)	(125)	0.09 (0.28,0.03)	(62)

Table 23. Relative Reduction in Violent Recidivism based on comparing the rate during the first 5 years in the community with the 5-year rates starting after 5, 10, and 15 offence-free years in the community.

	Sample Size at Start of Follow up	Initial 5-year Recidivism Rate (Years 1-5)		Relative Rate After 5 Years Offence-Free (Years 6-10)		Relative Rate After 10 Years Offence-Free (Years 11-15)		Relative Rate After 15 Years Offence-Free (Years 16-20)	
		%	(n)	Risk Ratio	(n)	Risk Ratio	(n)	Risk Ratio	(n)
Complete Sample	5895	17.05 (18.0,16.1)	(4790)	0.46 (0.51,0.41)	(4418)	0.26 (0.30,0.22)	(3528)	0.12 (0.15,0.09)	(1639)
Low (ASRS-R scores of -3,-2,-1)	1196	1.17 (1.8,0.6)	(1182)	1.01 (2.11,0.48)	(1168)	0.43 (1.14,0.17)	(963)	0.18 (0.79,0.04)	(430)
Medium (ASRS-R scores of 0,1,2,3)	3754	18.09 (19.3,16.9)	(3075)	0.47 (0.54,0.41)	(2816)	0.29 (0.34,0.24)	(2208)	0.11 (0.15,0.08)	(1011)
High (ASRS-R scores of 4+)	945	43.60 (46.8,40.4)	(533)	0.43 (0.52,0.36)	(434)	0.23 (0.31,0.17)	(357)	0.15 (0.22,0.10)	(198)
Age at Release: 15-29	1783	35.05 (37.3,32.8)	(1158)	0.42 (0.49,0.36)	(987)	0.26 (0.32,0.21)	(767)	0.14 (0.19,0.10)	(374)
Age at Release: 30-49	2926	15.69 (17.0,14.4)	(2467)	0.51 (0.60,0.44)	(2271)	0.29 (0.36,0.24)	(1818)	0.12 (0.17,0.08)	(885)
Age at Release: 50+	1186	1.77 (2.5,1.0)	(1165)	0.24 (0.63,0.09)	(1160)	0.24 (0.63,0.09)	(943)	0 (0.22,0.10)	(380)
Victim Age: Child only	2966	12.81 (14.0,11.6)	(2586)	0.46 (0.55,0.38)	(2435)	0.27 (0.34,0.21)	(1963)	0.12 (0.17,0.08)	(825)
Victim Age: Adult only	1960	29.64 (31.7,27.6)	(1379)	0.41 (0.48,0.35)	(1212)	0.23 (0.29,0.19)	(940)	0.10 (0.14,0.07)	(504)
Victim Age: Child and Adult	713	9.96 (12.2,7.8)	(642)	0.41 (0.63,0.27)	(616)	0.26 (0.44,0.15)	(511)	0.12 (0.27,0.05)	(263)
Victim Gender: Male only	486	9.26 (11.8,6.7)	(441)	0.47 (0.79,0.28)	(422)	0.15 (0.35,0.06)	(347)	0.06 (0.24,0.01)	(167)

	Sample Size at Start of Follow up	Initial 5-year Recidivism Rate (Years 1-5) % (n)		Relative Rate After 5 Years Offence-Free (Years 6-10) Risk Ratio (n)		Relative Rate After 10 Years Offence-Free (Years 11-15) Risk Ratio (n)		Relative Rate After 15 Years Offence-Free (Years 16-20) Risk Ratio (n)	
Victim Gender: Female only	4360	18.88 (20.0,17.7)	(3537)	0.43 (0.49,0.38)	(3248)	0.25 (0.30,0.21)	(2596)	0.12 (0.16,0.09)	(1164)
Victim Gender: Male & Female	267	9.74 (13.3,6.2)	(241)	0.04 (0.29,0.01)	(240)	0.13 (0.42,0.04)	(207)	0	(88)
Non-contact offences only	230	29.57 (35.5,23.7)	(162)	0.46 (0.71,0.30)	(140)	0.29 (0.51,0.16)	(140)	0.24 (0.49,0.12)	(46)

Table 24. Relative Reduction in General Recidivism based on comparing the rate during the first 5 years in the community with the 5-year rates starting after 5, 10, and 15 offence-free years in the community.

	Sample Size at Start of Follow up	Initial 5-year Recidivism Rate (Years 1-5)		Relative Rate After 5 Years Offence-Free (Years 6-10)		Relative Rate After 10 Years Offence-Free (Years 11-15)		Relative Rate After 15 Years Offence-Free (Years 16-20)	
		%	(n)	Risk Ratio	(n)	Risk Ratio	(n)	Risk Ratio	(n)
Complete Sample	5895	33.47 (34.7,32.3)	(3922)	0.27 (0.30,0.25)	(3565)	0.13 (0.15,0.11)	(2851)	0.06 (0.08,0.05)	(1289)
Low (ASRS-R scores of -3,-2,-1)	1196	2.59 (3.5,1.7)	(1165)	0.66 (1.15,0.38)	(1145)	0.27 (0.58,0.12)	(943)	0.08 (0.33,0.02)	(417)
Medium (ASRS-R scores of 0,1,2,3)	3754	34.79 (36.3,33.3)	(2448)	0.31 (0.35,0.27)	(2181)	0.16 (0.19,0.13)	(1713)	0.08 (0.11,0.06)	(764)
High (ASRS-R scores of 4+)	945	67.30 (70.3,64.3)	(309)	0.34 (0.42,0.28)	(239)	0.14 (0.21,0.09)	(195)	0.10 (0.17,0.06)	(108)
Age at Release: 15-29	1783	56.03 (58.3,53.7)	(784)	0.26 (0.31,0.22)	(672)	0.15 (0.19,0.12)	(525)	0.08 (0.12,0.06)	(250)
Age at Release: 30-49	2926	30.90 (32.6,29.2)	(2022)	0.35 (0.40,0.31)	(1802)	0.08 (0.10,0.07)	(1434)	0.08 (0.11,0.06)	(678)
Age at Release: 50+	1186	5.90 (7.2,4.6)	(1116)	0.37 (0.58,0.24)	(1091)	0.03 (0.12,0.01)	(892)	0.02 (0.14,0.00)	(361)
Victim Age: Child only	2966	25.69 (27.3,24.1)	(2204)	0.28 (0.33,0.24)	(2046)	0.15 (0.19,0.12)	(1650)	0.08 (0.11,0.06)	(677)
Victim Age: Adult only	1960	46.84 (49.0,44.6)	(1042)	0.29 (0.34,0.25)	(899)	0.13 (0.17,0.10)	(693)	0.05 (0.08,0.03)	(368)
Victim Age: Child and Adult	713	17.67 (20.5,14.9)	(587)	0.39 (0.55,0.28)	(547)	0.14 (0.24,0.08)	(458)	0.11 (0.21,0.06)	(225)
Victim Gender: Male only	486	21.60 (25.3,17.9)	(381)	0.22 (0.36,0.14)	(363)	0.06 (0.15,0.02)	(294)	0.06 (0.16,0.02)	(143)

	Sample Size at Start of Follow up	Initial 5-year Recidivism Rate (Years 1-5) % (n)		Relative Rate After 5 Years Offence-Free (Years 6-10) Risk Ratio (n)		Relative Rate After 10 Years Offence-Free (Years 11-15) Risk Ratio (n)		Relative Rate After 15 Years Offence-Free (Years 16-20) Risk Ratio (n)	
Victim Gender: Female only	4360	33.35 (34.7,32.0)	(2906)	0.28 (0.32,0.25)	(2635)	0.14 (0.17,0.12)	(2107)	0.07 (0.09,0.05)	(916)
Victim Gender: Male & Female	267	11.99 (15.9,8.1)	(235)	0.67 (1.15,0.40)	(216)	0.27 (0.60,0.12)	(185)	0.05 (0.36,0.01)	(76)
Non-contact offences only	230	65.65 (71.8,59.5)	(79)	0.25 (0.41,0.15)	(66)	0.12 (0.23,0.02)	(43)	0.11 (0.38,0.07)	(19)

Table 25. Relative Reduction in Any Recidivism based on comparing the rate during the first 5 years in the community with the 5-year rates starting after 5, 10, and 15 offence-free years in the community.

	Sample Size at Start of Follow up	Initial 5-year Recidivism Rate (Years 1-5)		Relative Rate After 5 Years Offence-Free (Years 6-10)		Relative Rate After 10 Years Offence-Free (Years 11-15)		Relative Rate After 15 Years Offence-Free (Years 16-20)	
		%	(n)	Risk Ratio	(n)	Risk Ratio	(n)	Risk Ratio	(n)
Complete Sample	5895	41.02 (42.3,39.8)	(3475)	0.28 (0.31,0.25)	(3077)	0.13 (0.15,0.11)	(2427)	0.06 (0.08,0.05)	(1063)
Low (ASRS-R scores of -3,-2,-1)	1196	5.60 (6.9,4.3)	(1129)	0.68 (0.99,0.47)	(1086)	0.28 (0.47,0.17)	(888)	0.08 (0.22,0.03)	(388)
Medium (ASRS-R scores of 0,1,2,3)	3754	42.97 (44.6,41.4)	(2141)	0.33 (0.37,0.30)	(1836)	0.17 (0.20,0.14)	(1412)	0.08 (0.10,0.06)	(608)
High (ASRS-R scores of 4+)	945	78.31 (80.9,75.7)	(205)	0.31 (0.39,0.25)	(155)	0.09 (0.16,0.05)	(127)	0.08 (0.15,0.04)	(67)
Age at Release: 15-29	1783	63.77 (66.0,61.5)	(646)	0.25 (0.30,0.21)	(541)	0.16 (0.21,0.12)	(410)	0.08 (0.12,0.05)	(193)
Age at Release: 30-49	2926	39.75 (41.5,38.0)	(1763)	0.36 (0.41,0.32)	(1509)	0.16 (0.19,0.13)	(1187)	0.08 (0.11,0.06)	(544)
Age at Release: 50+	1186	10.12 (11.8,8.4)	(1066)	0.36 (0.51,0.25)	(1027)	0.13 (0.22,0.08)	(830)	0.04 (0.12,0.01)	(326)
Victim Age: Child only	2966	31.86 (33.5,30.2)	(2021)	0.31 (0.36,0.30)	(1822)	0.16 (0.20,0.13)	(1455)	0.08 (0.11,0.06)	(571)
Victim Age: Adult only	1960	55.31 (57.5,53.1)	(876)	0.27 (0.32,0.23)	(745)	0.11 (0.15,0.08)	(562)	0.05 (0.08,0.03)	(301)
Victim Age: Child and Adult	713	28.33 (31.6,25.0)	(511)	0.38 (0.50,0.29)	(456)	0.16 (0.25,0.10)	(371)	0.06 (0.13,0.03)	(175)
Victim Gender: Male only	486	6.34 (8.5,4.2)	(2778)	0.47 (0.37,0.17)	(2695)	0.30 (0.17,0.05)	(2175)	0.13 (0.12,0.01)	(929)

	Sample Size at Start of Follow up	Initial 5-year Recidivism Rate (Years 1-5) % (n)		Relative Rate After 5 Years Offence-Free (Years 6-10) Risk Ratio (n)		Relative Rate After 10 Years Offence-Free (Years 11-15) Risk Ratio (n)		Relative Rate After 15 Years Offence-Free (Years 16-20) Risk Ratio (n)	
Victim Gender: Female only	4360	40.18 (41.6,38.7)	(2608)	0.29 (0.32,0.26)	(2304)	0.14 (0.17,0.12)	(1819)	0.07 (0.09,0.05)	(767)
Victim Gender: Male & Female	267	26.97 (32.3,21.6)	(195)	0.44 (0.68,0.29)	(172)	0.15 (0.32,0.07)	(146)	0.05 (0.20,0.01)	(55)
Non-contact offences only	230	75.65 (81.2,70.1)	(56)	0.19 (0.36,0.10)	(48)	0.06 (0.23,0.02)	(34)	0.16 (0.38,0.07)	(16)

2. Empirical Discussion

The present study investigated the stability of static risk level over an extended period of time offence-free in the community for high-risk sexual offenders, in terms of whether any changes in the observed rates of sexual, violent, and general recidivism had occurred. Additionally, other potential moderators such as victim age, victim gender, and age at release were also examined to determine whether they had any impact on the time offence-free effect. The primary goals of the study were to both replicate and extend the findings from Hanson et. al. (2014) regarding whether high-risk sexual offenders remained high-risk over time spent offence-free in the community. The current study found that high-risk sexual offenders were desisting at an increasing rate from all types of criminal activity once they had been offence-free in the community for 5 years. Moreover, none of the moderators investigated had any significant effect on the time offence-free effect; the rates of desistance were similar across every moderator level (with the exception of the low-risk offender group, who remained at a very low rate of recidivism across each time period).

Overall, the present results are consistent with Hanson et. al.'s (2014) original study. For Hanson et. al.'s (2014) sample, as well as the current sample, the risk of sexual recidivism for those classified as high-risk decreased by over 60% once the offenders had been sexual offence-free in the community for 5 years, and continued to decrease by approximately another 50% in every consecutive 5-year period from that point onwards. Our initial decrease in sexual recidivism rates for the high-risk offenders was 69% from the recidivism rates observed within the initial 5 years from the time at release every 5 years spent offence-free in the community, compared to the 61% decrease obtained by Hanson et. al. (2014). Our results identified that high-risk sexual offenders displayed a 5-year risk of sexual offending after 10-years offence free that

was identical to the 5-year initial risk of sexual offending for the low-risk sexual offenders. This result was also present for Hanson et. al. (2014).

Additionally, although there were differences in the initial 5-year rates of sexual recidivism between potential moderators such as age at release, victim age, and victim gender, we found that the pattern of desistance was unaffected by the majority of the potential moderators, with the exception of those who had extremely low base rates of offending to begin with (i.e. the low-risk group). This finding, again, agrees with the results obtained by Hanson et. al. (2014).

Considered altogether, these are important findings, as they indicate that sexual desistance patterns observed in a large aggregated sample, consisting of 7,248 sexual offenders from a variety of overseas countries (and 492 sexual offenders from New Zealand) are also observed in a nationwide cohort of New Zealand sexual offenders. Regardless of country of origin, the recidivism risk for high-risk sexual offenders, for sexual offenders with varying victim gender and age preferences, and of varying ages at the time of their release, decreased at a rate of 50% or more for every 5 years that were spent sexual offence-free in the community. It should be noted that although country of origin for the offender samples was one of the potential moderators examined initially by Hanson et. al. (2014), the countries were split into 3 groups; United States, Canada, and Other, with New Zealand being included in the Other category, along with samples from the United Kingdom, Sweden, Denmark, Austria, and Germany.

These findings have important implications for the extended supervision of high-risk sexual offenders, and for specific groups of sexual offenders such as child sex offenders, who are often subject to more release conditions than adult sex offenders. Although the initial 5-year rates of sexual recidivism were often significantly different between groups, these differences did not

translate to differences in rates of desistance once those offenders had been sexual offence-free for 5 years, weakening the case for extended supervision and intensive monitoring conditions being imposed long-term for all sexual offenders who are identified as high-risk at the time of their release. As stated by Hanson et. al. (2014), these findings imply that offence history is a valid but time-dependent indicator of an individual's propensity to reoffend. At the time of their release, static risk level (as identified by offence history variables), may be the most appropriate measure to identify the likelihood of sexual recidivism. However, once given the opportunity to commit further offences in the community, those who have sexually reoffended should be reclassified into higher risk groups, and those who have not reoffended sexually should be reclassified into lower risk groups. This sorting process, if completed every 5 years from the time of release, could result in a drastic shift from the initial risk classification and associated estimate of recidivism for sexual offenders (R. Karl Hanson et al., 2014).

Extending the results of Hanson et. al. (2014) to include the violent and general desistance rates for the current sample generated significant results, with very similar patterns observed to those for sexual desistance. For high-risk sexual offenders, violent offending initially dropped at a slightly slower rate than sexual or general offending, but had still decreased to 60% of the initial rate of recidivism after the offenders had remained 5-years offence-free in the community. The respective relative risk for general recidivism had decreased to 66% of the initial recidivism rates for the high-risk offenders. These results are still important to consider for sexual offenders because the initial violent and general recidivism rates for the high-risk sexual offenders in the sample were substantially higher than the initial sexual recidivism rates, a finding that has been established previously in the literature (Lussier, 2005; Lussier & Cale, 2013; Moore, 2012). Furthermore, the victim impact of violent offending is significant, and some

violent offences may still be sexually motivated (R. Karl Hanson, 2000; Quinsey et al., 1993). Additionally, it has been recognised that it is not uncommon for sexual crimes to be plea-bargained down to a violent or general charge (Quinsey et al., 1993). Therefore, demonstrating that the risk of violent and general offending for high-risk sexual offenders also decreases to lower rates than those initially displayed by the moderate-risk sexual offenders after 10 years violent or general offence-free in the community, adds significant value to the findings and implications of the current study.

Increasing the follow up period in the current study to 20 years allowed for the inclusion of a final 5-year recidivism rate for those who had been sexual offence-free in the community for 15 years. This inclusion was able to identify that the pattern of desistance observed after 5 and 10 years offence-free continued; with the rate of recidivism observed after 15 years sexual offence-free halving again from the recidivism rate observed after 10 years sexual offence-free. The 5-year recidivism rate for high-risk offenders who had been 15 years sexual offence-free in the community (2.11%) had dropped to the established rate of sexual recidivism for non-sexual offenders (1-3%; Duwe, 2012; Wormith, Hogg, & Guzzo, 2012). Hanson et. al. (2014) had noted that after 10 years sexual offence-free in the community, although the 5-year rate of sexual recidivism had dropped significantly to a level that matched the 5-year rate for the low-risk sexual offenders, the rate was not quite low enough to reach the expected rate of sexual recidivism for non-sexual offenders. The current findings demonstrate that high-risk sexual offenders are able to reach a rate of recidivism that does match that of non-sexual offenders if they have abstained from sexually reoffending for a further 5 years. This result has considerable implications for the justification of mandatory lifetime sex offender registers and community notification policies, which already have a distinct lack of empirical support in terms of their

impact on the rates of sexual recidivism, and yet are still imposed extensively in multiple countries (Bersot & Arrigo, 2015; Göbbels et al., 2012; Kruttschnitt et al., 2000; Willis et al., 2010). There are now almost one million people on the publicly-accessible sex offender registry in the United States (Lussier et al., 2016).

The desistance results for any type of offending, which assessed the survival rates for sexual, violent, and general offences combined, suggest that the majority of high-risk offenders were desisting from all types of criminal behaviour and could therefore be considered complete desisters; as opposed to merely desisting from one type of offending behaviour, while continuing others. Relative to their initial 5-year risk of recidivism, the high-risk offenders displayed a 69% decrease in the risk of recidivism for any offence after 5-years spent completely offence-free in the community. High-risk sexual offenders displayed a 5-year risk of any offending after 10-years offence free that was identical to the 5-year initial risk of any offending for the low-risk sexual offenders. This finding further strengthens the aforementioned implications for suitable offender management and supervision requirements for high-risk offenders that have abstained from offending while having the opportunity to do so, as well as addressing one of the main limitations Hanson et. al. (2014) had previously identified with their study (i.e., having access to recidivism information for sexual offending only).

Although it could be argued in other countries that the desistance patterns observed may be due to stringent formal controls such as intensive monitoring, sex offender registers, and community notification policies, none of these controls were present at the time these offenders were released from prison in New Zealand. The intensive monitoring of high-risk sexual offenders did not come into effect in New Zealand until 2005; years after the most recently-released began their time back in the community, therefore none of the offenders in the current

sample would have been subject to intensive monitoring, and would likely all have been released with standard parole conditions. Furthermore, the Child Sex Offender (CSO) Register was only established in New Zealand in October 2016, again being unable to affect the individuals in the current sample. Additionally, there is still no community notification policy in New Zealand; the CSO Register is only able to be accessed by personnel from the New Zealand Police and Department of Corrections.

One unusual result came from the individuals who had been convicted for non-contact offences only. Unfortunately, no specific conclusions regarding the observed patterns of desistance can be drawn due to the small offender cohort, but the high recidivism rates for both sexual, violent and general recidivism displayed were alarming; they displayed initial recidivism rates for any offending that mirrored those of the high-risk offenders (75.65%). Furthermore, they were the only group not to qualify for each of the 5-, 10-, and 15-year any offence-free analyses, as a minimum sample size of 50 offenders at the end of each 5-year risk period was required, and only 48 non-contact offenders had survived to 5 years offence-free. Moreover, in terms of sexual recidivism, the non-contact offenders had higher initial 5-year rates of recidivism than any of the other groups, including the high-risk offenders; in the first 5 years after their release, 27.39% of the non-contact offenders had been convicted of another sexual offence, compared to 18.84% of the high-risk offenders. The literature on non-contact sexual offenders is relatively limited, and has tended to focus on online offenders specifically (Middleton & Mandeville-norden, 2009; Surjadi, Bullens, van Horn, & Bogaerts, 2010; Tomak, 2009), which is pertinent in the current internet-driven age, however, the offenders in the current study were very unlikely to have been convicted of online offences due to the fact that they would have had to commit their index offences before 2002, when the internet was in its relative infancy. The

majority of non-contact index offences in the current study involved some type of indecent exposure. Further research into the profiles and potential variety of non-contact offenders would be worthwhile, given that the findings from the current study identify them as posing a potentially higher risk of sexually reoffending than the majority of other sexual offenders.

One major limitation of the current study, as with Hanson et. al.'s (2014) study, is the uncertainty over why so many individuals who are deemed to be high-risk sexual offenders do not go on to reoffend. It could be that some of the offenders were not actually ever a high risk to begin with, and may have been classified incorrectly by the initial risk assessments, or it could be that many of the individuals abstaining from crime have undergone substantial personal change of some kind, as individual changes such as cognitive transformation have been previously highlighted as a mechanism for successful desistance (Shadd Maruna & Roy, 2007; Paternoster & Bushway, 2009). As the current research does not shed any light on what changes may have occurred, or why and how they happened, further research is needed to determine those factors.

In summary, the results of the present study have both replicated and extended the original findings from Hanson et. al. (2014) in a country that does not adhere to the same restrictive and penal offender management of high-risk sexual offenders that is observed in other Western countries such as the United States; demonstrating that desistance from both sexual, violent, and general offending can occur for offenders with a history of sexual offending in the absence of such policy decisions. The current study confirms that static risk is a valid but time-dependent predictor of sexual recidivism for all sexual offenders, including those at the highest risk of re-offending, which has implications for how static risk assessment is applied in long-term offender management, and indicates that adjustment of initial static risk assessment outcomes may be needed when applying to continue ESOs or PPOs for offenders deemed to be

high-risk, or when implementing any other forms of intensive monitoring in the community.

Further research into the mechanisms of desistance for high-risk sexual offenders is needed to understand the reasons for the desistance patterns observed in the current study. Increasing the understanding of how and why desistance occurs for sexual offenders in New Zealand is imperative for any attempt to increase the number of sexual offenders desisting from crime, and the speed at which they do so.

General Discussion

The research in this thesis investigates both the current efficacy and long-term utility of static risk assessment for sexual offenders in New Zealand. In this final section, an overview of the primary results of the two preceding empirical studies will be presented, followed by a discussion of the overarching implications of the results when considered as one body of work. Lastly, general limitations and suitable next steps for further development of the current findings will be proposed.

Overview of the Empirical Results of this Dissertation

The initial purpose of Study 1 was to attempt to remove some of the individual variables in the ASRS-R that may not be significantly related to sexual recidivism, while maintaining comparable predictive accuracy. The ASRS-R is the most commonly-used static risk assessment measure in New Zealand, and has multiple benefits as a risk assessment measure for New Zealand sexual offenders: although originally derived from the Static-99, it was validated using local data, and as it can be computer-scored from offender files that are all held in one integrated database by the New Zealand Department of Corrections, the ASRS-R makes it very efficient for conducting static risk assessments with sexual offenders. However, it has been identified that some of the current ASRS-R items may not be significantly correlated with sexual recidivism (Moore, 2012). This finding has also been previously identified with individual items of the Static-99 (Sjöstedt & Långström, 2001), which is pertinent due to the fact that all of the items included in the ASRS-R were originally taken from the Static-99.

The results of Study 1 were able to determine that it was possible to provide comparable predictive accuracy to the ASRS-R, while utilising fewer variables. 3 of the 4 variables identified

as being the most predictive of sexual recidivism in the current study were comparable to the initial items used in the ASRS-R; previous sexual offences, prior non-contact offences, and age at release. The final variable, prior male victims aged between 12 and 15 years, was a modification of the ASRS item 'male victims,' which was not found to be significantly predictive of sexual recidivism in its original form. Items relating to prior sentencing dates, prior violence, and index violence, were also removed from the new model. When the model was converted into a measure that could be computer-scored the same way as the ASRS-R, age at release was translated in to an age weighting (the same age weighting used in the ASRS-R), the prior sex offences item was scored the same way as the ASRS-R (0-3), and the items relating to prior male victims aged between 12 and 15 years, and prior non-contact offences, were scored from 0-1. The computer-scored version of the model, named the Communicable Risk Measure for Sexual Offences (CRMSO), was able to provide AUC values of .712, .686, and .690 for 5-year, 10-year, and total sexual recidivism, respectively, when applied to an independent validation sample of offenders. The ASRS-R was able to provide AUC values of .713, .694, and .693, for 5-year, 10-year, and total sexual recidivism when applied to the same sample of offenders. Hanley and MacNeil (1983) tests confirmed that the difference between the predictive accuracy of the ASRS-R and CRMSO was not significant. This initial result confirms that some of the current ASRS-R items are not strongly correlated with sexual recidivism in a New Zealand sample of offenders, and that it is possible to predict sexual recidivism with the same level of accuracy when those items are removed or modified, as they have been in the CRMSO. The results also made it clear that it is difficult to improve on the overall accuracy of the ASRS-R, even though the new model is more efficient in terms of having fewer predictors.

The next aim of Study 1 was to determine whether the CRMSO was able to provide greater sensitivity in predicting the relative risk of offenders than the ASRS-R; that is, was it able to classify the offenders into risk categories that were more accurate than those currently provided by the ASRS-R. Cutoffs were decided upon to separate the final scores for the CRMSO in 4 categories of risk; the same categories that the ASRS-R currently utilises: low-risk, medium-low risk, medium-high risk, and high-risk. Although there was no significant improvement in the lower 3 levels of risk, the CRMSO appeared to be more sensitive for identifying offenders who fell into the highest risk category; the high-risk group identified by the CRMSO displayed a 5-year sexual recidivism rate of 36.8%, which had climbed to 47.8% by the end of the follow-up period. In contrast, the high-risk group identified by the ASRS-R displayed a 5-year sexual recidivism rate of 25.4%, which climbed to 36.3% by the end of the follow-up period. This finding confirmed that the CRMSO may be more sensitive to the relative risk of sexual offenders than the ASRS-R, at least for those deemed to be at the highest level of risk. It could be argued that identifying those at the highest risk of sexually reoffending is the most significant aspect of risk assessment, in terms of being able to manage those offenders as effectively as possible with a combination of treatment and supervision in order to reduce the risk of future harm to the community.

The final aim of Study 1 was to attempt to apply the new standardisation of the communication of risk for sexual offenders, recently developed and promoted by Hanson et. al. (2017) using the Static-99R and Static-2002R, to the CRMSO, to see if any further improvement could be made to the classification of risk, and to align the communication via the risk category labels with that of Hanson et. al. (2017), thus making the CRMSO more informative for individuals who frequently have to make decisions on the sentencing and supervision conditions,

such as judges. It has been reported that the risk category label given to an offender by the risk measure applied is often the most valued piece of information taken into account in a courtroom setting, more so that any numerical information from that risk measure, such as the total score (Varela et al., 2014). The application of Hanson et. al.'s (2017) guidelines, focusing on communicating the relative risk of sexual offenders, led to the creation of a fifth risk category for the CRMSO, a 'very low risk' group, and relabelled the other four categories in the following manner: 'low-risk' became 'below average risk,' 'medium-low risk' became 'average risk,' 'medium-high risk' became 'above average risk,' and 'high-risk' became 'well above average risk.' Importantly, the newly-established 'very low risk' group offenders accounted for 9.9% of the sample, and displayed a 5-year sexual recidivism rate of just 1.9%, and a 10-year sexual recidivism rate of only 3.3%, placing this group of offenders at the same risk of committing a further sexual offence as a non-sexual offender (Duwe, 2012; Wormith et al., 2012). In terms of resourcing the management of sexual offenders both in the community and while incarcerated, being able to identify a group of sexual offenders who have no greater risk of sexually reoffending than a non-sexual offender has of committing an initial sexual offence, would be valuable information for the Department of Corrections.

Considered together, the findings of Study 1 indicate that the CRMSO, as a computer-scored static risk assessment measure, could be a viable alternative to the ASRS-R for use with sexual offenders in New Zealand. However, we suggest that further validation using a sample of more recently-released offenders would be valuable beforehand, as it is acknowledged that the nationwide cohort of offenders used in Study 1 were all released before 2003. Additionally, we would strongly urge the continued use of the five standardised risk categories proposed by Hanson et. al. (2017), and their corresponding offender descriptions, to ensure that the decision-

making carried out by judges on the basis of communicated risk is as well-informed and as well-understood as possible, regardless of which risk assessment measure is chosen to communicate that risk.

Study 2 focused on extending prior research carried out by Hanson et. al. (2014), which was the first to examine multiple potential moderators of the time spent offence-free in the community effect for sexual offenders, and to determine whether sexual offenders who were considered to be high-risk at the time of their release remained high-risk over time, after they had remained in the community for a period of time without committing further sexual offences. Hanson et. al. (2014) found that high-risk offenders did not remain high-risk over time, with their risk of recidivism declining to 40% of their initial risk after spending 5 years sexual offence-free in the community. After 10 years sexual offence-free, their rate of recidivism had dropped to the rate of recidivism displayed consistently by the offenders who were classified as low-risk at the time of their release. Additionally, none of the potential moderators investigated (including treatment level, victim type and age at release) had any impact on the rate of desistance that occurred, even though the initial rates of sexual recidivism were markedly different for some of the moderators.

There has been relatively little research on the desistance patterns and processes for sexual offenders both worldwide and in New Zealand specifically. The importance of conducting such research in countries other than the United States has been highlighted on multiple occasions, given the restrictive policy and supervisory conditions that affect sexual offenders in the United States, especially when compared to less penal countries, such as New Zealand (Kazemian, 2007; Kras & Blasko, 2016; Lussier & McCuish, 2016). Therefore, Study 2 aimed to fill an identified gap in the knowledge around sex offender desistance, especially for those who

are considered at a high-risk of sexually re-offending at the time of their release. The results from Study 2 indicate that high-risk sexual offenders in New Zealand do not remain high-risk over time, and static risk level based on offence history is a valid, but time-dependent, indicator of how likely an individual is to reoffend. High-risk offenders who had remained sexual offence-free in the community for 5 years had a 5-year recidivism rate that was only 30% of their initial 5-year rate of recidivism at the time of release; dropping from 18.84% down to 5.87%, and further decreasing to 3.74% for those who remained sexual offence-free for 10 years after their release. In addition, although the other potential moderators that were investigated (i.e., age at release, victim age, and victim gender) had differing initial rates of recidivism, there were no significant differences in the relative reduction of those rates over time. Both results matched the findings observed by Hanson et. al. (2014) with an aggregated sample of sexual offenders, therefore, successfully extending the original findings to a nationwide New Zealand cohort of sexual offenders.

Moreover, Study 2 was able to expand on the findings of Hanson et. al.'s (2014) original study in a number of important ways. Firstly, as recidivism information was available for violent and general offending as well as for sexual offending, the relative rates of recidivism for any type of offending behaviour were also able to be calculated; thus, indicating whether high-risk sexual offenders were desisting from sexual offending only, or were in fact desisting from all types of offending behaviour. The results suggest that overall recidivism for any type of offending behaviour was declining at a similar rate to that displayed for sexual offending, with the 5-year recidivism rate for the high-risk offenders who had remained offence-free for 5 years decreasing to 30% of the initial risk of recidivism; dropping from 78.31% to 24.39%, and dropping further to 7.10% for those who had remained offence-free for 10 years after their release. To our

knowledge, these results also provide the first evidence that desistance for sexual offenders is a general process that affects both sexual and non-sexual recidivism. This finding has important implications for our understanding of desistance in terms of the mechanisms that may be common for desistance from all types of offending, regardless of the offender profile or the severity of the offending behaviour. It is possible that some of the commonly acknowledged pathways of desistance for general offending are also pathways for violent and general offending; such as maturation (ageing out of offending), or cognitive transformation leading to behavioural change or re-construction of identity (Shadd Maruna, 2004; Shadd Maruna & Roy, 2007; Paternoster & Bushway, 2009). The current study was not able to offer any explanation for how desistance may have occurred, but provides an important starting point of investigation in to the mechanisms of desistance and the ways in which all offenders, regardless of their offender profile, may be affected by the same factors, motivators, or life-change events that lead to a change in direction away from crime.

Secondly, the follow-up period for Study 2 was long enough to be able to calculate the 5-year recidivism rates for offenders who had remained offence-free in the community for 15 years, in addition to the respective rates for offenders who had been offence-free for 5, and 10, years, which were the rates initially reported on by Hanson et. al. (2014). This inclusion proved to be especially important for the sexual desistance results, as the 5-year sexual recidivism rate for high-risk offenders who had been offence-free in the community for 15 years decreased to 2.11%, which was not only lower than the initial 5-year recidivism rate for the low-risk offenders, but was also close to the base rate of <2% sexual recidivism that is found with non-sexual offenders; the expected rate of spontaneous sexual offending (Karl Hanson, Babchishin, Maaike Helmus, Thornton, & Phenix, 2017). These results suggest that high-risk sexual

offenders who have remained in the community for 15 years without committing another sexual offence have a similar risk profile to that of an extremely low-risk sexual offender, or possibly even an offender with no previous sexual offences. This finding has important implications for the long-term management of sexual offenders in the community, and underscores the value of considering time offence-free when planning supervision requirements and the continuing risk an individual realistically poses to the community.

Additionally, the fact that a nationwide New Zealand cohort could be utilised for Study 2 is pertinent for multiple reasons. Firstly, it removed the potential confounding effect that differing release conditions or supervision regulations could have on the results, which was mentioned as a potential limitation in the aggregate sample used by Hanson et. al. (2014) due to the fact that samples from multiple countries were included; and for samples from the United States, multiple states were also involved, each with the potential to manage sexual offenders differently in the community. Secondly, it is rare for the cohort of any study to comprise of the entirety of a specific population; in this instance, the entirety of the offender population who had been convicted of a sexual offence and been released from prison over an 11-year period of time. New Zealand is able to offer a unique contribution to correctional psychology research in this way, as only one set of policies and regulations govern the country as a whole, and offender records are only kept in one single database, managed by the New Zealand Department of Corrections. This is in contrast to many countries where policy and record-keeping can differ city to city, state to state, or region to region. Furthermore, nationwide studies would not be practical in countries with significantly larger populations, such as the United States or United Kingdom.

Overall, the results from Study 2 suggest that desistance for sexual offenders may occur in the absence of a penal approach to offender management, and that desistance from all types of

offending behaviour occurs at similar rates. These findings support those initially found by Hanson et. al. (2014), and strengthen the proposition that offenders who are considered to be high-risk at the time of their release from prison do not remain high-risk once they have spent as little as 5 years offence-free in the community; thus, static risk level is a valid, but time-dependent, measure of an individual's likelihood of reoffending. It is suggested that the level of risk should be re-evaluated if offenders have abstained from further offending while having the opportunity to do so.

Implications, Limitations, and Concluding Comments

The findings from the current research have several implications for the static risk assessment of sexual offenders in New Zealand, and for how static risk should be applied once offenders have been released back in to the community. The research as a whole supports previously reported empirical findings while offering several original contributions to the field.

A static risk assessment measure that can be computer-scored has been an integral part of the risk assessment process for sexual offenders in New Zealand for the last decade, initially using the ASRS, and more recently, the ASRS-R (Alexander Skelton et al., 2006). The creation of the CRMSO by the current research offers an alternative risk measure that can also be computer-scored, and may offer benefits over and above that of the ASRS-R in terms of categorising and communicating the relative risk of sexual offenders in New Zealand, particularly when identifying those at the highest and lowest risk of sexually reoffending. Utilising a risk measure that is more sensitive to differences in the relative risk of offenders will allow for the most efficient and ethical use of available resources for the Department of

Corrections, both of which are important for the safety of the community and for the human rights of offenders while they are managed by Corrections.

Additionally, the inability of the CRMSO, which was developed from scratch using a pool of offence history variables, to provide a significant increase in the overall predictive accuracy of the ASRS-R aligns with previous research that has compared predictive accuracy of different static risk models for sex offenders. The general finding has been that different actuarial risk models have performed at comparable levels of accuracy. Barbaree et. al. (2001) compared the predictive accuracy of multiple static risk models, and found that the SORAG, RRASOR, and Static-99 all obtained AUCs between .68 and .73 for a sample of 150 sexual offenders. Further research also found that there were no significant difference among the VRAG, SORAG, RRASOR, Static-99, Static-2002 and MnSOST-R in the accuracy of predicting sexual recidivism for a sample of 468 sex offenders (Langton et al., 2007). These findings suggest that there may be a few key variables that are common across static risk measures and provide a substantial amount of the predictive power for sexual recidivism, such as age at release and number of prior sexual offences. Because all models generally include these variables, overall accuracy tends to be similar across models.

Moreover, the standardised communication of risk levels, created and promoted by Hanson et. al. (2017) for use with the Static-99R and Static-2002R, have now been utilised effectively with the CRMSO, based on a cohort of New Zealand sexual offenders; thus extending the practicality and value of Hanson et. al.'s (2017) suggestions. The successful application of the standardised five categories of risk to a national cohort of sexual offenders is an important step for static risk assessment for sexual offenders in New Zealand; an offender group whose true propensity for re-offending is misunderstood and misinterpreted by many people, including those

in charge of making decisions about sexual offender management, such as courtroom judges. This research supports both the use and efficacy of more understandable standardised risk categories when communicating the risk level of any offender who has been convicted of a sexual crime in New Zealand, and it is hoped that this shift in communication will allow for more informed decisions to be made regarding the management of sexual offenders.

In addition, the current research has demonstrated that although static risk level, as identified by offence history and age at release, is a valid measure of an individual's propensity to commit further sexual offences, it is also time-dependent. If an individual, categorised as high-risk at the time of their release, has been in the community for 5 years with the opportunity to commit further offences but has abstained from doing so, their risk of recidivism reduces significantly, and continues to reduce the longer they have successfully abstained from further offending. The fact that an individual who was categorised as high-risk at the time of their release may pose no greater risk of further sexual harm to the community than a non-sexual offender if they have abstained from sexual offending for 15 years after they are released has important implications for community supervision recommendations and requirements. The findings from the current research will be especially relevant to the consideration of whether to grant Extended Supervision Orders or Public Protection Orders to specific New Zealand offenders, in terms of the more efficient initial communication of risk to decision-makers, and the attention granted to any potential time spent offence-free in the community so far that may impact the accuracy of any given risk assessment outcome. As substantial resources go in to both the court hearing process for the application of ESOs and PPOs, and any subsequent ESO or PPO that may be granted, having the most accurate assessment of recidivism risk and the most

informed decision-makers should help ensure that the costly decisions being made regarding offender management are as accurate, and just, as possible.

The major limitation of the current research is that the cohort used throughout were released from New Zealand prisons between 1992 and 2002, and the environment they would have been released in to may be quite different from the environment offenders are being released at present. As well as the modernisation that has occurred in many aspects of society since that time, a number of legislations affecting the parole and supervision conditions for sexual offenders and violent offenders that have brought in to effect since 2002. Therefore, it would be preferable to replicate the current research with a new national cohort of sexual offenders that have been released within the last 5-10 years, to observe if there are any differences, or if there are any observable impacts of the more recent legislation.

A number of immediate next steps have also been identified for further research. Firstly, the five categories of risk applied to the CRMSO, as well as benefiting from further validation with a more recent cohort of New Zealand offenders, would also benefit from a more in-depth analysis of the characteristics of offenders that fell in to each of the five categories. Although detailed recidivism rate comparisons were carried out between the offenders categorised by the CRMSO and the offenders categorised by Hanson et. al. (2017) using the Static-99R and Static-2002R, Hanson et. al. (2017) also gave detailed profiles of the offenders who fell in to each category, and the scope of the current research did not allow for such in-depth comparisons to be made. Secondly, it would be useful for those involved in the decision-making process for the management of sexual offenders in the community to have more specific guidelines regarding exactly how, and when, to re-categorise the level of risk for offenders who have remained offence-free in the community. The current findings could be evaluated in such a way as to allow

for those specific recommendations to be made, which if carried out, would maximise the application of the present research. Lastly, the findings pertaining to non-contact offenders as being a potentially high-risk group of sexual offenders highlight that the characteristics and offending profile of this group warrants further investigation, especially in light of the fact that 40% of the non-contact only offenders in the current cohort were later reconvicted for contact sexual offences, suggesting that it may be common for non-contact offenders to ‘graduate’ to contact offending over time.

This research has demonstrated that improvements to the current knowledge and understanding of static risk assessment in New Zealand can be made, and that these improvements, if implemented, could have significant implications for the Department of Corrections, the offenders under the supervision of Corrections, and the safety of the community. Improvements in risk assessment will ultimately reduce the potential for further harm to be committed, reduce unnecessary costs for Corrections, and ensure that offenders are being provided with the most appropriate level of treatment and supervision.

References

- Allan, M., Grace, R. C., Rutherford, B., & Hudson, S. M. (2007). Psychometric Assessment of Dynamic Risk Factors for Child Molesters. *Sexual Abuse: A Journal of Research and Treatment*, 19(4), 347–367. <https://doi.org/10.1177/107906320701900402>
- Anderson, D., & Hanson, R. K. (2010). Static-99: An actuarial tool to assess risk of sexual and violent recidivism among sexual offenders. In R. K. Otto & K. S. Douglas (Eds.), *Handbook of violence risk assessment* (pp. 251–267). Abingdon, England: Routledge.
- Andrews, D. A., & Bonta, J. (2006). *The Psychology of Criminal Conduct (4th ed.)*. Cincinnati, Ohio: Anderson Publishing.
- Andrews, D. A., Bonta, J., & Hoge, R. D. (1990). Classification for effective rehabilitation: rediscovering psychology. *Criminal Justice and Behavior*, 17(1), 19–52.
- Andrews, D. A., Bonta, J., & Wormith, J. S. (2004). *The Level of Service/Case Management Inventory (LS/CMI)*. Toronto, Canada.
- Andrews, D. A., Bonta, J., & Wormith, J. S. (2006). The Recent Past and Near Future of Risk and/or Need Assessment. *Crime & Delinquency*, 52(1), 21. <https://doi.org/10.1177/0011128705281756>
- Babchishin, K. M., Blais, J., & Helmus, L. (2012). Do Static Risk Factors Predict Differently for Aboriginal Sex Offenders? A Multi-site Comparison Using the Original and Revised Static-99 and Static-2002 Scales <sup/>. *Canadian Journal of Criminology and Criminal Justice*, 54(1), 1–43. <https://doi.org/10.3138/cjccj.2010.E.40>
- Babchishin, K. M., Hanson, R. K., & Blais, J. (2016). *Less Is More*. *Sexual Abuse: A Journal of Research and Treatment* (Vol. 28). <https://doi.org/10.1177/1079063215569544>
- Babchishin, K. M., Hanson, R. K., & Hermann, C. a. (2011). The characteristics of online sex

offenders: a meta-analysis. *Sexual Abuse : A Journal of Research and Treatment*, 23(1), 92–123. <https://doi.org/10.1177/1079063210370708>

Bakker, L., Hudson, S. M., Wales, D. S., & Riley, D. (1998). “...And there was light”: An evaluation of the *Kia Marama* treatment programme for New Zealand sex offenders against children. Wellington.

Balmer, A. S., & Sandland, R. (2012). Making Monsters: The Polygraph, the Plethysmograph, and Other Practices for the Performance of Abnormal Sexuality. *Journal of Law and Society*, 39(4), 593–615. <https://doi.org/10.1111/j.1467-6478.2012.00601.x>

Barbaree, H. E., Blanchard, R., & Langton, C. M. (2003). The Development of Sexual Aggression through the Life Span. *Annals of the New York Academy of Sciences*, 989(1), 59–71.

Barbaree, H. E., Langton, C. M., & Blanchard, R. (2007). Predicting recidivism in sex offenders using the VRAG and SORAG: The contribution of age-at-release. *International Journal of Forensic Mental Health*, 6(1), 29–46. <https://doi.org/10.1080/14999013.2007.10471247>

Barbaree, H. E., Seto, M. C., Langton, C. M., & Peacock, E. J. (2001). Evaluating the Predictive Accuracy of Six Risk Assessment Instruments for Adult Sex Offenders. *Criminal Justice and Behavior*, 28(4), 490–521. <https://doi.org/10.1177/009385480102800406>

Barth, J., Bermetz, L., Heim, E., Trelle, S., & Tonia, T. (2013). The current prevalence of child sexual abuse worldwide: A systematic review and meta-analysis. *International Journal of Public Health*, 58(3), 469–483. <https://doi.org/10.1007/s00038-012-0426-1>

Baxter, D. J., Marshall, W. L., Barbaree, H. E., Davidson, P. R., & Malcolm, P. B. (1984). Deviant Sexual Behavior: Differentiating Sex Offenders by Criminal and Personal History, Psychometric Measures, and Sexual Response. *Criminal Justice and Behavior*, 11(4), 477–501. <https://doi.org/10.1177/0093854884011004007>

- Beaudry-Cyr, M., Jennings, W. G., Zgoba, K. M., & Tewksbury, R. (2017). Examining the Continuity of Juvenile Sex Offending Into Adulthood and Subsequent Patterns of Sex and General Recidivism. *International Journal of Offender Therapy and Comparative Criminology*, *61*(3), 251–268. <https://doi.org/10.1177/0306624X15594442>
- Beech, a., Friendship, C., Erikson, M., & Hanson, R. K. (2002). The Relationship Between Static and Dynamic Risk Factors and Reconviction in a Sample of U.K. Child Abusers. *Sexual Abuse: A Journal of Research and Treatment*, *14*(2), 155–167. <https://doi.org/10.1177/107906320201400206>
- Beech, A. R., & Craig, L. A. (2012). The current status of static and dynamic factors in sexual offender risk assessment. *Journal of Aggression, Conflict and Peace Research*, *4*(4), 169–185.
- Beggs, S. M., & Grace, R. C. (2010). Assessment of dynamic risk factors: An independent validation study of the violence risk scale: Sexual offender version. *Sexual Abuse: Journal of Research and Treatment*, *22*(2), 234–251. <https://doi.org/10.1177/1079063210369014>
- Beggs, S. M., & Grace, R. C. (2011). Treatment gain for sexual offenders against children predicts reduced recidivism: a comparative validity study. *Journal of Consulting and Clinical Psychology*, *79*(2), 182–192. <https://doi.org/10.1037/a0022900>
- Bersot, H. Y., & Arrigo, B. A. (2015). Responding to Sex Offenders. *Criminal Justice and Behavior*, *42*(1), 32–44. <https://doi.org/10.1177/0093854814550025>
- Boer, D. P., Hart, S. D., Kropp, P. R., & Webster, C. D. (1997). *Manual for the Sexual Violence Risk-20: Professional guidelines for assessing risk of sexual violence*. Vancouver, Canada: Mental Health, Law and Policy Institute.
- Boney-McCoy, S., & Finkelhor, D. (1996). Is youth victimization related to trauma symptoms

- and depression after controlling for prior symptoms and family relationships? A longitudinal, prospective study. *Journal of Consulting and Clinical Psychology*, 64(6), 1406–1416. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/8991327>
- Brouillette-Alarie, S., Babchishin, K. M., Hanson, R. K., & Helmus, L. M. (2016). Latent Constructs of the Static-99R and Static-2002R: A Three-Factor Solution. *Assessment*, 23(1), 96–111. <https://doi.org/10.1177/1073191114568114>
- Brown, S. (1999). Public attitudes toward the treatment of sex offenders. *Legal and Criminological Psychology*, 4(2), 239–252. <https://doi.org/10.1348/135532599167879>
- Cantor, J. M., Blanchard, R., Robichaud, L. K., & Christensen, B. K. (2005). Quantitative reanalysis of aggregate data on IQ in sexual offenders. *Psychological Bulletin*, 131(4), 555–568. <https://doi.org/10.1037/0033-2909.131.4.555>
- Casey, S. (2016). Dynamic risk and sexual offending: The conundrum of assessment. *Psychology, Crime & Law*, 22(1–2), 104–123. <https://doi.org/http://dx.doi.org/10.1080/1068316X.2015.1111366>
- Cohen, L. E., & Felson, M. (1979). Social Change and Crime Rate Trends: A Routine Activity Approach. *American Sociological Review*, 44(4), 588. <https://doi.org/10.2307/2094589>
- Craig, L. a., Browne, K. D., & Stringer, L. (2004). Comparing Sex Offender Risk Assessment Measures on a UK Sample. *International Journal of Offender Therapy and Comparative Criminology*, 48(1), 7–27. <https://doi.org/10.1177/0306624X03257243>
- Craig, L. a., Thornton, D., Beech, a., & Browne, K. D. (2007). The Relationship of Statistical and Psychological Risk Markers to Sexual Reconviction in Child Molesters. *Criminal Justice and Behavior*, 34(3), 314–329. <https://doi.org/10.1177/0093854806291416>
- Dawes, R., Faust, D., & Meehl, P. (1989). Clinical versus actuarial judgment. *Science*,

243(4899), 1668–1674. <https://doi.org/10.1126/science.2648573>

Ducro, C., & Pham, T. (2006). Evaluation of the SORAG and the static-99 on Belgian sex offenders committed to a forensic facility. *Sexual Abuse: Journal of Research and Treatment, 18*(1), 15–26. <https://doi.org/10.1007/s11194-006-9003-6>

Duwe, G. (2012). Predicting First-Time Sexual Offending Among Prisoners Without a Prior Sex Offense History: The Minnesota Sexual Criminal Offending Risk Estimate (MnSCORE). *Criminal Justice and Behavior, 39*(11), 1436–1456.

<https://doi.org/10.1177/0093854812453911>

Eher, R., Schilling, F., Hansmann, B., Pumberger, T., Nitschke, J., Habermeyer, E., & Mokros, A. (2016). Sadism and Violent Reoffending in Sexual Offenders. *Sexual Abuse: A Journal of Research and Treatment, 28*(1), 46–72. <https://doi.org/10.1177/1079063214566715>

Epperson, D. L., Kaul, J. D., & Hesselton, D. (1998). *Final report on the development of the Minnesota Sex Offender Screening Tool - Rrevised.*

Epperson, D. L., Kaul, J. D., Huot, S., Goldman, R., & Alexander, W. (2003). *Minnesota Sex Offender Screening Tool–Revised (MnSOST-R) Technical paper: Development, validation, and recommended risk level cut scores.*

Farmer, M., McAlinden, A.-M., & Maruna, S. (2015). Understanding desistance from sexual offending. *Probation Journal, 62*(4), 320–335. <https://doi.org/10.1177/0264550515600545>

Farmer, M., McAlinden, A. M., & Maruna, S. (2016). Sex Offending and Situational Motivation: Findings from a Qualitative Analysis of Desistance from Sexual Offending. *International Journal of Offender Therapy and Comparative Criminology, 60*(15), 1756–1775.

<https://doi.org/10.1177/0306624X16668175>

Farrall, S., & Calverley, A. (2006). *Understanding desistance from crime: Theoretical directions*

in resettlement and rehabilitation. New York, NY: Open University Press.

- Farrall, S., & Maruna, S. (2004). Desistance-Focused Criminal Justice Policy Research: Introduction to a Special Issue on Desistance from Crime and Public Policy. *The Howard Journal of Criminal Justice*, 43(4), 358–367. <https://doi.org/10.1111/j.1468-2311.2004.00335.x>
- Farrington, D. P., & West, D. J. (1995). Effects of marriage, separation, and children on offending by adult males. In Z. S. Blau & J. Hagan (Eds.), *Current perspectives on aging and the life cycle* (4th ed., pp. 249–281). Greenwich, CT: JAI.
- Friendship, C., Mann, R. E., & Beech, A. R. (2003). Evaluation of a national prison-based treatment program for sexual offenders in England and Wales. *Journal of Interpersonal Violence*, 18(7), 744–759. <https://doi.org/10.1177/0886260503253236>
- Gahir, M., & Garrett, T. (1999). Issues in the treatment of asian sexual offenders. *Journal of Sexual Aggression*, 4(2), 94–104. <https://doi.org/10.1080/13552609908413287>
- Gendreau, P., Goggin, C., & Smith, P. (2002). Is the PCL-R really the “unparalleled” measure of offender risk? A lesson in knowledge cumulation. *Criminal Justice and Behavior*, 29(4), 397–426. <https://doi.org/10.1177/0093854802029004004>
- Giordano, P. C., Cernkovich, S. A., & Rudolph, J. L. (2002). Gender, Crime, and Desistance : Toward a Theory of Cognitive Transformation. *American Journal of Sociology*, 107(4), 990–1064.
- Girard, L., & Wormith, J. S. (2004). *The predictive validity of the level of service inventory-- Ontario revision of general and violent recidivism among various offender groups*. *Criminal Justice and Behavior* (Vol. 31). <https://doi.org/10.1177/0093854803261335>
- Göbbels, S., Ward, T., & Willis, G. M. (2012). An integrative theory of desistance from sex

offending. *Aggression and Violent Behavior*, 17(5), 453–462.

<https://doi.org/10.1016/j.avb.2012.06.003>

Grace, R. C., & Wilson, N. (2013). *The Automated Sexual Recidivism Scale (ASRS): Revised Age Weights*. Christchurch, New Zealand.

Grace, R. C., & Wilson, N. (2018). *Automated Sex offender recidivism scale-Revised (ASRS-R): Development and Practice Guidance Manual*. Wellington, New Zealand.

Grove, W. M., Zald, D. H., Lebow, B. S., Snitz, B. E., & Nelson, C. (2000). Clinical versus mechanical prediction: A meta-analysis. *Psychological Assessment*, 12(1), 19–30.

<https://doi.org/10.1037//1040-3590.12.1.19>

Hall, G. C. (1995). Sexual offender recidivism revisited: a meta-analysis of recent treatment studies. *Journal of Consulting and Clinical Psychology*, 63(5), 802–809. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/7593874>

Hall, G. C., Sue, S., Narang, D., & Lilly, R. (2000). Culture-specific models of men's sexual aggression: Intra- and interpersonal determinants. *Cultural Diversity & Ethnic Minority Psychology*, 6(3), 252–267.

Hanson, R. K. (1997). *The Development of a Brief Actuarial Risk Scale for Sexual Offense Recidivism*. Ottawa.

Hanson, R. K. (2000). Will They Do It Again? Predicting Sex-Offense Recidivism. *Current Directions in Psychological Science*, 9(3), 106–109. <https://doi.org/10.1111/1467-8721.00071>

Hanson, R. K. (2002). Recidivism and Age: Follow-Up Data From 4,673 Sexual Offenders. *Journal Of Interpersonal Violence*, 17(10), 1046–1062.

<https://doi.org/10.1177/088626002236659>

Hanson, R. K. (2006). Does Static-99 Predict Recidivism Among Older Sexual Offenders?

Sexual Abuse: A Journal of Research and Treatment, 18(4), 343–355.

<https://doi.org/10.1177/107906320601800403>

Hanson, R. K., Babchishin, K. M., Helmus, L., & Thornton, D. (2013). *Quantifying the Relative*

Risk of Sex Offenders: Risk Ratios for Static-99R. Sexual Abuse: Journal of Research and

Treatment (Vol. 25). <https://doi.org/10.1177/1079063212469060>

Hanson, R. K., Bourgon, G., Helmus, L., & Hodgson, S. (2009). The Principles of Effective

Correctional Treatment Also Apply To Sexual Offenders: A Meta-Analysis. *Criminal Justice*

and Behavior, 36(9), 865–891. <https://doi.org/10.1177/0093854809338545>

Hanson, R. K., & Bussière, M. T. (1996). Predictors of Sexual Offender Recidivism: A Meta-

Analysis. *Public Works*, 66(2), 1–6.

Hanson, R. K., & Harris, a. J. R. (2000). Where Should We Intervene?: Dynamic Predictors of

Sexual Offense Recidivism. *Criminal Justice and Behavior*, 27(1), 6–35.

<https://doi.org/10.1177/0093854800027001002>

Hanson, R. K., & Harris, a. J. R. (2001). A Structured Approach to Evaluating Change Among

Sexual Offenders. *Sexual Abuse: A Journal of Research and Treatment*, 13(2), 105–122.

<https://doi.org/10.1177/107906320101300204>

Hanson, R. K., Harris, A. J. R., Helmus, L., & Thornton, D. (2014). High-Risk Sex Offenders

May Not Be High Risk Forever. *Journal of Interpersonal Violence*, 29(15), 2792–2813.

<https://doi.org/10.1177/0886260514526062>

Hanson, R. K., Helmus, L., & Thornton, D. (2010). Predicting recidivism amongst sexual

offenders: a multi-site study of static-2002. *Law and Human Behavior*, 34(3), 198–211.

<https://doi.org/10.1007/s10979-009-9180-1>

- Hanson, R. K., & Morton-Bourgon, K. E. (2005). The characteristics of persistent sexual offenders: A meta-analysis of recidivism studies. *Journal of Consulting and Clinical Psychology, 73*(6), 1154–1163. <https://doi.org/10.1037/0022-006X.73.6.1154>
- Hanson, R. K., & Morton-Bourgon, K. E. (2009). The accuracy of recidivism risk assessments for sexual offenders: a meta-analysis of 118 prediction studies. *Psychological Assessment, 21*(1), 1–21. <https://doi.org/10.1037/a0014421>
- Hanson, R. K., Scott, H., & Steffy, R. a. (1995). A Comparison of Child Molesters and Nonsexual Criminals: Risk Predictors and Long-Term Recidivism. *Journal of Research in Crime and Delinquency, 32*(3), 325–337. <https://doi.org/10.1177/0022427895032003004>
- Hanson, R. K., Thornton, D., Helmus, L.-M., & Babchishin, K. M. (2016). What Sexual Recidivism Rates Are Associated With Static-99R and Static-2002R Scores? *Sexual Abuse: A Journal of Research and Treatment, 28*(3), 218–252. <https://doi.org/10.1177/1079063215574710>
- Hanson, & Thornton, D. (2000). American Psychology-Law Society (AP-LS) Improving Risk Assessments for Sex Offenders : A Comparison of Three Actuarial Scales Author (s): R . Karl Hanson and David Thornton Source : Law and Human Behavior , Vol . 24 , No . 1 , Advances in Assessment a. *Law and Human Behavior, 24*(1), 119–136.
- Harris, A. J. R., & Hanson, R. K. (2004). Sex Offender Recidivism : A Simple Question. *Public Safety and Emergency Preparedness Canada, 1–22.*
- Harris, D. A. (2014). Desistance From Sexual Offending: Findings From 21 Life History Narratives. *Journal of Interpersonal Violence, 29*(9), 1554–1578. <https://doi.org/10.1177/0886260513511532>
- Harris, D. A. (2016). A Descriptive Model of Desistance from Sexual Offending: Examining the

- Narratives of Men Released From Custody. *International Journal of Offender Therapy and Comparative Criminology*, 60(15), 1717–1737. <https://doi.org/10.1177/0886260513511532>
- Harris, G. T., & Rice, M. E. (2007). Adjusting actuarial violence risk assessments based on aging or the passage of time. *Criminal Justice and Behavior*, 34(3), 297–313. <https://doi.org/10.1177/0093854806293486>
- Harris, G. T., & Rice, M. E. (2007). Characterizing the Value of Actuarial Violence Risk Assessments. *Criminal Justice and Behavior*, 34(12), 1638–1658. <https://doi.org/10.1177/0093854807307029>
- Harris, G. T., Rice, M. E., & Cormier, C. A. (1991). Psychopathy and violent recidivism. *Law and Human Behavior*, 15(6), 625–637. <https://doi.org/10.1007/BF01065856>
- Helmus, L., Babchishin, K. M., & Hanson, R. K. (2013). The predictive accuracy of the Risk Matrix 2000. *Sexual Offender Treatment*, 8(2), 1–20.
- Helmus, L., & Hanson, R. K. (2009). Reporting Static-99 in Light of New Research on Recidivism Norms, 21(1), 38–45.
- Helmus, L., Hanson, R. K., Thornton, D., Babchishin, K. M., & Harris, a. J. R. (2012). Absolute Recidivism Rates Predicted By Static-99R and Static-2002R Sex Offender Risk Assessment Tools Vary Across Samples: A Meta-Analysis. *Criminal Justice and Behavior*, 39(9), 1148–1171. <https://doi.org/10.1177/0093854812443648>
- Hudson, S. M., Wales, D. S., Bakker, L., & Ward, T. (2002). Dynamic Risk Factors: The Kia Marama Evaluation. *Sexual Abuse: A Journal of Research and Treatment*, 14(2), 103–119. <https://doi.org/10.1177/107906320201400203>
- Hulley, J. L. (2016). While This Does Not in Any Way Excuse My Conduct. ": the Role of Treatment and Neutralizations in Desistance from Sexual Offending. *International Journal*

of Offender Therapy and Comparative Criminology, 60(15), 1776–1790.

<https://doi.org/10.1177/0306624X16668177>

Jones, L. M., Finkelhor, D., & Halter, S. (2006). Child maltreatment trends in the 1990s: why does neglect differ from sexual and physical abuse? *Child Maltreatment*, 11(2), 107–120.

<https://doi.org/10.1177/1077559505284375>

Karl Hanson, R., Babchishin, K. M., Maaik Helmus, L., Thornton, D., & Phenix, A. (2017).

Communicating the results of criterion referenced Prediction measures: Risk categories for the static-99R and static-2002R sexual offender risk assessment tools. *Psychological Assessment*, 29(5), 582–597. <https://doi.org/10.1037/pas0000371>

Kazemian, L. (2007). and Policy Considerations, (May 2006), 5–27.

<https://doi.org/10.1177/1043986206298940>

Kenny, D. T., Keogh, T., & Seidler, K. (2001). Predictors of Recidivism in Australian Juvenile Sex Offenders: Implications for Treatment. *Sexual Abuse: A Journal of Research and Treatment*, 13(2), 131–148. <https://doi.org/10.1177/107906320101300206>

Kenny, M. C., & McEachern, A. G. (2000). Racial, ethnic, and cultural factors of childhood sexual abuse: A selected review of the literature. *Clinical Psychology Review*, 20(7), 905–922. [https://doi.org/S0272-7358\(99\)00022-7](https://doi.org/S0272-7358(99)00022-7) [pii]

Kleban, H., Chesin, M. S., Jeglic, E. L., & Mercado, C. C. (2013). An Exploration of Crossover Sexual Offending. *Sexual Abuse: Journal of Research and Treatment*, 25(5), 427–443.

<https://doi.org/10.1177/1079063212464397>

Kras, K. R., & Blasko, B. L. (2016). Pathways to Desistance among Men Convicted of Sexual Offenses. *International Journal of Offender Therapy and Comparative Criminology*, 60(15), 1738–1755. <https://doi.org/10.1177/0306624X16668178>

- Kroner, D. G., & Mills, J. F. (2001). The accuracy of five risk appraisal instruments in predicting institutional misconduct and new convictions. *Criminal Justice and Behavior*, 28(4), 471–489. <https://doi.org/10.1177/009385480102800405>
- Kruttschnitt, C., Uggen, C., & Shelton, K. (2000). Predictors of desistance among sex offenders; the interaction of formal and informal social controls. *Justice Quarterly*, 17(1), 61–87. <https://doi.org/10.1080/07418820000094481>
- Langton, C. M., Barbaree, H. E., Harkins, L., & Peacock, E. J. (2008). Further Investigation of Findings Reported for the Minnesota Screening Tool – Revised. *Journal of Interpersonal Violence*, 23(10), 1363–1379.
- Langton, C. M., Barbaree, H. E., Seto, M. C., Peacock, E. J., Harkins, L., & Hansen, K. T. (2007). Actuarial assessment of risk for reoffense among adult sex offenders: Evaluating the predictive accuracy of the static-2002 and five other instruments. *Criminal Justice and Behavior*, 34(1), 37–59. <https://doi.org/10.1177/0093854806291157>
- Lasher, M. P., & McGrath, R. J. (2017). Desistance From Sexual and Other Violent Offending Among Child Sexual Abusers. *Criminal Justice and Behavior*, 44(3), 416–431. <https://doi.org/10.1177/0093854816670194>
- Laub, J. H., & Sampson, R. J. (2001). Understanding Desistance from Crime. *Crime and Justice*, 28(2001), 1–69. <https://doi.org/10.1007/s11417-006-9015-7>
- Laub, J. H., & Sampson, R. J. (2003). *Shared Beginnings, Divergent Lives: Delinquent Boys to Age 70*. Cambridge, MA: Harvard University Press.
- Laws, D. R., & Ward, T. (2011). *Desistance from Sex Offending: Alternatives to Throwing Away the Keys*. New York, NY: Guilford Press.
- LeBel, T. P., Burnett, R., Maruna, S., & Bushway, S. (2008). The ‘Chicken and Egg’ of

- Subjective and Social Factors in Desistance from Crime. *European Journal of Criminology*, 5(2), 131–159. <https://doi.org/10.1177/1477370807087640>
- Letourneau, E. J., Armstrong, K. S., Bandyopadhyay, D., & Sinha, D. (2013). Sex Offender Registration and Notification Policy Increases Juvenile Plea Bargains. *Sexual Abuse: Journal of Research and Treatment*, 25(2), 189–207. <https://doi.org/10.1177/1079063212455667>
- Levenson, J. S., & D'Amora, D. A. (2007). Social Policies Designed to Prevent Sexual Violence. *Criminal Justice Policy Review*, 18(2), 168–199. <https://doi.org/10.1177/0887403406295309>
- Lindsay, W. R., Ward, T., Morgan, T., & Wilson, I. (2007). Self-regulation of sex offending, future pathways and the Good Lives Model: Applications and problems. *Journal of Sexual Aggression*, 13(1), 37–50. <https://doi.org/10.1080/13552600701365613>
- Lussier, P. (2005). The criminal activity of sexual offenders in adulthood: Revisiting the specialisation debate. *Sexual Abuse: A Journal of Research and Treatment*, 17(3), 269–292. <https://doi.org/10.1007/s11194-005-5057-0>
- Lussier, P., & Cale, J. (2013). Beyond sexual recidivism: A review of the sexual criminal career parameters of adult sex offenders. *Aggression and Violent Behavior*, 18(5), 445–457. <https://doi.org/10.1016/j.avb.2013.06.005>
- Lussier, P., & Gress, C. L. Z. (2014). Community re-entry and the path toward desistance: A quasi-experimental longitudinal study of dynamic factors and community risk management of adult sex offenders. *Journal of Criminal Justice*, 42(2), 111–122. <https://doi.org/10.1016/j.jcrimjus.2013.09.006>
- Lussier, P., Harris, D. A., & McAlinden, A.-M. (2016). Desistance From Sexual Offending.

International Journal of Offender Therapy and Comparative Criminology, 60(15), 1711–1716. <https://doi.org/10.1177/0306624X16668174>

Lussier, P., & Healey, J. (2009). Rediscovering quetelet, again: The “aging” offender and the prediction of reoffending in a sample of adult sex offenders. *Justice Quarterly*, 26(4), 828–856. <https://doi.org/10.1080/07418820802593360>

Lussier, P., & McCuish, E. (2016). Desistance from Crime Without Reintegration: A Longitudinal Study of the Social Context and Life Course Path to Desistance in a Sample of Adults Convicted of a Sex Crime. *International Journal of Offender Therapy and Comparative Criminology*, 60(15), 1791–1812. <https://doi.org/10.1177/0306624X16668179>

Lussier, P., Tzoumakis, S., Cale, J., & Amirault, J. (2010). Criminal Trajectories of Adult Sex Offenders and the Age Effect: Examining the Dynamic Aspect of Offending in Adulthood. *International Criminal Justice Review*, 20(2), 147–168. <https://doi.org/10.1177/1057567710368360>

Mann, R. E., Hanson, R. K., & Thornton, D. (2010). Assessing risk for sexual recidivism: some proposals on the nature of psychologically meaningful risk factors. *Sexual Abuse : A Journal of Research and Treatment*, 22(2), 191–217. <https://doi.org/10.1177/1079063210366039>

Marentette, P. J. (2009). *An evaluation of the Kia Marama Treatment Programme for sex offenders against children*. University of Canterbury.

Maruna, S. (2001). *Making good: How ex-convicts reform and rebuild their lives*. Washington DC: American Psychological Association.

Maruna, S. (2004). Desistance from crime and explanatory style: a new direction in the psychology of reform. *Journal of Contemporary Criminal Justice*, 20(2), 184–200.

<https://doi.org/10.1177/1043986204263778>

Maruna, S. (2011). Reentry as a rite of passage. *Punishment & Society*, 13(1), 3–28.

<https://doi.org/10.1177/1462474510385641>

Maruna, S. (2012). Elements of successful desistance signaling. *Criminology and Public Policy*, 11(1), 73–86. <https://doi.org/10.1111/j.1745-9133.2012.00789.x>

Maruna, S., & Roy, K. (2007). Amputation or Reconstruction? Notes on the Concept of “Knifing Off” and Desistance From Crime. *Journal of Contemporary Criminal Justice*, 23(1), 104–124. <https://doi.org/10.1177/1043986206298951>

McAdams, D. (1993). *The stories we live by: Personal myths and the making of the self*. New York, NY: Guildford Press.

McGee, H., O’Higgins, M., Garavan, R., & Conroy, R. (2011). Rape and child sexual abuse: what beliefs persist about motives, perpetrators, and survivors? *Journal of Interpersonal Violence*, 26(17), 3580–3593. <https://doi.org/10.1177/0886260511403762>

McGrath, R. J., Cumming, G. F., & Burchard, B. L. (2003). *Current Practices and Trends in Sexual Abuser Management: The Safer Society 2002 Nationwide Survey*. Brandon, Vermont: Safer Society Foundation Inc.

McGrath, R. J., Cumming, G. F., Burchard, B. L., Zeoli, S., & Ellerby, L. (2010). *Current practices and emerging trends in sexual abuser management: The Safer Society 2009 North American Survey*. Brandon, Vermont: Safer Society Press.

McGrath, R. J., Hoke, S. E., & Vojtisek, J. E. (1998). Cognitive-Behavioral Treatment of Sex Offenders: A Treatment Comparison and Long-Term Follow-Up Study. *Criminal Justice and Behavior*, 25(2), 203–225. <https://doi.org/10.1177/0093854898025002004>

McGrath, R. J., Lasher, M. P., & Cumming, G. F. (2012). The Sex Offender Treatment

- Intervention and Progress Scale (SOTIPS). *Sexual Abuse: A Journal of Research and Treatment*, 24(5), 431–458. <https://doi.org/10.1177/1079063211432475>
- Middleton, D., & Mandeville-norden, R. (2009). Does treatment work with internet sex offenders? Emerging findings from the Internet Sex Offender Treatment Programme (i-SOTP). *Journal of Sexual ...*, (October 2012), 37–41. Retrieved from <http://www.tandfonline.com/doi/abs/10.1080/13552600802673444>
- Miner, M. H., & Dwyer, S. M. (1997). The Psychosocial Development of Sex Offenders: Differences between Exhibitionists, Child Molesters, and Incest Offenders. *International Journal of Offender Therapy and Comparative Criminology*, 41(1), 36–44. <https://doi.org/10.1177/0306624X9704100104>
- Mishra, S., & Lalumière, M. (2009). Is the crime drop of the 1990s in Canada and the USA associated with a general decline in risky and health-related behavior? *Social Science and Medicine*, 68(1), 39–48. <https://doi.org/10.1016/j.socscimed.2008.09.060>
- Moore, L. S. (2012). *A comparison of Offence History and Post-Release Outcomes for Sexual Offenders Against Children Who Attended or Did Not Attend the Kia Marama Special Treatment Unit*. University of Canterbury.
- Nathan, L., Wilson, N. J., & Hillman, D. (2003). *Te whakatotahitanga: An Evaluation of the Te Piriti Special Treatment Programme for Child Sex Offenders in New Zealand*. Wellington, New Zealand.
- New Zealand Police. (2015). *New Zealand Crime Statistics 2014: A Summary of Recorded and Resolved Offence Statistics*.
- Nicholaichuk, T. P., Olver, M. E., Gu, D., & Wong, S. C. P. (2014). Age, Actuarial Risk, and Long-Term Recidivism in a National Sample of Sex Offenders. *Sexual Abuse: A Journal of*

Research and Treatment, 26(5), 406–428. <https://doi.org/10.1177/1079063213492340>

Olver, M. E., Wong, S. C. P., Nicholaichuk, T., & Gordon, A. (2007). The validity and reliability of the Violence Risk Scale-Sexual Offender version: assessing sex offender risk and evaluating therapeutic change. *Psychological Assessment*, 19(3), 318–329. <https://doi.org/10.1037/1040-3590.19.3.318>

Paternoster, R. A. Y., & Bushway, S. (2009). Desistance and the “Feared Self”: Toward an Identity Theory of Criminal Desistance. *The Journal of Criminal Law and Criminology*, 99(4), 1103–1156.

Paulhus, D. L. (2002). Socially desirable responding: the evolution of a construct. In H. Braun, D. N. Jackson, & D. E. Wiley (Eds.), *The Role of constructs in psychological and educational measurement*. Mahwah, New Jersey: Lawrence Erlbaum.

Phenix, A., Fernandez, Y., Harris, A., Helmus, M., Hanson, R., & Thornton, D. (2016). Static-99R coding rules revised, 1–94. Retrieved from http://www.static99.org/pdffdocs/Coding_manual_2016_v2.pdf

Pithers, W. D. (1990). Relapse prevention with sexual offenders. In W. L. Marshall, D. R. Laws, & H. E. Barbaree (Eds.), *Marshall, William L [Ed]; Laws, D* (pp. 343–361). Boston, MA: Springer.

Quinsey, V. L., Harris, G. T., Rice, M. E., & Lalumiere, M. L. (1993). Assessing Treatment Efficacy in Outcome Studies of Sex Offenders. *Journal of Interpersonal Violence*, 8(4), 512–523. <https://doi.org/10.1177/088626093008004006>

Quinsey, V. L., Rice, M. E., & Harris, G. T. (1995). Actuarial Prediction of Sexual Recidivism. *Journal of Interpersonal Violence*, 10(1), 85–105. <https://doi.org/10.1177/088626095010001006>

- Rettenberger, M., Briken, P., Turner, D., & Eher, R. (2015). Sexual offender recidivism among a population-based prison sample. *International Journal of Offender Therapy and Comparative Criminology*, 59(4), 424–444. <https://doi.org/10.1177/0306624X13516732>
- Rettenberger, M., & Craig, L. A. (2017). Actuarial Risk Assessment of Sexual Offenders. In D. P. Boer (Ed.), *The Wiley Handbook on the Theories, Assessment and Treatment of Sexual Offending* (1st ed., pp. 609–641). Chichester, UK: Wiley Blackwell.
- Rice, M. E., & Harris, G. T. (1995). Violent recidivism: assessing predictive validity. *Journal of Consulting and Clinical Psychology*, 63(5), 737–748. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/7593866>
- Rice, M. E., & Harris, G. T. (2005). Comparing effect sizes in follow-up studies: ROC area, Cohen's d, and r. *Law and Human Behavior*, 29(5), 615–620. <https://doi.org/10.1007/s10979-005-6832-7>
- Roy, K. (2005). Nobody can be a parent in here: Identity construction and institutional constraints on incarcerated fatherhood. In W. Marsiglio, K. Roy, & G. L. Fox (Eds.), *Situated fathering: A focus on physical and social spaces*. (pp. 163–186). Boulder, CO: Rowman & Littlefield.
- Schmucker, M., & Losel, F. (2005). The effectiveness of treatment for sexual offenders : A comprehensive meta-analysis, 117–146.
- Schmucker, M., & Lösel, F. (2015). The effects of sexual offender treatment on recidivism: an international meta-analysis of sound quality evaluations. *Journal of Experimental Criminology*, 11(4), 597–630. <https://doi.org/10.1007/s11292-015-9241-z>
- Sjöstedt, G., & Långström, N. (2001). Actuarial assessment of sex offender recidivism risk: a cross-validation of the RRASOR and the Static-99 in Sweden. *Law and Human Behavior*,

25(6), 629–645. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/11771638>

Skelton, A., Riley, D., Wales, D., & Vess, J. (2006). Assessing risk for sexual offenders in New Zealand: Development and validation of a computer-scored risk measure. *Journal of Sexual Aggression, 12*(3), 277–286. Retrieved from <http://www.tandfonline.com/doi/abs/10.1080/13552600601100326>

Skelton, A., & Vess, J. (2008). Risk of sexual recidivism as a function of age and actuarial risk. *Journal of Sexual Aggression, 14*(3), 199–209. <https://doi.org/10.1080/13552600802267098>

Steadman, H. J., & Cocozza, J. J. (1974). *Careers of the Criminally Insane: Excessive Social Control of Deviance*. Lexington: Lexington Books.

Stevens, C. D. J., Tan, L., & Grace, R. C. (2016). Socially desirable responding and psychometric assessment of dynamic risk in sexual offenders against children. *Psychology, Crime and Law, 22*(5), 420–434. <https://doi.org/10.1080/1068316X.2015.1120868>

Surjadi, B., Bullens, R., van Horn, J., & Bogaerts, S. (2010). Internet offending: Sexual and non-sexual functions within a Dutch sample. *Journal of Sexual Aggression, 16*(1), 47–58. <https://doi.org/10.1080/13552600903470054>

Tan, L., & Grace, R. C. (2008). Social Desirability and Sexual Offenders. *Sexual Abuse: A Journal of Research and Treatment, 20*(1), 61–87. <https://doi.org/10.1177/1079063208314820>

Thornton, D. (2002). Constructing and testing a framework for dynamic risk assessment. *Sexual Abuse of Research and Treatment, 14 SRC-*, 139–153.

Tomak, S. (2009). An empirical study of the personality characteristics of internet sex offenders. *Journal of Sexual ...*, (October 2012), 37–41. Retrieved from <http://www.tandfonline.com/doi/abs/10.1080/13552600902823063>

- Tully, R. J., Browne, K. D., & Craig, L. A. (2015). An Examination of the Predictive Validity of the Structured Assessment of Risk and Need–Treatment Needs Analysis (SARN-TNA) in England and Wales. *Criminal Justice and Behavior*, *42*(5), 509–528.
<https://doi.org/10.1177/0093854814553096>
- Turner, H. a, Finkelhor, D., & Ormrod, R. (2010). The effects of adolescent victimization on self-concept and depressive symptoms. *Child Maltreatment*, *15*(1), 76–90.
<https://doi.org/10.1177/1077559509349444>
- Varela, J. G., Boccaccini, M. T., Cuervo, V. A., Murrie, D. C., & Clark, J. W. (2014). Same score, different message: Perceptions of offender risk depend on static-99R risk communication format. *Law and Human Behavior*, *38*(5), 418–427. <https://doi.org/10.1037/lhb0000073>
- Vess, J., & Skelton, A. (2010). Sexual and violent recidivism by offender type and actuarial risk: reoffending rates for rapists, child molesters and mixed-victim offenders. *Psychology, Crime & Law*, *16*(7), 541–554. <https://doi.org/10.1080/10683160802612908>
- Wakeling, H., Beech, A. R., & Freemantle, N. (2013). Investigating treatment change and its relationship to recidivism in a sample of 3773 sex offenders in the UK. *Psychology, Crime and Law*, *19*(3), 233–252. <https://doi.org/10.1080/1068316X.2011.626413>
- Wakeling, H. C., Mann, R. E., & Carter, A. J. (2012). Do Low-risk Sexual Offenders Need Treatment? *Howard Journal of Criminal Justice*, *51*(3), 286–299.
<https://doi.org/10.1111/j.1468-2311.2012.00718.x>
- Ward, T. (2002). Good lives and the rehabilitation of offenders: Promises and problems. *Aggression and Violent Behavior*, *7*(5), 513–528. [https://doi.org/10.1016/S1359-1789\(01\)00076-3](https://doi.org/10.1016/S1359-1789(01)00076-3)
- Ward, T., & Beech, A. R. (2004). The etiology of risk: A preliminary model. *Sexual Abuse : A*

Journal of Research and Treatment, 16(4), 1479–1484.

<https://doi.org/10.1001/jama.2013.279832>

Ward, T., & Marshall, W. L. (2004). Good lives, aetiology and the rehabilitation of sex offenders:

A bridging theory. *Journal of Sexual Aggression*, 10(2), 153–169.

<https://doi.org/10.1080/13552600412331290102>

Ward, T., & Maruna, S. (2007). *Rehabilitation* (Routledge). London.

Ward, T., Yates, P. M., & Willis, G. M. (2012). The good lives model and the risk need

responsivity model: A critical response to Andrews, Bonta, and Wormith (2011). *Criminal*

Justice and Behavior, 39(1), 94–110. <https://doi.org/10.1177/0093854811426085>

Webster, S. D., Mann, R. E., Carter, A. J., Long, J., Milner, R. J., O'Brien, M. D., ... Ray, N. L.

(2006). Inter-rater reliability of dynamic risk assessment with sexual offenders. *Psychology,*

Crime & Law, 12(4), 439–452. <https://doi.org/10.1080/10683160500036889>

Willis, G. M., Levenson, J. S., & Ward, T. (2010). Desistance and attitudes towards sex

offenders: Facilitation or hindrance? *Journal of Family Violence*, 25(6), 545–556.

<https://doi.org/10.1007/s10896-010-9314-8>

Wong, S. C. P., & Olver, M. E. (2010). Two treatment- and change-oriented risk assessment

tools: The Violence Risk Scale and the Violence Risk Scale-Sexual Offender Version. In K.

Otto & K. S. Douglas (Eds.), *Handbook of violence risk assessment tools* (pp. 121–146).

Abingdon, England: Routledge.

Wong, S. C. P., Olver, M. E., Nicholaichuk, T. P., & Gordon, A. (2003). *The Violence Risk Scale-*

Sexual Offender Version (VRS-SO). Saskatoon, Canada: Regional Psychiatric Centre and

University of Saskatchewan.

Wormith, J. S., Hogg, S., & Guzzo, L. (2012). The Predictive Validity of a General Risk/Needs

Assessment Inventory on Sexual Offender Recidivism and an Exploration of the Professional Override. *Criminal Justice and Behavior*, 39(12), 1511–1538.

<https://doi.org/10.1177/0093854812455741>

Wortley, R. K., & Smallbone, S. W. (2006). Applying situational principles to sexual offending against children. *Situational Prevention of Child Abuse, Crime Prevention Studies Vol. 19*, 1968(July 2016), 7–37.

Zgoba, K. M., Miner, M. H., Knight, R., Letourneau, E. J., Levenson, J. S., & Thornton, D. (2012). *A multi-site recidivism study using Static-99R and Static-2002R risk scores and tier guidelines from the Adam Walsh Act*. Washington DC.

Zimring, F. E., Jennings, W. G., Piquero, A. R., & Hays, S. (2009). Investigating the continuity of sex offending: Evidence from the second Philadelphia Birth Cohort. *Justice Quarterly*, 26(1), 58–76. <https://doi.org/10.1080/07418820801989734>

Appendix 1

List of Queries in the Databases (alphabetical order)

DOB and Release Dates
Index Hearing Dates
Index Offences
Index Offences Count
List of Female Vic Preference
List of Index Violence
List of Intra-familial Offences
List of Male Vic Preference
List of Male Victims
List of Non-contact Convictions
List of Post Gen Convictions
List of Post Sex (overseas)
List of Post Sex Charges
List of Post Sex Convictions
List of Post Viol Convictions
List of Prior Driving/Admin Offences
List of Prior Drug Offences
List of Prior Property Offences
List of Prior SC: Bestiality
List of Prior SC: F<12
List of Prior SC: F<16
List of Prior SC: F>16
List of Prior SC: F 12-16
List of Prior SC: Incest
List of Prior SC: M<12
List of Prior SC: M<16
List of Prior SC: M<16 2322
List of Prior SC: M<16 2324
List of Prior SC: M<16 2431
List of Prior SC: M<16 2441
List of Prior SC: M<16 2443
List of Prior SC: M>16
List of Prior SC: M 12-16
List of Prior SC: Other
List of Prior SC: Other Contact
List of Prior SC: Porn/NC
List of Prior SC: SubVictim
List of Prior SC: Victim<16
List of Prior Sentencing Dates
List of Prior Sex Off (overseas)

List of Prior Sex Offences
List of Prior Violent Convictions
List of Sentencing Dates Prior to Index
Number of Female Vic Preference
Number of Index Violent
Number of Intra-familial
Number of Male Vic Pref
Number of Male Victims
Number of Non-contact Convictions
Number of Post Other
Number of Post Sex Charges
Number of Post Sex Convictions
Number of Post Viol
Number of Prior Driving/Admin Offences
Number of Prior Drug Offences
Number of Prior Property Offences
Number of Prior SC: Bestiality
Number of Prior SC: F<12
Number of Prior SC: F<16
Number of Prior SC: F>16
Number of Prior SC: F 12-16
Number of Prior SC: Incest
Number of Prior SC: M<12
Number of Prior SC: M<16
Number of Prior SC: M<16 2322
Number of Prior SC: M<16 2324
Number of Prior SC: M<16 2431
Number of Prior SC: M<16 2441
Number of Prior SC: M<16 2443
Number of Prior SC: M>16
Number of Prior SC: M 12-16
Number of Prior SC: Other
Number of Prior SC: Other Contact
Number of Prior SC: Porn/NC
Number of Prior SC: SubVictim
Number of Prior SC: Victim<16
Number of Prior Sentencing Dates
Number of Prior Sex Off (overseas)
Number of Prior Sex Offences
Number of Prior Violent Convictions
Offence Codes

Appendix 2**List of Sexual Offence Codes (numerical order)**

- 2110 RAPE
- 2112 RAPES FEMALE UNDER 16(OTHWPN INVOLVED)
- 2115 RAPES FEMALE OVER 16(OTHWPN INVOLVED)
- 2116 RAPES FEMALE OV 16(NO WPN INVOLVED)
- 2119 OTHER RAPE
- 2122 ATTMPT RAPE/ASS INTENT RAPE(OTHWPEAP)
- 2129 OTHER ATTMPT RAPE/ASSLT INTENT RAPE
- 2131 ABDUCTS FOR SEX (FEMALE CHILD)
- 2132 ABDUCTS FOR SEX (FEMALE)
- 2139 OTHER ABDUCTION FOR SEX
- 2140 INDECENT ASSAULTS
- 2141 INDECENTLY ASSAULTS FEMALE UNDER 12
- 2142 INDECENTLY ASSAULTS FEMALE 12-16
- 2143 INDECENTLY ASSAULTS FEMALE OVER 16
- 2144 INDECENT ASSAULT ON BOY UNDER 12
- 2145 INDECENT ASSAULT ON BOY BETWEEN 12 AND 16
- 2146 INDECENT ASSAULT ON MAN/BOY OVER 16
- 2149 OTHER INDECENT ASSAULT
- 2151 MALE RAPES FEMALE (WEAPON)
- 2152 MALE RAPES FEMALE (NO WEAPON)
- 2155 UNLAWFUL SEXUAL CONNECTION (WEAPON)
- 2156 UNLAWFUL SEXUAL CONNECTION (NO WEAPON)
- 2159 OTHER SEXUAL VIOLATION OFFENCES
- 2161 ATTEMPT SEXUAL VIOLATION (WEAPON)
- 2162 ATTEMPT SEXUAL VIOLATION (NO WEAPON)
- 2166 ASL INT COM SEXUAL VIOLATION (NO WEAPON)
- 2169 OTHER ATTEMP TO COMMIT SEXUAL VIOLATION
- 2191 DOES INDECENT ACT WITH/UPON BOY UNDER 12
- 2192 INDUCE/PERMIT BOY UNDER 12 DO INDECNT ACT
- 2193 DOES INDECENT ACT WITH/UPON BOY 12 TO 16
- 2194 INDUCE/PERMIT BOY 12-16 DO INDECENT ACT
- 2196 ANAL INTERCOURSE WITH ANY PERSON UNDER 16
- 2199 OTH OFFENCE HOMOSEXUAL LAW REFRM ACT 1986
- 2210 INDECENT PERFORMANCES AND ACTS ETC
- 2213 INDECENT ACT INTENT TO INSULT(MALE)
- 2214 INDECENT ACT INTENT TO INSULT(FEMALE)
- 2215 INDECENT ACT (MALE OFFENDER)

2219 OTHER INDECENT PERFORMANCES/ACTS
2220 OBSCENE EXPOSURE
2221 OBSCENELY EXPOSES PERSON IN PUBLIC
2229 OTHER OBSCENE EXPOSURE
2310 INCEST
2311 FATHER INCEST DAUGHTER
2312 BROTHER INCEST SISTER
2313 OTHER INCEST OTHER RELATIVE
2319 OTHER INCEST
2321 SODOMY WITH FEMALE
2322 SODOMY WITH MALE UND 16(OFF OVER 21)
2323 SODOMY WITH MALE OV 16(OFF OVER 21)
2324 SODOMY WITH MALE UND 16(OFF UNDER 21
2329 OTHER SODOMY OFFENCES
2411 SEXUAL INTERCOURSE GIRL UNDER 12
2412 SEXUAL INTERCOURSE GIRL 12 TO 16
2413 SEXUAL INTERCOURSE GIRL UNDER CARE ETC
2419 OTHER UNLAWFUL SEXUAL INTERCOURSE
2421 ATT SEXUAL INTERCOURSE GIRL UNDER 12
2422 ATT SEXUAL INTERCOURSE GIRL 12 - 16
2423 ATT SEXUAL INTERCOURSE GIRL UNDER CARE
2429 OTHER ATTEMPTED UNL SEXUAL INTERCOURSE
2431 MALE INDECENTLY ASSAULTS BOY UNDER 16
2432 MALE INDECENTLY ASSAULTS MALE OVER 16
2433 FEMALE INDECENTLY ASSAULTS GIRL UND 12
2434 FEMALE INDECENTLY ASSAULTS GIRL 12-16
2435 FEMALE INDECENTLY ASSAULTS FEMALE > 16
2439 OTHER INDECENT ASSAULT
2440 INDECENCY
2441 DOES INDECENT ACT MALE WITH BOY < 16
2442 DOES INDECENT ACT MALE WITH MALE > 16
2443 PERMITS INDECENT ACT MALE - BOY < 16
2444 PERMITS INDCENT ACT MALE-MALE > 16
2449 OTHER INDECENCY
2451 DOES INDECENT ACT MALE WITH GIRL < 12
2452 DOES INDECENT ACT MALE - GIRL 12-16
2453 PERMITS INDECENT ACT MALE-GIRL < 12
2454 PERMITS INDECENT ACT MALE-GIRL 12 - 16
2459 OTHER INDECENCY (MALE & FEMALE)
2461 BROTHEL KEEPING MANAGING ETC
2463 LIVING ON EARNINGS OF PROSTITUTION
2464 PROSTITUTE SOLICITING

2466 PROCURING FOR SEXUAL INTERCOURSE
2469 OTHER BROTHELS/PROSTITUTION OFFENCES
2479 OTHER INDECENT PUBLICATIONS OFFENCES
2611 ABDUCT FOR SEX - GIRL UNDER 12
2612 ABDUCT FOR SEX GIRL 12 - 16
2619 OTHER ABDUCTION FOR SEX
2621 ABDUCTION FOR MARRIAGE - GIRL UNDER 12
2624 ABDUCTION FOR SEX - GIRL UNDER 12
2625 ABDUCTION FOR SEX - GIRL 12 - 16
2626 ABDUCTION FOR SEX - FEMALE OVER 16
2631 INDECENTLY ASSAULTS FEMALE UNDER 12
2632 INDECENTLY ASSAULTS FEMALE 12 - 16
2633 INDECENTLY ASSAULTS FEMALE OVER 16
2634 INDECENT ASSAULT ON BOY UNDER 12
2635 INDECENT ASSAULT ON BOY BETWEEN 12 - 16
2636 INDECENT ASSAULT ON MAN/BOY OVER 16
2639 OTHER INDECENT ASSAULT
2642 INDUCE SEX CONNECTN - FEMALE UNDER 12
2643 INDUCING SEXUAL CONNECTION-FEMALE 12-16
2649 OTHER INDUCING SEXUAL CONNECTION OFFENCES
2651 MALE RAPES FEMALE UNDER 12
2652 MALE RAPES FEMALE 12 - 16
2653 MALE RAPES FEMALE OVER 16
2654 HUSBAND RAPES WIFE
2655 UNLAWFUL SEXUAL CONECTION FEMALE UNDER 12
2656 UNLAWFUL SEXUAL CONNECTION FEMALE 12 - 16
2657 UNLAWFUL SEXUAL CONNECTION FEMALE OVER 16
2659 OTHER SEXUAL VIOLATION OFFENCES
2661 ATTEMPT TO RAPE FEMALE UNDER 12
2662 ATTEMPT TO RAPE - FEMALE 12 - 16
2663 ATTEMPT TO RAPE - FEMALE OVER 16
2664 ATTEMPT TO RAPE - SPOUSE
2665 ATTMPTD UNLAW SEX CONNECT-FEMALE UNDER 12
2666 ATTMPTD UNLAWFUL SEX CONNECT-FEMALE 12-16
2667 ATTEMPT UNLAW SEX CONNECT-FEMALE OVER 16
2669 OTH ATTEMPT COMMIT SEX VIOLATION OFFENCES
2671 ASSAULT INTENT COMIT RAPE-FEMALE UNDER 12
2672 ASSAULT INTENT COMMIT RAPE - FEMALE 12-16
2673 ASSAULT INTENT COMMIT RAPE-FEMALE OVER 16
2675 ASSLT INTNT COMIT SEX CONECT-FML UNDER 12
2676 ASSLT INTNT COMIT SEX CONECT-FML 12-16
2677 ASSLT INTNT COMIT SEX CONECT-FML OVER 16

2679 OTHER ASSAULT INTENT TO COMMIT SEX VIOLTN
2681 SEX INT CHILD UNDER CARE/PROTCTN UNDER 12
2682 SEX INT CHILD UNDER CARE/PROTCTN 12-16
2683 SEX INT CHILD UNDER CARE/PROTCTN 16-20
2685 ATTMPT SEX INT CHILD CARE/PROT 12-16
2689 OTH ATTMPT SEX INT OFFNC CHILD CARE/PROT
2691 ANAL INTERCOURSE WITH ANY PERSON UNDER 16
2692 ANAL INTRCOURSE WITH SEVERLY SUBNRML PRSN
2693 UNLAWFUL SEXUAL CONNECTION MALE UNDER 12
2694 UNLAWFUL SEXUAL CONNECTION MALE 12 TO 16
2695 UNLAWFUL SEXUAL CONNECTION MALE OVER 16
2696 ATTEMPTED U/L SEXUAL CONNECTN MALE UND 12
2697 ATTEMPTED U/L SEXUAL CONNECTN MALE 12-16
2698 ATTEMPTED U/L SEXUAL CONECTN MALE OVER 16
2699 OTHER SEXUAL OFFENCES AGAINST MALE VICTIM
2711 PARENT INCEST CHILD - UNDER 12
2712 PARENT INCEST CHILD - 12-16
2713 PARENT INCEST CHILD - OVER 16
2714 BROTHER INCEST SISTER - UNDER 12
2715 BROTHER INCEST SISTER - 12-16
2716 BROTHER INCEST SISTER - OVER 16
2719 OTHER INCEST
2722 INDECENCY WITH ANIMAL
2723 COMPELLING INDECENT ACT WITH ANIMAL
2731 SEXUAL CONNECTION DEPENDENT FAMILY MEMBER
2733 INDECENT ACT ON DEPENDENT FAMILY MEMBER
2741 MEET YOUNG PERSON FOLLOWING SEX GROOMING
2742 TRAVELS TO MEET YOUNG PERSON-SEX GROOMING
ARRANGES/PERSUADES TO MEET YOUNG PERSON SEX
2743 GROOMING
2811 SEXUAL INTERCOURSE WITH FEMALE UNDER 12
2812 SEXUAL INTERCOURSE WITH FEMALE 12-16
2815 SEX INTRCRSE SEVERELY SUBNL FML OVER 16
2816 SEXUAL CONNECTION WITH CHILD UNDER 12
2817 SEXUAL CONNECTION WITH YOUNG PERSON 12-16
2819 OTHER UNLAWFUL SEXUAL INTERCOURSE
2821 ATTEMPT SEX INTERCOURSE-FEMALE UNDER 12
2822 ATTEMPTED SEXUAL INTERCOURSE-FEMALE 12-16
2825 ATMPT SEX INTRCRSE SEVRLY SUBNL FML > 16
2827 ATMPT SEX CONNECTION WITH PERSON 12-16
2831 FEMALE INDECENTLY ASSAULTS GIRL UNDER 12
2832 FEMALE INDECENTLY ASSAULTS GIRL 12-16
2833 FEMALE INDECENTLY ASSAULTS GIRL OVER 16

2839 OTHER INDECENT ASSAULTS
2841 DOES INDECENT ACT UPON GIRL UNDER 12
2842 DOES INDECENT ACT UPON GIRL 12-16
2843 INDUCE INDECENT ACT - GIRL UNDER 12
2844 INDUCE INDECENT ACT - GIRL 12-16
2845 PERMIT INDECENT ACT - GIRL UNDER 12
2846 PERMIT INDECENT ACT - GIRL 12-16
2849 OTHER INDUCING/PERMITTING INDECENT ACT
2861 DOES INDECENT ACT MALE WITH GIRL UNDER 12
2862 DOES INDECENT ACT MALE WITH GIRL 12-16
2863 PERMIT INDECENT ACT MALE WITH GIRL UNDER 12
2864 PERMITS INDECENT ACT MALE WITH GIRL 12-16
2869 OTHER INDECENCY (MALE-FEMALE)
2870 INDECENCY (MALE-MALE)
2871 DOES INDECENT ACT WITH/UPON BOY UNDER 12
2872 INDUCE/PERMT BOY UNDER 12 DO INDECENT ACT
2873 DOES INDECENT ACT WITH/UPON BOY 12-16
2874 INDUCE/PERMIT BOY 12-16 DO INDECENT ACT
2875 INDECNT ASSAULT MALE>16 FRAUD OBTN CONSNT
2913 LIVING ON EARNINGS OF PROSTITUTION
2914 PROSTITUTE SOLICITING
2922 KNOWINGLY EXHBT/DISPLY INDECENT DOCUMENT
2929 OTHER INDECENT PUBLICATIONS OFFENCES
2951 SEXUAL CONDUCT WITH CHILD/YOUNG PERSON OUTSIDE NZ
2961 MADE/COPIED/SUPPLIED OBJECTIONABLE PUBL.
2962 KNOWINGLY MADE/COPIED ETC OBJECTIONAB PUB
2965 SUPPLD ETC OBJECTABLE PUBLCTN UND 18
2966 EXHIBITED ETC OBJECTIONABLE PUBL UNDER 18
2968 POSSESS OBJECTIONABLE PUBLICATION
2991 MADE AN INTIMATE VISUAL RECORDING
2999 OTHER SEXUAL OFFENCES

Appendix 3**Offence Code Breakdown into Sexual Offence Subtypes****Contact - Female < 12**

2411 SEXUAL INTERCOURSE GIRL UNDER 12
2421 ATT SEXUAL INTERCOURSE GIRL UNDER 12
2611 ABDUCT FOR SEX - GIRL UNDER 12
2624 ABDUCTION FOR SEX - GIRL UNDER 12
2651 MALE RAPES FEMALE UNDER 12
2661 ATTEMPT TO RAPE FEMALE UNDER 12
2671 ASSAULT INTENT COMIT RAPE-FEMALE UNDER 12
2811 SEXUAL INTERCOURSE WITH FEMALE UNDER 12
2821 ATTEMPT SEX INTERCOURSE-FEMALE UNDER 12
2141 INDECENTLY ASSAULTS FEMALE UNDER 12
2631 INDECENTLY ASSAULTS FEMALE UNDER 12
2831 FEMALE INDECENTLY ASSAULTS GIRL UNDER 12
2642 INDUCE SEX CONNECTN - FEMALE UNDER 12
2655 UNLAWFUL SEXUAL CONECTION FEMALE UNDER 12
2665 ATTMPTD UNLAW SEX CONNECT-FEMALE UNDER 12
2675 ASSLT INTNT COMIT SEX CONECT-FML UNDER 12
2433 FEMALE INDECENTLY ASSAULTS GIRL UND 12
2451 DOES INDECENT ACT MALE WITH GIRL < 12
2453 PERMITS INDECENT ACT MALE-GIRL < 12
2841 DOES INDECENT ACT UPON GIRL UNDER 12
2843 INDUCE INDECENT ACT - GIRL UNDER 12
2845 PERMIT INDECENT ACT - GIRL UNDER 12
2861 DOES INDECENT ACT MALE WITH GIRL UNDER 12
2863 PERMIT INDECENT ACT MALE WITH GIRL UNDER 12

Contact - Female 12-16

2412 SEXUAL INTERCOURSE GIRL 12 TO 16
2422 ATT SEXUAL INTERCOURSE GIRL 12 - 16
2434 FEMALE INDECENTLY ASSAULTS GIRL 12-16
2612 ABDUCT FOR SEX GIRL 12 - 16
2625 ABDUCTION FOR SEX - GIRL 12 - 16
2652 MALE RAPES FEMALE 12 - 16
2662 ATTEMPT TO RAPE - FEMALE 12 - 16
2672 ASSAULT INTENT COMMIT RAPE - FEMALE 12-16
2812 SEXUAL INTERCOURSE WITH FEMALE 12-16
2142 INDECENTLY ASSAULTS FEMALE 12-16

2632 INDECENTLY ASSAULTS FEMALE 12 - 16
2832 FEMALE INDECENTLY ASSAULTS GIRL 12-16
2643 INDUCING SEXUAL CONNECTION-FEMALE 12-16
2656 UNLAWFUL SEXUAL CONNECTION FEMALE 12 - 16
2666 ATTEMPTED UNLAWFUL SEX CONNECTION-FEMALE 12-16
2676 ATTEMPT INTENT COMMIT SEX CONNECTION-FEMALE 12-16
2817 SEXUAL CONNECTION WITH YOUNG PERSON 12-16
2827 ATTEMPT SEX CONNECTION WITH PERSON 12-16
2452 DOES INDECENT ACT MALE - GIRL 12-16
2454 PERMITS INDECENT ACT MALE-GIRL 12 - 16
2842 DOES INDECENT ACT UPON GIRL 12-16
2844 INDUCE INDECENT ACT - GIRL 12-16
2846 PERMIT INDECENT ACT - GIRL 12-16
2862 DOES INDECENT ACT MALE WITH GIRL 12-16
2864 PERMITS INDECENT ACT MALE WITH GIRL 12-16

Contact - Female < 16

2112 RAPES FEMALE UNDER 16(OTHER PERSON INVOLVED)
2131 ABDUCTS FOR SEX (FEMALE CHILD)

Contact - Female > 16

2115 RAPES FEMALE OVER 16(OTHER PERSON INVOLVED)
2116 RAPES FEMALE OVER 16(NO OTHER PERSON INVOLVED)
2143 INDECENTLY ASSAULTS FEMALE OVER 16
2435 FEMALE INDECENTLY ASSAULTS FEMALE > 16
2626 ABDUCTION FOR SEX - FEMALE OVER 16
2633 INDECENTLY ASSAULTS FEMALE OVER 16
2653 MALE RAPES FEMALE OVER 16
2654 HUSBAND RAPES WIFE
2657 UNLAWFUL SEXUAL CONNECTION FEMALE OVER 16
2663 ATTEMPT TO RAPE - FEMALE OVER 16
2664 ATTEMPT TO RAPE - SPOUSE
2667 ATTEMPT UNLAW SEX CONNECTION-FEMALE OVER 16
2677 ATTEMPT INTENT COMMIT SEX CONNECTION-FEMALE OVER 16
2833 FEMALE INDECENTLY ASSAULTS GIRL OVER 16
2673 ASSAULT INTENT COMMIT RAPE-FEMALE OVER 16

Contact - Male < 12

2144 INDECENT ASSAULT ON BOY UNDER 12
2634 INDECENT ASSAULT ON BOY UNDER 12
2693 UNLAWFUL SEXUAL CONNECTION MALE UNDER 12
2696 ATTEMPTED UNDER 12 SEXUAL CONNECTION MALE UNDER 12
2191 DOES INDECENT ACT WITH/UPON BOY UNDER 12

2192 INDUCE/PERMIT BOY UNDER 12 DO INDECNT ACT
2871 DOES INDECENT ACT WITH/UPON BOY UNDER 12
2872 INDUCE/PERMT BOY UNDER 12 DO INDECENT ACT

Contact - Male 12-16

2145 INDECENT ASSAULT ON BOY BETWEEN 12 AND 16
2635 INDECENT ASSAULT ON BOY BETWEEN 12 - 16
2694 UNLAWFUL SEXUAL CONNECTION MALE 12 TO 16
2697 ATTEMPTED U/L SEXUAL CONNECTN MALE 12-16
2193 DOES INDECENT ACT WITH/UPON BOY 12 TO 16
2194 INDUCE/PERMIT BOY 12-16 DO INDECENT ACT
2873 DOES INDECENT ACT WITH/UPON BOY 12-16
2874 INDUCE/PERMIT BOY 12-16 DO INDECENT ACT

Contact - Male < 16

2322 SODOMY WITH MALE UND 16(OFF OVER 21)
2324 SODOMY WITH MALE UND 16(OFF UNDER 21)
2431 MALE INDECENTLY ASSAULTS BOY UNDER 16
2441 DOES INDECENT ACT MALE WITH BOY < 16
2443 PERMITS INDECENT ACT MALE - BOY < 16

Contact - Male > 16

2146 INDECENT ASSAULT ON MAN/BOY OVER 16
2432 MALE INDECENTLY ASSAULTS MALE OVER 16
2442 DOES INDECENT ACT MALE WITH MALE > 16
2444 PERMITS INDCENT ACT MALE-MALE > 16
2636 INDECENT ASSAULT ON MAN/BOY OVER 16
2695 UNLAWFUL SEXUAL CONNECTION MALE OVER 16
2698 ATTEMPTED U/L SEXUAL CONECTN MALE OVER 16
2323 SODOMY WITH MALE OV 16(OFF OVER 21)

Victim < 16

2196 ANAL INTERCOURSE WITH ANY PERSON UNDER 16
2413 SEXUAL INTERCOURSE GIRL UNDER CARE ETC
2423 ATT SEXUAL INTERCOURSE GIRL UNDER CARE
2681 SEX INT CHILD UNDER CARE/PROTCTN UNDER 12
2682 SEX INT CHILD UNDER CARE/PROTCTN 12-16
2685 ATTMPT SEX INT CHILD CARE/PROT 12-16
2689 OTH ATTMPT SEX INT OFFNC CHILD CARE/PROT
2691 ANAL INTERCOURSE WITH ANY PERSON UNDER 16
2816 SEXUAL CONNECTION WITH CHILD UNDER 12
2817 SEXUAL CONNECTION WITH YOUNG PERSON 12-16
2827 ATMPT SEX CONNECTION WITH PERSON 12-16

- 2951 SEXUAL CONDUCT WITH CHILD/YOUNG PERSON OUTSIDE NZ
- 2621 ABDUCTION FOR MARRIAGE - GIRL UNDER 12

Incest

- 2310 INCEST
- 2311 FATHER INCEST DAUGHTER
- 2312 BROTHER INCEST SISTER
- 2313 OTHER INCEST OTHER RELATIVE
- 2319 OTHER INCEST
- 2711 PARENT INCEST CHILD - UNDER 12
- 2712 PARENT INCEST CHILD - 12-16
- 2713 PARENT INCEST CHILD - OVER 16
- 2714 BROTHER INCEST SISTER - UNDER 12
- 2715 BROTHER INCEST SISTER - 12-16
- 2716 BROTHER INCEST SISTER - OVER 16
- 2719 OTHER INCEST
- 2731 SEXUAL CONNECTION DEPENDENT FAMILY MEMBER
- 2733 INDECENT ACT ON DEPENDENT FAMILY MEMBER

Other Contact Offences

- 2110 RAPE
- 2119 OTHER RAPE
- 2122 ATTMPT RAPE/ASS INTENT RAPE(OTHWEAP)
- 2129 OTHER ATTMPT RAPE/ASSLT INTENT RAPE
- 2132 ABDUCTS FOR SEX (FEMALE)
- 2139 OTHER ABDUCTION FOR SEX
- 2140 INDECENT ASSAULTS
- 2149 OTHER INDECENT ASSAULT
- 2151 MALE RAPES FEMALE (WEAPON)
- 2152 MALE RAPES FEMALE (NO WEAPON)
- 2155 UNLAWFUL SEXUAL CONNECTION (WEAPON)
- 2156 UNLAWFUL SEXUAL CONNECTION (NO WEAPON)
- 2159 OTHER SEXUAL VIOLATION OFFENCES
- 2161 ATTEMPT SEXUAL VIOLATION (WEAPON)
- 2162 ATTEMPT SEXUAL VIOLATION (NO WEAPON)
- 2166 ASL INT COM SEXUAL VIOLATION (NO WEAPON)
- 2169 OTHER ATTEMP TO COMMIT SEXUAL VIOLATION
- 2210 INDECENT PERFORMANCES AND ACTS ETC
- 2213 INDECENT ACT INTENT TO INSULT(MALE)
- 2214 INDECENT ACT INTENT TO INSULT(FEMALE)
- 2215 INDECENT ACT (MALE OFFENDER)
- 2321 SODOMY WITH FEMALE
- 2329 OTHER SODOMY OFFENCES

2419 OTHER UNLAWFUL SEXUAL INTERCOURSE
 2429 OTHER ATTEMPTED UNL SEXUAL INTERCOURSE
 2439 OTHER INDECENT ASSAULT
 2440 INDECENCY
 2449 OTHER INDECENCY
 2459 OTHER INDECENCY (MALE & FEMALE)
 2619 OTHER ABDUCTION FOR SEX
 2639 OTHER INDECENT ASSAULT
 2649 OTHER INDUCING SEXUAL CONNECTION OFFENCES
 2659 OTHER SEXUAL VIOLATION OFFENCES
 2669 OTH ATTEMPT COMMIT SEX VIOLATION OFFENCES
 2679 OTHER ASSAULT INTENT TO COMMIT SEX VIOLTN
 2699 OTHER SEXUAL OFFENCES AGAINST MALE VICTIM
 2819 OTHER UNLAWFUL SEXUAL INTERCOURSE
 2839 OTHER INDECENT ASSAULTS
 2849 OTHER INDUCING/PERMITTING INDECENT ACT
 2869 OTHER INDECENCY (MALE-FEMALE)
 2870 INDECENCY (MALE-MALE)
 2683 SEX INT CHILD UNDER CARE/PROTCTN 16-20

Pornography/Non-contact

2219 OTHER INDECENT PERFORMANCES/ACTS
 2220 OBSCENE EXPOSURE
 2221 OBSCENELY EXPOSES PERSON IN PUBLIC
 2229 OTHER OBSCENE EXPOSURE
 2466 PROCURING FOR SEXUAL INTERCOURSE
 2479 OTHER INDECENT PUBLICATIONS OFFENCES
 2922 KNOWINGLY EXHBT/DISPLY INDECENT DOCUMENT
 2929 OTHER INDECENT PUBLICATIONS OFFENCES
 2961 MADE/COPIED/SUPPLIED OBJECTIONABLE PUBL.
 2962 KNOWINGLY MADE/COPIED ETC OBJECTIONAB PUB
 2965 SUPPLD ETC OBJECTABLE PUBLCTN UND 18
 2966 EXHIBITED ETC OBJECTIONABLE PUBL UNDER 18
 2968 POSSESS OBJECTIONABLE PUBLICATION
 2991 MADE AN INTIMATE VISUAL RECORDING
 2741 MEET YOUNG PERSON FOLLOWING SEX GROOMING
 2742 TRAVELS TO MEET YOUNG PERSON-SEX GROOMING
 2743 ARRANGES/PERSUADES TO MEET YOUNG PERSON SEX GROOMING

Bestiality

2722 INDECENCY WITH ANIMAL
 2723 COMPELLING INDECENT ACT WITH ANIMAL

Subnormal Victim

2692 ANAL INTRCOURSE WITH SEVERLY SUBNRML PRSN

2815 SEX INTRCRSE SEVERELY SUBNL FML OVER 16

2825 ATMPT SEX INTRCRSE SEVRLY SUBNL FML > 16

Other Offences

2199 OTH OFFENCE HOMOSEXUAL LAW REFRM ACT 1986

2461 BROTHEL KEEPING MANAGING ETC

2463 LIVING ON EARNINGS OF PROSTITUTION

2464 PROSTITUTE SOLICITING

2469 OTHER BROTHELS/PROSTITUTION OFFENCES

2913 LIVING ON EARNINGS OF PROSTITUTION

2914 PROSTITUTE SOLICITING

2999 OTHER SEXUAL OFFENCES