A Comparison of Offence History and Post-Release Outcomes for Sexual Offenders Against Children in New Zealand Who Attended or Did Not Attend the Kia Marama Special Treatment Unit

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Abstract

Sexual offending against children is among the most serious of crimes, and so it is imperative to have empirical evidence that prison-based treatment programmes for such offenders are successful in reducing the likelihood of future recidivism. The present study examined the criminal history and post-release outcomes for sexual offenders against children who had attended the Kia Marama Special Treatment Unit (STU; treated group; $N = 428$) and were followed up for an average of 6.36 years, and a cohort of offenders who were also incarcerated for sexual offending against children but did not attend Kia Marama or a similar STU (untreated group; $N = 1956$) and were followed up for an average of 6.81 years. During the follow-up, rates of recidivism (defined as a charge for a new offence) for the untreated and treated groups, respectively were: 7.52% and 7.24% (sexual); 18.35% and 10.28% (violent); and 38.24% and 32.71% (general). There were significant differences between the groups in terms of offence history: The treated group had more prior sexual offences, more prior sentencing dates, more non-contact offences, was more likely to have had a male victim, a longer sentence duration, and an overall higher static risk score, whereas the untreated group were more likely to be young (< 25 years at release) and had more prior violent convictions. To control for differences in risk level between the two groups, we used stepwise logistic regression to develop predictive models for recidivism, and then tested whether treatment group was related to recidivism. Because the design was unbalanced and groups were heterogeneous, to obtain the best estimate of model coefficients we used a differential weighting factor that compensated for the unequal group sizes. Results showed that the treatment group was associated with a significant reduction in sexual, violent and general recidivism. The estimated coefficient for the treatment group indicated a 29.4% reduction in sexual recidivism (odds ratio [OR] = .706), a 49.3% reduction in violent recidivism (OR = .507) and a 27.6% reduction in general recidivism (OR = .724). This result implies that the expected sexual recidivism rate of the treated group would have been 10.0% rather than 7.2% had they not attended the STU. The present findings update previous results of Marentette (2009) with a more comprehensive sample, and add to the growing evidence for the effectiveness of cognitive-behavioural and relapse-prevention-based treatment for sexual offenders against children. Our results provide

further evidence of the effectiveness of the Kia Marama STU (see also Beggs & Grace, 2011) and endorse the utility of such programmes for reducing sexual offending against children in New Zealand.

Chapter 1: Introduction

Sexual offending against children is deemed, both legally and morally, to be among the most serious of crimes, and must be addressed accordingly. Compared to the general criminal population, the number of sexual offenders against children is relatively low, for example, all sexual offences represent less than 1% of the total crimes recorded each year by the police in England and Wales (Friendship, Mann & Beech, 2003). The recidivism rates for sexual offenders (i.e., the percentage of sexual offenders who are reconvicted for a new sexual offence) are also low in comparison to non-sexual offences, ranging from 5-15% on average over a period of 5-10 years. (Craig, Thornton, Beech & Browne, 2007; Hanson & Harris, 2001; Mann, Hanson & Thornton, 2010). Conversely, the percentage of violent offenders who are reconvicted of a new violent offence within 10 years ranges from 24-43% (Harris, Rice & Cormier, 1991; Rice & Harris, 1995; Girard & Wormith, 2004). However, these offences are extremely harmful and traumatic to the victims. It has been found that children who are sexually abused demonstrated high levels of post-traumatic stress disorder (PTSD) symptoms, alongside levels of depression and self-esteem issues that are much higher than seen in children who have not been victimised (Boney-McCoy & Finkelhor, 1996; Turner, Finkelhor & Ormond, 2010) Turner and colleagues (2010) also suggested that sexual victimisation may have more profound effects on self-esteem over and above any other type of victimisation (e.g. physical violence).In addition, it is estimated that the number of offences reported to the authorities are a mere fraction of the actual offences that occur. Sexual offences may represent a very small percentage of reported crimes, but a recent anonymous survey in Ireland found that one in five females and one in ten males reported being sexually abused before the age of 18 (McGee, O'Higgins, Garavan & Conroy, 2011). This indicates a large discrepancy between the actual and reported rates of sexual offences against children. For these reasons, there is great concern about appropriate management of sexual offenders to keep those at greatest risk of reoffending away from potential victims, and finding a successful treatment that will reduce the likelihood of sexual recidivism.

There has been substantial research in recent years on both classifying the recidivism risk of sexual offenders against children and whether treatment can be successful. This research has been carried out in the U.S, Canada, the U.K, Australia,

New Zealand and Europe (McGrath, Hoke & Vojtisek, 1998; Barbaree, Seto, Langton & Peacock, 2001; Friendship et al., 2003; Beech, Friendship, Erikson & Hanson, 2002; Beggs & Grace, 2011). Some of the most prominent research has been done in New Zealand, with the focus being on the Kia Marama Treatment Unit in Christchurch; a specialized treatment unit for sexual offenders against children (Bakker, Hudson, Wales & Riley, 1998; Hudson, Wales, Bakker & Ward, 2002; Marentette, 2009).

Out of the individual studies and meta-analyses published on sex offenders against children worldwide, some have shown positive results for treatment, with regard to recidivism rates post-release (McGrath et al., 1998; Hanson, Gordon, Harris, Marques, Quinsey & Seto, 2002; Hanson, Bourgon, Helmus & Hodgson, 2009; Beggs & Grace, 2011), while others show no significant impact of treatment (Friendship et al., 2003; Marques, Wiederanders, Day, Nelson & Ommeren, 2005; Marentette, 2009). Some notable studies will be evaluated in this chapter.

Whether studies have found positive or negative results for sexual offender treatment, most of them suffer from methodological flaws or issues inherent to assessing treatment efficacy for sex offenders against children. All of these issues will be discussed, but the most important issue is the difficulty of finding a true comparison group to use when assessing treatment efficacy. This issue is one of the driving reasons behind the current research; examining the characteristics of offenders who do receive treatment compared to the offenders who do not receive treatment to observe whether a suitable comparison group is possible within the available offender population. This examination will also allow for a more robust assessment of treatment efficacy at Kia Marama Treatment Unit; to see whether treated offenders have a lower rate of recidivism after any observed differences in risk level (obtained through examining the offender characteristics) were controlled for.

The current research follows on from previous evaluations of Kia Marama by Bakker et al., (1998) and Marentette (2009). The contributions of these evaluations to the current research and to the study of sex offender treatment will be reviewed in depth.

This chapter will begin by briefly presenting the characteristics of sex offenders against children. The previous literature on the risk assessment and treatment for sexual offenders against children, and the inherent problems in

evaluating treatment efficacy will then be discussed, before looking specifically at previous studies of Kia Marama and finally introducing the current research.

Sex offenders against children: a distinct population

The concept that sexual offenders are a distinct population has been studied in depth, with some support being found for type-specific offending. Hanson, Scott and Steffy (1995) followed a sample of 191 child molesters and a sample of 137 non-sexual criminals for a period of between 15 and 30 years. The overall rate of sexual recidivism was 36.5%, with almost all of the sexual recidivism committed by the child molesters; 96% as opposed to 4% by the non-sexual criminals. Similarly, almost all of the violent recidivism was committed by the non-sexual criminals; 32.8% of the non-sexual criminals violently reoffended, as opposed to 1% of the sexual criminals. In general, the rates of sexual recidivism for sex offenders are notably lower than rates of general and violent recidivism for non-sexual offenders, with most studies demonstrating between 5 and 15% of child molesters sexually reoffending within 5 years (Hanson, 2000; Hanson, 2002; Hudson et al., 2002; Friendship et al.; Allan, Grace, Rutherford & Hudson, 2007). In comparison, studies have found the recidivism rates for non-sexual crimes to be as high as 82.5% (Hanson et al., 1995). These statistics imply that the offence processes are heterogeneous for different types of offenders, and that those convicted of sexual crimes may represent a special subtype of offender.

In addition, there is substantial evidence that child molesters have characteristics that separate them from other sex offenders, such as rapists. Multiple studies have found that child molesters are typically older, less educated, and have fewer criminal convictions for non-sexual crimes than rapists (Baxter, Marshall, Barbaree, Davidson & Malcolm, 1984; Hanson et al., 1995). There is also support for the theory that sexual deviance plays an important role in the make-up of a child molester, with child molesters exhibiting higher levels of sexual deviance than rapists or exhibitionists. Specifically, child molesters are more likely to demonstrate a sexual preference for pubescent or pre-pubescent children, usually measured using phallometric techniques (Baxter et al., 1984; Quinsey, Rice & Harris, 1995; Miner & Dwyer, 1997; Hanson & Harris, 2000; Hanson, 2002). Rapists will demonstrate a sexual preference for adult females or males, as opposed to children. However,

although most child molesters may display a sexual preference for children, there are those who display normative sexual tendencies (Baxter et al., 1984; Miner & Dwyer, 1997). Alongside a sexual preference for children, some child molesters have limited or non-existent interpersonal relationships with age-appropriate adults, displaying social and emotional difficulties and greater emotional identification with children (Miner & Dwyer, 1997). In addition, there is also evidence that paedophilia is associated with lower IQ and developmental cognitive problems that may stem from events such as childhood brain injury (Cantor, Blanchard, Robichaud & Christensen, 2005).

It is often found that rapists sexually reoffend more than child molesters, and reoffend quicker than child molesters (Quinsey et al., 1995). One meta-analysis by Hanson (2002) involving a combined sample of 9,454 sex offenders, found that it is child molesters who have higher rates of sexual recidivism, although the difference in percentage was not large; 17.1% for rapists and 19.5% for child molesters over an average follow-up period of almost 4 years (46 months). Rapists also commit more violent and non-sexual crime than child molesters. Hanson and Bussiére (1998) reviewed 61 studies involving almost 24,000 sex offenders and found that over an average follow-up period of 4.5 years, 22% of the rapists had committed a new violent offence, as opposed to 10% of the child molesters.

Some studies have also found differences between extra-familial child molesters and intra-familial child molesters (incest offenders). Incest offenders show sexual preferences similar to a normative adult, with less sexual deviance (Baxter et al., 1984; Miner & Dwyer, 1997, Hanson, 2002). Incest offenders also show less anti-social tendencies, and have lower recidivism rates than extra-familial child molesters and rapists (McGrath et al.; Hanson, 2002). The meta-analysis by Hanson (2002) found that over the 46-month follow-up period, extra-familial child molesters had a recidivism rate of 19.5%, whereas incest offenders had a recidivism rate of 8.4%.

The indication that there may be subtypes of offenders conflicts with Gottfredson and Hirschi's (1990) general theory of crime, suggesting that alternate strategies may be necessary for dealing effectively with different types of offenders. The differences in characteristics and recidivism rates between child molesters, other sex offenders and non-sexual criminals are very important to the application of risk assessment and treatment. The evidence above lends support to specialised risk assessment and treatment programmes for child molesters, as the risk factors and

offence process for child molesters may be different than those for other sex offenders, and certainly different in some aspects from non-sexual offenders. The next section of this chapter will outline the literature on the how risk assessment and treatment for sex offenders has developed, as well as discussing some issues related to assessing treatment efficacy for this specific group of offenders.

Risk assessment for sex offenders

        This section of the literature review will first cover the principles of risk assessment for offenders in general, before identifying the different risk factors which are important in the assessment of sex offenders. The development of risk assessment tools will then be reviewed, emphasising the risk assessment tools that are widely used in correctional practice to classify sex offenders for effective treatment and management.

The principles of risk assessment for correctional treatment

        Risk assessment is not only useful for making accurate judgements regarding the likelihood of recidivism for an offender, it is also an invaluable tool for guiding decisions about treatment. The key principles of risk, need and responsivity (RNR) were first introduced by Andrews, Bonta and Hoge (1990), who proposed that effective classification of an offender for correctional treatment purposes should be based on three principles. The risk principle involves calculating the risk level of the offender; both in terms of their likelihood of reoffending and the level of treatment they will require. High-risk offenders require longer, more intensive treatment, whereas low-risk offenders require minimal, if any, treatment. The need principle is concerned with criminogenic needs, or dynamic risk factors; factors that, when altered, will change the likelihood of recidivism. Criminogenic needs are situational factors or personality traits that are associated with recidivism, and are important for treatment planning. Effective treatment should target criminogenic needs to allow for a reduction in recidivism risk. The responsivity principle is concerned with ensuring that treatment is tailored to suit individual offenders. This is related to the style and method of delivery, taking in to account the cultural background and learning ability of the offender. Offenders must be able to understand and follow the elements of a treatment programme, otherwise there is no chance of success (Andrews et al., 1990,

Andrews & Bonta, 2006). For this reason, responsivity can be considered the most important principle, as even if the risk and need principles are addressed correctly, it will be in vain if the offender is not able to respond to the treatment.

Risk factors for sexual offending

There are many factors to consider when assessing the risk level of any offender that are associated with the probability of recidivism. Risk factors fall into two general categories: Static and dynamic. Static risk factors are unchangeable, historical factors, such as age and number of previous convictions. Dynamic risk factors are synonymous with criminogenic needs - malleable factors; amenable to change, such as antisocial attitudes and peers, drug or alcohol use and personality traits that support offending. Because dynamic risk factors are amenable to change, they are targeted in an effective treatment programme. Hanson (1997) proposed a further breakdown of dynamic risk factors into stable and acute risk factors. Stable factors are ubiquitous personality traits such as attitude towards offending, or deviant sexual preferences that require time to change, and do so gradually. Acute factors are situational, such as proximity to a potential victim, or level of intoxication, that can change very quickly from one moment to the next (Hanson, 1997; Hanson & Harris, 2000). Although both stable and acute factors may be equally important to the likelihood of recidivism, stable factors are much easier to target in treatment programmes and monitor post-release than acute factors (Hudson et al., 2002).

There are risk factors that are predictive of recidivism for all offenders, such as intoxication, age and number of previous convictions, although risk factors have been identified that are relevant only to sex offenders (Hanson & Harris, 2000; Barbaree et al., 2001). It is not surprising that such results have been found, considering the differences observed between sex offenders and non-sexual offenders that have been demonstrated previously. The most distinctive risk factor for sex offenders is sexual deviance, which is very apparent in child molesters, although rapists may have other elements of sexual deviance not related to sexual preference, such as arousal to sadistic or violent sexual images. Rapists employ more violence and force on their victims than child molesters (Quinsey et al., 1995; Hanson, 2002). The particular nature of sex offences (more so for child molesters) also allows the static risk factors to become more specialised with regard to personal and offence

history. For example, having no previous relationship to the victim, male victims and never marrying have all been identified as risk factors for sexual recidivism through multiple studies (Quinsey et al., 1995; Hanson & Harris, 2000; Beech et al., 2002). There are also psychological markers that have some empirical validity for sex offender recidivism, including emotional identification with children, justifications for offending (belief systems), poor problem-solving skills and other interpersonal problems (Hanson & Harris, 2000; Allan et al., 2007; Craig et al., 2007; Mann, Hanson & Thornton, 2010).

Empirically validated risk factors are used to create risk assessment tools that can be administered to an offender at multiple points during their time in the judicial system; on incarceration, when starting or leaving a treatment programme, at parole hearings and in community supervision. These tools may simply give a fixed prediction of recidivism, or provide information on treatment targets, offender management (both in prison and in the community) and change in risk of recidivism over time.

Risk assessment tools: First-generation through fourth-generation

The first risk assessment tools, now called first-generation risk assessment, were prevalent in the 1970s and earlier (Steadman & Cocozza, 1974). They focused solely on professional clinical judgement, with no consideration of empirically measured risk factors. An interview is carried out by a trained clinician, in which some psychological tests may be carried out, and a decision is made about the risk level of the offender, based on the interview components and the clinician's judgment. It has been consistently demonstrated over the last 50 years that actuarial prediction is superior to clinical prediction, and that informal, subjective nature of clinical judgment does not allow for consistent and reliable measurements of risk (Dawes, Faust & Meehl, 1989; Andrews & Bonta, 2006).

Second-generation risk assessment is actuarial, as opposed to clinical, meaning empirical, statistical measures are taken to determine the risk level of the offender. Statistical, empirically validated measures of risk have consistently proven to be more accurate at predicting risk level than clinical judgement (Hanson & Bussiere, 1998; Andrews, Bonta & Wormith, 2006). Actuarial procedures will always lead to the same conclusion for a given data set, whereas clinical judgement of a given

data set will be influenced by factors such as fatigue, minor alterations to the order of presented material and recent or memorable 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). Second-generation assessment does not give any information to the treatment provider on what needs to be targeted and what can be improved on through treatment. Without treatment targets identified for an individual offender, it is much harder successfully to reduce the risk of recidivism. Also, second-generation assessment does not allow for any change in the recidivism risk of an offender, as amount of time since offending, or undergoing treatment, will not alter the risk level calculated by static, historical variables.

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 the information on which criminogenic needs must be targeted during treatment. Risk assessment measures that use both static and dynamic factors have greater utility and have proven to be effective at predicting initial risk level (Kroner & Mills, 2001; Gendreau, Goggin & Smith, 2002; Andrews et al., 2006). A well-researched third-generation assessment tool for general offending is the Level of Service Inventory Revised (LSI-R), which consists of 54 separate items distributed over 10 subcomponents (e.g. Family/Marital, Criminal History and Pro-criminal Attitudes/Orientation) (Andrews & Bonta, 1995). The LSI-R exhibits moderate predictive accuracy, demonstrating AUC values between .64 and .73. (Andrews et al., 2006; an explanation of AUC values is given below). Using third-generation assessment measures allows risk assessment to inform level of risk, treatment targets and offender management, as opposed to level of risk alone.

Fourth-generation risk assessment is 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). 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. This is due to the fact that fourth-generation assessment allows a change in dynamic risk factors to be demonstrated, by proving that treatment targets have been met and that there has been a change in risk level during the course of treatment.

Risk assessment of sex offenders

The identification of sex offenders as a distinct group of offenders, with differences in 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; Hanson, 1997), the Static-99 (Hanson & Thornton, 2000), and the Sex Offender Risk Appraisal Guide (SORAG; Quinsey, Harris, Rice & Cormier, 1998). The Automated Sexual Recidivism Scale (ASRS; Skelton, Riley, Wales & Vess, 2006) is also widely used in New Zealand, where it was developed. As 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 is a combination of items from the RRASOR 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 (Hanson, 1997; Barbaree et al., 2001). The Static-99 is a ten-item scale centred on four domains: sexual deviance, range of potential victims, anti-sociability and persistence. 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. ROC methods provide information about whether the use of a given risk assessment measure is warranted, and also allow for comparisons on the predictive accuracy of different risk assessment measures (Rice & Harris, 1995). An ROC 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. The ROC 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 ROC AUC values between 0.71 and 0.76 for sexual recidivism, showing moderate predictive accuracy (Hanson & Thornton, 2000; Craig et al., 2004). 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 one of the most widely used assessment tools (Hanson, 2006; Allan et al., 2007).

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 molesters with a high risk of recidivism. The legislation meant there was an

increasing need to assess the risk level of large numbers of child molesters quickly and accurately (Skelton et al., 2006). The ASRS includes seven of the ten items from the Static-99, 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 ROC AUC values of 0.70 or above, establishing predictive accuracy similar to the Static-99 (Skelton et al., 2006). 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).

There are more recent risk assessments which include dynamic factors, such as the Sexual Violence Risk-20 (SVR-20; Boer, Wilson, Gauthier & Hart, 1997), the Sex Offender Need Assessment Rating (SONAR; Hanson & Harris, 2001) and the Violence Risk Scale – Sex Offender Version (VRS-SO; Wong, Olver, Nicholaichuk & Gordon, 2003).

Studies have found that including dynamic risk factors is beneficial to recidivism prediction for sex offenders, 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; Hanson & Harris, 2000; Craig et al., 2007; Olver, Wong, Nicholaichuk & Gordon, 2007). Hanson and Harris (2000) 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.

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 Canada's 2002 Safer

Society Survey, the Static-99 was the most common assessment measure, 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. 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). The other reason why actuarial assessments are 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, some actuarial measures, such as the ASRS, have been designed to be administered quickly and easily using only demographic and key offence history information. The fact that actuarial measures show moderate 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 risk assessment and treatment planning.

Although risk assessment can be done for multiple reasons (e.g., classification upon entering prison, parole hearings), a vital reason is to prepare an offender for treatment: The level of treatment required can be gauged, treatment targets can be identified, and post-treatment evaluations become possible. If treatment is successful, an offenders' risk of recidivism is reduced; therefore, providing treatment to suitable offenders is vital and developing effective treatment programmes for sex offenders, especially child molesters, is both worthwhile and a necessity. The next section of this review will outline the development of sex offender treatment programmes and examine how successful they have been.

Treatment for sex offenders
This section of the review will first depict how theories and methods regarding sex offender treatment have progressed, focusing on cognitive-behavioural therapy and relapse prevention techniques. Secondly, a number of studies on sex offender

treatment will be examined, revealing both significant and non-significant treatment effects.

History and development of sex offender treatment

Some of the first attempts to treat sex offenders focused on physical or biological methods, such as chemical (androgen-deprivation therapy) and physical castration. Androgen-deprivation therapy (ADT) reduces male hormones, mainly testosterone, with the aim of reducing sexual drive and desire. It is theorised that a reduction in sexual desire will stop offenders reoffending. This method is still used today in some states in America and other countries; such as Poland, despite understandable ethical concerns regarding human rights (Rice & Harris, 2011). However, the use of ADT is not widespread, and not enough research has been done on the efficacy of ADT for reducing sexual recidivism to endorse it as a viable, successful treatment (Rice & Harris, 2011). Treatment methods such as ADT therapy do not address the cognitive and behavioural problems than contribute to recidivism, and contemporary treatment focuses on identifying and altering problematic behaviour and cognitive distortions. These behavioural and cognitive problems are identified in risk assessment as dynamic risk factors.

The aim of cognitive- and behavioural-based treatment is to make long-term changes to an offender's risk level that will allow them to function as a productive member of society, posing no further threat to the community (Andrews & Bonta, 1994; McGrath et al., 1998). There are two overarching treatment models used in prison- and community-based programmes for sex offenders; cognitive-behavioural therapy and relapse prevention. Both treatment models will be explained theoretically and practically.

Cognitive-Behavioural Therapy

Cognitive-behavioural therapy is widely used in clinical practice and has excellent utility in the treatment of sex offenders; with many dynamic factors able to be targeted through the use of cognitive-behavioural therapy. Although individual treatment programmes may vary in their content, all cognitive-behavioural therapy for sex offenders focuses on three domains: Cognitive distortions (related to their offending behaviour and their victims), sexual deviancy (related to their sexual

preferences, fantasies and sexual behaviour) and general socio-affective and emotional problems (such as interpersonal difficulties, self-esteem and anger management) (McGrath et al., 1998; Schaffer, Jeglic, Moster & Wnuk, 2010). These treatment targets have been identified through research on the dynamic risk factors associated with recidivism for sex offenders (Hanson & Harris, 2001; Craig et al., 2007).

Cognitive distortions shared by many sex offenders include distorted beliefs about their offences or their victims, for example, viewing sexual activity with children as consensual, and these distorted beliefs justify their offending behaviour and promote further offending. Treatment attempts to show offenders that their attitudes and beliefs are distorted, and replace them with normative attitudes and beliefs (Friendship et al., 2003; Mann et al., 2010). Sexual deviancy problems in sex offenders have two general aspects; sexual preference and sexual preoccupation. Treatment will focus on turning a sexual preference away from children to a sexual preference for adult females or males, and learning to diminish sexual preoccupation (reducing fantasies and masturbation) (Craig et al., 2007; Mann et al., 2010). Social and emotional problems for sex offenders can involve mood problems, lack of empathy towards victims, irrational grievances, intimacy deficits and poor problem-solving skills. Offenders are given social skills training, as well as learning victim empathy and emotional congruence (Hanson & Harris, 2001; Friendship et al., 2003). In addressing all of these dynamic risk factors through cognitive-behavioural therapy, it should follow that the likelihood of sexual recidivism is reduced.

Relapse Prevention

Relapse prevention was first developed as a treatment for drug and alcohol addiction (Pithers, 1990), before being applied to sex offenders. It was based on the idea that relapse constitutes a repetitive pattern of behaviours, or chain of events, that culminates in the relapse behaviour (such as drug taking or a sexual offence) being committed. Relapse prevention first identifies the pattern of thought and behaviour that led to an offence being committed. Next, individuals are taught how break the offence chain by learning alternative coping strategies and behaviour management. They learn how to avoid situations which increase the likelihood of recidivism, such as abstaining from visiting a park where children will be playing, and in doing so reduce the risk of recidivism.

Relapse prevention is an extremely useful concept for sex offender treatment, especially with regard to community management. However, there were some aspects of Pithers' (1990) model that required modification before the treatment could be effectively applied to sex offenders. The main issue was that Pithers' model does not account for different 'offence pathways.' The model assumes that individuals who relapse do so because they have not regulated their behaviour effectively; they want to behave differently and try to avoid reoffending, but they do not have the knowledge or skill-set to behave in any other manner. Although this may be true of some sex offenders, some will actively and systematically plan their offences, having no desire to change the way they behave (Ward, Purvis & Devilly, 2004). Ward and Hudson (1998) proposed an alternative approach: The self-regulation model of relapse prevention. This model helped to account for the variance that is observed in sex offender behaviour, and aimed to provide details of the cognitive, behavioural, situational and motivational factors that are associated with sexual recidivism.

Self-regulation theory is based on the concept that all actions are goal-directed, and that self-regulation can allow for both the inhibition of certain behaviours and the enhancement or maintenance of other behaviours. Essentially, goals can be described as emotional states or situations that individuals want to obtain, or avoid. The planning, implementation and evaluation of behaviour is all influenced by a particular goal. Self-regulation is the method that everyone uses in order to reach their goal; for sex offenders, that goal may be to reoffend or to abstain from reoffending. Therefore, individuals can have very different offence pathways that will lead to the same end. Four pathways have been identified; approach-automatic, approach-explicit, avoidant-passive and avoidant-active (Ward & Hudson, 1998; Ward et al., 2004). The key features of these pathways will be described to give more understanding of how treatment is tailored for sex offenders.

An offender who uses the avoidant-passive pathway does try to abstain from reoffending, but does not having a coping strategy for high-risk situations. They under-regulate their behaviour, and end up reoffending. An offender who uses the avoidant-active pathway does have coping strategies for high-risk situations, but they are inappropriate, and fail, leading to an offence being committed. An offender who uses the approach-automatic pathway does not have a coping strategy for high-risk situations, and does not attempt to avoid high-risk situations either. Like the avoidant-passive offender, they under-regulate their behaviour. An offender who uses the

approach-active pathway actively seeks out high-risk situations; they employ effective planning and regulate their behaviour competently (Ward & Hudson, 1998; Ward et al., 2004). These offenders are the hardest group to treat, as there is nothing wrong with their self-regulation, they just have an inappropriate goal: Wanting to sexually offend against a child. Identifying which pathway fits each offender is extremely helpful for providing effective treatment and community management post-release.

In many treatment programmes for sex offenders, elements from cognitive-behavioural therapy and relapse prevention are combined to maximise treatment intensity and efficacy. Some treatment programmes include all sex offenders (rapists, extra-familial child molesters and incest offenders), and others have been tailored specifically for child sex offenders. Many studies have been done on whether this treatment approach is successful in reducing sexual recidivism, including important meta-analyses, which will be examined in the next section.

Results from treatment programmes: promising or disappointing?

Treatment programmes for sex offenders have been implemented around the world, with treatment efficacy studies carried out in the United Kingdom (Friendship et al., 2003), Canada (McGrath et al., 1998), America (Marques et al., 2005) and New Zealand (Bakker et al., 1998; Marentette, 2009). To establish the efficacy of treatment, research needs to show that a treated sex offender presents a lower risk for recidivism than an un-treated sex offender (Hanson et al., 2009).

Individual studies have found conflicting results for sex offender treatment. Several have not found a significant treatment effect, such as Friendship and colleagues (2003), who evaluated a national prison-based treatment programme for sex offenders in England and Wales. The study compared the outcome of sex offenders who had received treatment ($N = 647$) and retrospectively selected control group who had not received treatment ($N = 1,910$). After a two-year follow up, there was no significant difference in sexual recidivism rates between the two groups, with the treatment group exhibiting recidivism rates of 2.6% and the control group exhibiting recidivism rates of 2.8% (Friendship et al., 2003). However, a logistic regression demonstrated a significant reduction in recidivism for the treatment group when sexual and violent recidivism were combined (Friendship et al., 2003).

A rare example of a randomised, prospective study of a relapse-prevention treatment programme was completed by Marques and colleagues (2005). This study was the final report on California's Sex Offender Treatment and Evaluation Project (SOTEP), a longitudinal investigation on treatment efficacy. Three groups of offenders were included: One treatment and two control groups. Offenders who volunteered for treatment were randomly selected to enter relapse-prevention treatment ($N = 259$) or to be part of a control group ($N = 225$). The second control group consisted of offenders who were eligible for treatment but did not volunteer to take part ($N = 220$). All three groups (total $N = 704$) had a follow-up period of 8 years, and no significant differences in sexual or violent recidivism were found between the groups. Although the main results were not significant, it was found that individuals who met the targets of the programme, as measured by phallometric testing and scores on psychometric test areas (such as cognitive distortions and justification for offending) had lower recidivism rates than individuals who did not meet the targets. Overall rates of recidivism for offenders who did not meet the treatment targets was 27.2%, whereas overall rates of recidivism for offenders who did meet the treatment targets was 13.5%. Moreover, when separating the offenders into low, medium or high-risk based on Static-Lite Scores (modified version of the Static-99 that contained 7 of the 10 Static-99 items) these results became more significant. High-risk offenders who did not meet the treatment targets had recidivism rates of 50%, whereas high-risk offenders who did meet the treatment targets had recidivism rates of 10%. These results lend support to the theoretical application of relapse prevention, demonstrating that when a reduction in dynamic risk factors (treatment targets) occurs, the risk of recidivism also decreases.

Also, even though the study was a randomised clinical trial, it was found that the control and treatment groups still differed on particular static variables, namely marital status, percentage of offenders with a history of commitment or mental disorders, and risk level as measured by Static-Lite. The treatment group had a significantly higher average score on the Static-Lite compared to the control group. This meant the control groups were not matched to the treatment group on static risk level. A suitable comparison group should ideally be matched on all variables to the treatment group, to be certain that the results shown are due to treatment effect alone.

Some individual studies have also substantiated treatment efficacy for sex offenders. For example, McGrath and colleagues (1998) examined recidivism rates

for 122 sex offenders who were placed under correctional supervision in Vermont from 1984 to 1995. Seventy-one non-randomised offenders participated in a cognitive-behavioural and relapse-prevention-based treatment programme, thirty-two offenders received general mental health treatment and nineteen offenders received no treatment. At follow-up (an average of 5.2 years), it was found that the cognitive-behavioural group had a significantly lower recidivism rate than the mental health treatment group and the no treatment group (McGrath et al., 1998). However, the significant results found by McGrath and colleagues (1998) should be interpreted with caution due to the relatively small sample size; the results may not be representative of sex offenders in general.

Additionally, a more recent study on prison-based sex offender treatment was carried out by Duwe and Goldman (2009), yielding a significant positive effect of treatment. The study examined recidivism outcomes of 2,040 offenders (1,020 treated and 1,020 untreated) who were released from prisons in Minnesota between 1990 and 2003. The authors utilised a statistical method, propensity score matching, to reduce the observed differences between groups relating to static risk level. The results revealed that after an average follow-up period of 9.3 years, treatment significantly reduced the hazard ratio for sexual recidivism by 27%, by 18% for violent recidivism and 12% for general recidivism (Duwe & Goldman, 2009).

Furthermore, the sample size in the study by Duwe and Goldman (2009) was substantial. Samples of that size (over 2000 offenders), offering sufficient statistical power, are rare in individual studies on sex offender treatment, and are therefore very valuable to the field. Small sample sizes are more common in treatment evaluation for sex offenders due the fact that treatment programmes usually provide service to relatively few offenders at any one time. This issue can be resolved by using meta-analysis to combine the results of multiple studies and calculate the overall efficacy of treatment for a much larger group of offenders.

An early meta-analysis of sex offender treatment was completed by Furby and colleagues (1989), evaluating 42 treatment studies and concluding that there was little evidence to suggest sex offender treatment was successful. However, the majority of the studies in the review were conducted in 1980 or earlier and used outdated treatment methods; very few of them employed cognitive-behavioural or relapse-prevention-based treatment.

A more promising meta-analysis of sexual offenders was conducted by Nagayama Hall (1995), who evaluated 12 studies and found a small but significant treatment effect ($r = .12$), concluding that cognitive-behavioural treatments were superior to purely behavioural treatments. Although the meta-analysis limited the studies included to those with a comparison group, the review was criticised for its reliance on comparisons between treatment completers and drop-outs (Hanson et al., 2002). It is known that those who drop out of treatment are often high-risk offenders (Friendship et al., 2003), and resistance to completing treatment implies that there is no wish to change or reduce their risk of recidivism.

A more recent meta-analysis for sex offender treatment was carried out by Hanson and colleagues (2002). This meta-analysis was the first report on the Collaborative Outcome Data Project, which was set up by the authors to evaluate the effectiveness of cognitive-behavioural and relapse-prevention-based treatment for sex offenders. It was also the first meta-analysis that reported an overall positive treatment effect using such a large sample of offenders. Hanson and colleagues (2002) attempted to restrict their analysis to studies that were well-controlled to minimise potential threats to validity. Forty-three studies were evaluated in total (combined $N = 9,454$; 5078 treated and 4367 untreated); the studies were mostly recent, with a median publication date of 1996 and almost a quarter of studies published in 1999 or later. The question of whether cognitive-behavioural and relapse-prevention-based programmes were more effective in reducing sexual recidivism than more traditional treatments (i.e. behavioural only treatments) was also addressed. Over an average follow-up period of 46 months, the treatment groups exhibited lower overall rates of sexual recidivism (12.3%) than the comparison groups (16.8%). The treatment groups also displayed lower rates of general recidivism (27.9%) than the comparison groups (39.2%). Current treatments (13 cognitive-behavioural-based and 2 systemic-based) also proved more effective than older (pre-1980) treatments, with current treatments showing a significant reduction in sexual recidivism (from 17.4 to 9.9%) and older treatments revealing no significant reductions (Hanson et al., 2002).

The positive effect of treatment on sexual recidivism was also found in a later meta-analysis by Losel and Schmucker (2005). They evaluated 69 individual studies using the largest combined sample of offenders to date (total $N = 22,181$). Almost three quarters of the studies were published in 1990 or later. The majority of studies demonstrated a positive treatment effect over an average follow-up period of 37-60

months; the untreated offenders had an overall recidivism rate of 17.5%, while the treated offenders had an overall recidivism rate of 11.1%. Losel and Schmucker's review also investigated, like Hanson (2002), which type of treatment was the most effective. It was concluded that castration (both surgical and chemical) alongside cognitive-behavioural-based treatment were most effective. This recent appraisal of using castration may appear somewhat surprising due to an earlier comment regarding the limited potential of this treatment. However, a recent article by Rice and Harris (2011) observes that the vast majority of positive results for castration come from offenders who volunteered for the procedure. There has been no evidence produced that castration is a viable and effective technique for reducing recidivism in offenders who do not receive the treatment voluntarily (Rice & Harris, 2011).

Based on the results from the extensive meta-analyses above, it can be concluded that contemporary treatment programmes for sex offenders do show a moderate treatment effect and can be justified, both in terms of economic and social costs. The costs associated with reconviction are large for any offence, once policing, prosecution and court proceedings and incarcerated are factored in, and it has been estimated that the expense of one re-offender to the justice system can be as much as $200,000. Bakker and colleagues calculated from the results of their outcome study that the Kia Marama programme produced direct savings to the New Zealand Department of Corrections in the region of $5 million in the long-term (Bakker et al., 1998). Consequently, the economic benefits of reducing sexual recidivism by even a small percentage would outweigh the costs of any well-delivered treatment programme. Moreover, any reduction in crimes that victimise young children is extremely significant, even if the actual difference observed in recidivism rates does not seem very prominent.

Notwithstanding the generally positive outlook on using appropriate treatments to target sexual recidivism, there are numerous issues and challenges that researchers face when attempting to evaluate treatment efficacy for child sex offenders. These challenges and methodological concerns are extremely important when making informed decisions about treatment efficacy and will be covered in depth in the subsequent section.

Issues with assessing treatment efficacy

Researchers face many methodological challenges when attempting to evaluate treatment efficacy for sex offenders. Several of these challenges were outlined in a critique of Hanson et al.'s (2002) meta-analysis by Rice and Harris (2003). Rice and Harris also proposed guidelines for adequate treatment evaluation, focusing on how to minimise threats to internal validity.

Firstly, Rice and Harris (2003) were concerned that the majority of studies included in meta-analyses such as Hanson's (2002) did not include what they considered to be acceptable comparison groups. Most studies on treatment efficacy for sex offenders use quasi-experimental designs, with some studies comparing treated offenders retrospectively against an untreated group of sex offenders that are matched on static variables. Although studies may try to match offenders on various static variables, Rice and Harris argue that there will generally be inherent differences between groups; most notably, that untreated groups of offenders will include those who would have refused treatment and be likely to drop out of treatment (Rice & Harris, 2003). It is often found that drop outs and those who refuse treatment are significantly more likely to reoffend than offenders who complete treatment or those who are not offered treatment (Hanson, 2002). This bias can be ameliorated, at least to some extent, by including any non-completers in the treatment group.

Prospective, random assignment studies are most desirable for Rice and Harris (2003) but only one well-reported study by Marques and colleagues (2005) has employed this technique and it did not prove to be very successful. Although random assignment was employed, including two control groups (one of which did volunteer for treatment) there were still differences found in static risk level between the treatment and controls and thus the groups were not comparable (Marques et al., 2005). It is clear that random assignment does not guarantee equivalent groups, and therefore may not be the 'gold standard' of treatment evaluation that Rice and Harris (2003) suggest, or at least, one that could be realized in practical terms. Moreover, some authors disagree with Rice and Harris' (2003) opinion that random controlled trials should be utilised whenever possible to provide a better standard of treatment efficacy.

For example, Marshall and Marshall (2007) concluded that random controlled trials are actually inappropriate for use in sex offender treatment evaluation. One issue put forward by Marshall and Marshall involves ethics and negative effects of

allocation to the control group. Firstly, it may be deemed unethical to deny possibly effective treatment to a group of sex offenders that has volunteered for a treatment programme. Secondly, as offenders in the control group have to volunteer and give their informed consent, they will be aware that they are not receiving treatment, and this may lead to anger or resentment that has a secondary influence on their risk of recidivism (Marshall & Marshall, 2007). This effect may be even more apparent when treatment is carried out in an alternative setting to the control group environment. This was the case with the SOTEP evaluation by Marques and colleagues (2005) where the treated offenders resided in a hospital setting and the untreated offenders resided in the general prison population.

Furthermore, Marshall and Marshall (2007) also observed that the random controlled trial does not allow much flexibility for treatment to be tailored to an offender's individual needs, with every offender receiving the same level and delivery of treatment. This inflexibility means treatment does not adhere to the *responsivity* principle, which specifies that treatment must be appropriate for an offender's risk level, and must be delivered in a manner that is suitable for each offender. The authors of the SOTEP study also recognised this issue, agreeing that their programme may have been too intensive for the risk level of some offenders, and that the treatment-manual approach they employed limited the extent to which individual offenders' needs were met (Marques et al., 2005).

Most importantly is the concern that random assignment does not guarantee equivalent groups. This was highlighted by the results from the SOTEP evaluation (Marques et al., 2005; Marshall & Marshall, 2007) and suggests that well-controlled retrospective studies where comparison groups are selected from the general prison population are appropriate for evaluating sex offender treatment and may be more suitable. Marshall and Marshall (2007) also suggest an alternative evaluation strategy of comparing recidivism rates of treated offenders against expected recidivism rates obtained from actuarial risk assessment measures, thus eliminating the need for a tangible comparison group.

Furthermore, there is another treatment evaluation strategy which eliminates the need for a comparison group that can be used with sex offenders, focusing on treatment gain. This strategy involves measuring dynamic risk factors pre- and post-treatment to see if any changes have occurred in individual offenders. Recidivism data can then be compared with change in dynamic risk factors. The aim of the evaluation

is to demonstrate that offenders who show treatment gain (reduction in dynamic risk) also show a reduction in recidivism rates, thus validating the effectiveness of treatment (Beggs & Grace, 2011). If the treatment is truly effective, then offenders who show more improvements during treatment should have a lower risk of recidivism than offenders who show less improvement. Treatment change can be measured by risk assessment tools that include dynamic factors such as the Violence Risk Scale: Sex Offender version (VRS:SO; Olver et al., 2007). Treatment change can also be measured using structured post-treatment clinical rating systems such as Structured Goal Attainment Scaling (SGAS; Hogue, 1994).

A study by Beggs and Grace (2011) compared a sample of 218 sex offenders, followed for an average of 12.24 years post-release, using 3 different methods for evaluating treatment change; the VRS:SO, SGAS and self-reports on a psychometric battery administered pre- and post-treatment. All measures of treatment gain significantly predicted reductions in sexual recidivism, demonstrating ROC AUC values ranging from .66 to .70 (Beggs & Grace, 2011).

Research on treatment change and recidivism has increased over the last few years, with differing results. A study by Barnett and colleagues (2011) examined the relationship between changes in psychometric test scores (pre- and post-treatment) and sexual recidivism in a sample of 3402 sex offenders. Over an average follow-up period of 3 years, treatment change was not significantly associated with sexual recidivism, and did not add predictive power to static risk assessment (Barnett, Wakeling, Mandeville-Norton & Rakestrow).

Conversely, a study by Wakeling and colleagues (2011) examined the relationship between changes in psychometric test scores and sexual recidivism in a sample of 3733 sex offenders. Over an average follow-up period of 4.3 years, change on 3 of the 4 risk domains used (sexual interests, socio-affective problems and self-regulation problems) was associated with a lower risk of recidivism. Although, an overall treatment score was also calculated that did not significantly add to the predictive validity of actuarial risk assessment (Wakeling, Beech & Freemantle, 2011).

Additionally, it is worth restating here that when the SOTEP evaluation investigated the performance of their treatment group, they found that offenders who had met the goals of the relapse prevention programme had lower rates of recidivism than offenders who had not met the goals of the programme (Marques et al., 2005)

The results from the studies outlined above demonstrate that this type of evaluation may provide some benefits independent of comparison-group studies, and could offer further insight in to which offenders may be amenable for treatment and which offenders are unlikely to show treatment gain.

No matter which evaluation strategy is utilised, there are methodological problems that authors must be aware of, and account for where possible. These methodological problems include follow-up time, operational definitions, social desirability and treatment drop-outs.

Follow-up time

The follow-up periods for most studies are between one year and five years (Hanson, 2002). For crimes such as drug offences, five years would be a substantial follow-up period, but it is not uncommon for child sex offenders to abstain for ten years or more 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 treatment efficacy. If all studies had a follow-up period of 20 years, the general observed recidivism rates for sex offenders against children may look very different.

Operational definitions

It is vital that the operational definitions in any study are stated explicitly. For research on sex offending, the most important definition is 'recidivism.' Many different measures of recidivism can be used, for example, re-arrest or re-conviction. Depending on the definition used for recidivism, the observed recidivism rates will be very different. For this reason, it is crucial that the definition of recidivism be stated explicitly in every study.

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

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influence when evaluating sex offenders in treatment and data relying on self-reports are used (e.g., paper-and-pencil psychometric tests). The completion of a treatment programme for sex offenders can have beneficial results for an offender, with regard to length of sentence served, and parole board decisions. The fact that there is an incentive for offenders completing treatment or showing that they have 'changed' can become problematic for treatment efficacy results. Socially desirable responding (SDR) is most apparent in self-report measures, 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.

Treatment drop-outs

Many studies exclude the drop-outs from the treatment group, or base the entire study on comparing those who completed treatment against those who dropped out of treatment (Hanson, 2002). This is a factor that may warrant some investigation, as it has been shown that treatment drop-outs have a higher recidivism rate than those who complete the treatment and those that do not receive treatment, with five times the rate of new sexual offences and three times the rate of new non-sexual offences (Quinsey et al, 1993). Excluding drop-outs entirely would probably not give an accurate representation of those at the highest risk of recidivism. In addition, only comparing treated offenders against those who dropped out of treatment could display a biased interpretation of results; the treated offenders are only being compared against very high-risk offenders, and any treatment effect demonstrated would be inflated. Therefore, the way in which drop-outs were analysed in a study should always be mentioned, with their implications for overall treatment effect considered.

Notwithstanding the methodological concerns that must be attended to, there are also many other issues which pose a challenge for assessing treatment efficacy for sex offenders. These issues include the base rates of sexual offending, recorded versus actual rates of recidivism, plea-bargaining, treatment selection and individual responses to treatment.

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)

       Policy measures and public awareness are two factors especially relevant to rates of sexual offending. The public view of sex offenders against children has led to exceptional policy measures such as preventative detention, indeterminate sentences and community notification (Jones, Finkelhor & Halter, 2006). 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, due to increased media and public awareness of child sex offenders and their methods of victimisation (Quinsey et al., 1995; Hanson, 2000).

       The low official base-rates of sexual offending against children, and the low recidivism rates, which are around 10-15%, make it extremely difficult to assess treatment efficacy, as the chances of any given offender committing another sexual offence against a child are relatively low to start with (Craig et al., 2007; Hanson & Harris, 2001; Mann et al., 2010). The statistical power of a study needs to be very high to show a significant result in cases like this, and as the population of sex

offenders against children is small compared to other criminals, it is very difficult to get enough participants in an individual study to gain the power needed for a significant result. For this reason, meta-analyses are extremely valuable to the study of sex offender treatment as they make it possible to assess large numbers of sex offenders.

Recorded vs. actual rates of offending

Recorded offending rates differ from actual offending rates with regard to all crime, but for sexual offences against children the discrepancy is much higher (McGee et al., 2011). A large proportion of offences 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.

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 et al., 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 treatment efficacy. 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 (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.

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 (Quinsey et al., 1993; Hanson, 2000; Hanson 2002). 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.

Treatment selection

There are many factors involved when selecting offenders who will receive treatment and these factors inevitably have an effect on how treated offenders differ from untreated offenders. Criteria must be set regarding who can enter into a treatment programme, and these could distinguish treated offenders from untreated offenders on static or dynamic risk factors. For example, the SOTEP evaluation included the requirement that to be eligible for the treatment programme, offenders had to have fewer than three previous convictions (Marques, et al., 2005). This decision would have led to many of the high-risk offenders being excluded from treatment.

For some treatment programmes, participation is voluntary, and this implies a level of willingness or motivation to change, which is beneficial to treatment outcome. Motivation to change is desired in most treatment programmes and some programmes will not include offenders who are not displaying any willingness to change (for example, Kia Marama; Bakker et al., 1998). However, multiple studies have found that for substance abuse, there is no significant difference in 1-5 year outcomes of relapse between patients who are legally mandated to treatment and patients who volunteer for treatment (Brecht, Anglin & Wang, 1993; Kelly, Finney & Moos, 2005). Nonetheless, substance abuse patients and sexual offenders against children are arguably different populations; although there is not substantial research on the importance of motivation to change in sex offender treatment outcomes, it has been demonstrated that sex offenders who refuse treatment pose a higher risk of recidivism (Quinsey et al., 1993). Consequently, if a comparison group then includes all the offenders who did not want to receive treatment, the group would likely pose a higher risk of recidivism overall. Again, this would influence the treatment effect, due to the comparison group not matching the treatment group on risk level.

There are a substantial number of static and dynamic risk factors that have been implicated in sexual recidivism, and the relatively small number of sexual offenders (in comparison with the number of general offenders), especially sexual offenders against children makes it challenging to find treated and untreated cases that

are exactly matched on all risk factors. Therefore, it does not matter whether the authors choose to apply a randomly controlled trial or a retrospectively-matched comparison group, as it is extremely unlikely that the treated and untreated offenders would have identical levels of risk.

Nonetheless, when using a comparison group, statistical techniques can be employed to attempt to control for differences in risk level between treated and untreated offenders. Some studies have controlled for differences in static variables using logistic regression to show that treatment has an effect (Friendship et al., 2003). Any significant factors on which the comparison group and the treatment group differ are entered into a regression equation to assess the contributing weight of each factor to the overall effect. By controlling for all factors except for which group the offenders are in, it can be shown that treatment has an effect on recidivism rates over and above other contributing factors, such as sex of the victim or number of previous convictions.

Similarly, there is emerging literature on using another statistical technique; propensity score matching, to control for differences in risk level between offenders selected for treatment and those not selected for treatment. This method was employed in the outcome study mentioned previously by Duwe and Goldman (2009) with extremely positive results. Propensity score matching, when used in outcome studies for sex offenders, estimates the conditional probability of selection to a particular group (treated or untreated) given a vector of observed confounding variables (differences in offender characteristics that influence risk level) (Rosenbaum & Rubin, 1984). However, this method can not always be used in individual studies, as for propensity score matching to be most successful, the sample size needs to be quite large, which is often difficult to achieve in studies on individual treatment programmes. Moreover, there also need to be a substantial overlap in propensity scores between the two groups of offenders, otherwise the method will produce either inexact or incomplete matches (Duwe & Goldman, 2009).

Nevertheless, studies can use one, or both, of these statistical techniques to eliminate selection bias and heterogeneous risk profiles between treated and untreated offenders, allowing an accurate evaluation of treatment effect on recidivism to be carried out.

Individual responses to treatment

The issue with assessing the overall efficacy of programmes that are widespread throughout prisons in one country, or across countries, is that individual responses to a programme can differ greatly. Sometimes this can be due to the implementation of the programme. If programme delivery is not monitored closely and strictly regulated, it may vary substantially across individuals and treatment locations (e.g., different prisons). It could be due to the professionals employed, a lack of understanding about specific aspects of the implementation, or the availability of resources and personnel. For example, due to a lack of funding, group therapy sessions may be shorter than originally intended or involve larger numbers of offenders as there are not enough psychologists to warrant smaller numbers. Consequently, an evaluation of one treatment programme may not be generalizable to that treatment approach in general, and the implementation of the treatment must be taken into account and altered if it is not being delivered in the correct fashion. However, there is some literature on effectively transporting treatment pilot-programmes to field settings on a large-scale, mainly with Multisystemic Therapy (MST), which is used to reduce violent and general criminal behaviour in juvenile offenders. The principles of MST include a focus on treatment fidelity, and supervisory protocol ensures that MST can be provided by different supervisors, teams and organisations. Studies have found that the treatment principles and supervisory protocol can be adhered to in widespread clinical practice (Brown, Swenson, Cunningham, Henggeler, Schoenwald & Rowland, 1997; Henggeler, Schoenwald, Liao, Letourneau & Edwards, 2002). This evidence demonstrates that programmes can be transported to a variety of settings if there is supervisory protocol to ensure that the treatment principles and methods are adhered to.

Some programmes separate the offenders being treated from other inmates 24 hours a day, and there may be some round-the-clock elements to the programme, so there is no chance for the external environment to effect treatment outcome Bakker et al., 1998; Marques et al., 2005). For programmes that do not have 24-hour separation from the general inmate population, there may be confounding influences from the other offenders, especially from interactions with other sexual offenders that are not participating in the programme.

Another difficulty is that treatment programmes may not sufficiently address the *responsivity* principle. If treatment programmes use a manual or textbook

approach, then every offender may receive the same level and intensity of treatment, leaving no flexibility to address any specific needs or requirements of an individual offender (Marshall & Marshall, 2007). If any of the principles of effective treatment are not adhered to, treatment is less likely to reduce the risk of recidivism (Andrews & Bonta, 2006). Treatment programmes should allow for more individualised treatment to maximise the potential results.

One evaluation method addresses the issue of individual responses to treatment; using pre and post risk levels to evaluate treatment efficacy. As mentioned previously, this method allows for close inspection of how each individual responds to the treatment they receive. Kia Marama assesses every offender that completes the programme in this manner; with rigorous evaluations carried out upon entering and leaving the treatment unit (Bakker et al., 1998; Beggs & Grace, 2011)

In summary, several of these challenges are due to the nature and characteristics of the offender population being studied, and are out of the control of both treatment providers and researchers. Nonetheless, some common potential threats to validity can be removed is the study is carefully conducted and it is imperative that authors do their best to produce well-controlled outcome studies.

Now that the treatment approaches for sex offenders have been considered, highlighting the importance of producing strong treatment outcome studies, we move on to the treatment programme at the focus of the current study, Kia Marama. First we provide a more detailed description of the treatment provided by the Kia Marama programme and previous evaluations of its effectiveness.

Kia Marama Special Treatment Unit

Kia Marama was the first prison-based treatment programme for sexual offenders in New Zealand, established in 1989 at Rolleston Prison in Christchurch. It employs a group-focused, intensive cognitive behavioural programme which also uses relapse prevention principles. It was modelled on one of the only other two programmes of this type that existed in 1989, the Atascadero Offender Treatment and Evaluation Programme, which was based in Vermont (Bakker et al., 1998).

The Kia Marama programme, devised by William Marshall, is 31 weeks long, and 60 offenders can be in treatment at any one time. Treatment focuses on getting offenders to acknowledge, recognise and alter the cognitive processes that lead to

their offending, using elements of cognitive-behavioural therapy and relapse prevention. There is a strong research interest in the unit and when entering the programme, all participants give their informed consent to their records and treatment progress data to be used for research purposes. This allows for comprehensive data collection relating to all offenders who enter the programme; an invaluable resource for evaluating what is now over 20 years of treatment (Bakker et al., 1998).

There is an extensive assessment process that offenders undergo upon entering the programme, lasting two weeks. The clinical interviews create an offender profile that allows the programme to be customised to each individual, based on their specific needs. This is an extremely important factor in improving the responsivity of individual offenders to maximise the potential results, and is not present in other treatment programmes (e.g., Marques et al., 2005).

The offenders in Kia Marama have to be referred from prisons in the South Island and lower North Island by psychological staff in the Department of Corrections. The men must volunteer for the programme, after being given the information by Psychological Service staff. Their sentences must be long enough so that they will be able to complete the 31 weeks of the programme, and are typically transferred to Kia Marama toward the end of their sentence. In this way, when they have served their total sentence they can transition to aftercare straight from the programme, as opposed to returning to the general prison population before being released. Planning for community reintegration is included in the programme (Willis & Grace, 2008), which increases the chance of treatment remaining effective after release.

There are some entry requirements to the programme regarding criminal history and mental status. The offender must be charged with a sexual offence against a minor (under 16 years of age in New Zealand), and have a minimum/medium security classification. The man must be free of active mental illness and not intellectually disabled (defined as having an IQ under 70). The offender also, upon entering the programme, does not need to have admitted to the crimes they have been convicted of. If the denial continues past the programme modules designed to give the offenders perspective on their crimes, such as "understanding your offending" and "victim impact and empathy" the offender would then be removed from the programme and returned back to the general prison population (Bakker et al., 1998).

Every offender works through the same treatment modules in the following order: "norm building," "understanding your offending," "arousal reconditioning," "victim impact and empathy," "mood management," "relationship skills," and "relapse prevention." Kia Marama has a Re-integration Coordinator, responsible for creating each individual release and aftercare plan, which are an integral part of ensuring treatment compliance. For everyone who completed the programme, this involves regular meetings at Community Corrections and attending a monthly Kia Marama Follow-Up support group (Bakker et al., 1998; Marentette, 2009).

Kia Marama is the most comprehensive source of data on sex offender treatment in New Zealand, and research on the success of the programme is of great importance to current knowledge of child sex offenders and their treatment outcomes. Two notable outcome studies of the Kia Marama programme, along with a study of treatment change have been published.

The first outcome study of Kia Marama was carried out by Bakker and colleagues (1998). Graduates from the first three years of the Kia Marama programme (N = 238) were compared against a control group of child sex offenders selected from the general prison population (N = 281). After a follow-up period of at least two years for every offender, lower recidivism rates were found in the treatment group (8%) than in the control group (22%), demonstrating a positive treatment effect. Further evaluation of recidivists in the treatment group confirmed that the recidivists differed from the non-recidivists on various measures post-treatment, such as higher incidences of sado-masochistic fantasies and a decline in empathic ability (Bakker et al., 1998). This result highlights the importance of evaluating individual treatment gain and responses to treatment. However, when interpreting the results for this study, some confounding factors must be considered, such as the fact that the control group had approximately twice as much time in the community post-release than the treatment group.

A later outcome study for Kia Marama was completed by Marentette (2009). In this unpublished Master's thesis, 360 men who received treatment at Kia Marama after 1998 were compared against 374 child sex offenders who were released from prison in New Zealand between 1998 and 2001 who had not received treatment. The average follow-up time for the total sample was just over nine years, with both groups of offenders exhibiting very similar recidivism rates (approximately 5.8%). This result was not altered even when risk level (as measured by the ASRS) was controlled using

logistic regression. However, Marentette (2009) discovered that the two groups differed on various risk factors and that even though some were controlled for, the differences could still have confounded the results. The treatment group was found to be older, have more male victims and more prior sexual convictions than the control group, whereas the control group was found to be younger, have more prior sentencing dates and prior violent convictions than the treatment group. The control group also served significantly shorter prison sentences than the treatment group (Marentette, 2009). Moreover, an important point was highlighted by Marentette (2009) regarding the difficulty of obtaining significant statistical power in a study where the base rates of recidivism are extremely low. In order to gain a desirable level of statistical power in these circumstances, a very large sample size must be used, which can be difficult when using a very restricted population such as sexual offenders against children.

A study of treatment change using a sample of offenders who had attended Kia Marama was also undertaken by Beggs and Grace (2011) that focused on evaluating whether various measures of treatment gain corresponded to a reduction in recidivism. The sample consisted of 218 offenders who received treatment at Kia Marama and were followed up for an average of 12.24 years post-release. The results demonstrated that when static and dynamic levels of risk were controlled for, all measures of treatment gain significantly predicted reductions in recidivism (Beggs & Grace, 2011). Although this study was not investigating the recidivism rates of treated offenders compared to untreated offenders, it provides support for the use of the cognitive-behavioural and relapse-prevention-based treatment delivered in Kia Marama; targeting dynamic risk factors is effective, and change in these risk factors does reduce the recidivism risk of an individual offender.

Evaluations of Kia Marama have confirmed that offenders who display treatment gain do have a lower risk of recidivism than offenders who do not display treatment gain, proving that for at least some offenders, Kia Marama is a successful treatment programme. The current research follows-on from previous evaluations of Kia Marama and will be outlined in the next section.

Current Research

<u>Rationale for the current research</u>

It is clear from the previous sections that there is still a need for well-controlled studies of treatment efficacy to further substantiate the effectiveness of treatment in reducing the recidivism of child sex offenders. Moreover, it would be advantageous for our understanding of treating sex offenders to obtain a more detailed comparison of the differences between sex offenders that receive treatment and those that do not receive treatment. Of particular interest was the breakdown of prior sexual offences for each sample; whether there were any differences in our fifteen sexual offence categories between the treatment group and the control group. To our knowledge, a sexual offence type breakdown of this depth has been rarely performed in research on sexual offenders, allowing us to provide hopefully useful information regarding the offence histories of men who sexually offend against children. One example of a breakdown of sexual offences (into seven categories) was carried out in the study on Kia Marama by Bakker and colleagues (1998). Furthermore, it is often speculated that offenders with certain subgroups of victims have differing recidivism rates, such as male victims under 16 years of age (McLean & Rush, 1990), so it may be worthwhile to see if there are significant differences between offenders with a specific type of victim.

Additionally, although the initial outcome study for Kia Marama found a positive treatment effect (Bakker et al., 1998), the more recent study of outcomes for Kia Marama by Marentette (2009) did not find a significant treatment effect. It would be beneficial to complete a further outcome study for Kia Marama that uses a larger comparison group of untreated offenders in an attempt to provide a more definitive estimate of a treatment effect. The current study was motivated by these goals, with the sample being drawn from the largest participant pool available in order to maximise statistical power.

Specifically, in the current study we examined a treatment group of offenders who attended Kia Marama, and a comparison group of incarcerated sex offenders who did not receive treatment at Kia Marama or a similar STU (i.e., Te Piriti). The two groups were compared on offender characteristics, including details of previous sexual offending, as well as rates of sexual, violent and general recidivism. Because

we anticipated that the groups might differ in terms of offence history variables whose association with recidivism is well established (i.e., static risk factors), we developed predictive models for recidivism in an attempt to control for differences in risk factors prior to testing for an effect of treatment. Thus, there were two main goals of the current research. Firstly, to supply a detailed description of the characteristics of treated and untreated sex offenders, focusing on details of previous sexual offending. This will provide more information for researchers doing further study on sex offender treatment and highlight whether it is possible to obtain a suitable comparison group. Secondly, to test whether sex offenders who have been treated at Kia Marama show reduced sexual, violent and general recidivism rates when compared to untreated sex offenders after controlling for any differences in offence history.

Chapter 2: Method

Offender Samples

Data was collected on a total sample of 2919 offenders that were released from a New Zealand prison after being convicted of a sexual offence against a child. The total sample consisted of 2102 offenders in the untreated group and 817 offenders in the treated group.

The untreated group consisted of all offenders that were released from incarceration in a New Zealand prison between 1st January 1998 and 1st January 2010, and had a conviction for a sexual offence against a child. For the untreated group, their index offence was the last or only sexual offence that occurred prior to their prison release date. The list of offenders was obtained from the New Zealand Department of Corrections. All offenders who entered a special treatment unit for sex offenders (Kia Marama and Te Piriti) during their incarceration were omitted. In the original list, 66 duplicate records were identified and deleted, leaving 2036 offenders. This list was narrowed again after removing all offenders who lacked a specific prison release date, leaving a final untreated group of 1956 offenders. Offence history and follow-up information was obtained for the control group in March – October 2010.

The treated group consisted of all offenders that were incarcerated in a New Zealand prison for a sexual offence against a child and had attended the Kia Marama treatment programme before their release; between 1987 (when Kia Marama began functioning) and 1st January 2010. For the treated group, their index offence was the offence that resulted in their incarceration and subsequent attendance at Kia Marama. Non-completers and those offenders who were deceased by 1st January 2010 were also included in the treated group. To minimize cohort effects and differences in follow-up time, the treated group was narrowed to only include offenders who had attended Kia Marama and been released after the 1st January 1997, leaving a final treated group of 428offenders. The list of offenders that met the criteria was obtained from the New Zealand Department of Corrections. Offence history and follow-up information was obtained for the treatment group in October – December 2008.

Offenders that received treatment at Ti Piriti Special Treatment Unit for sexual offenders against children were not included in either the untreated group or the treated group.

The final combined sample for the analyses contained 2384 offenders; 1956 in the untreated group and the 387 in the treated group.

Procedure

The offence histories for the offenders in both the untreated group and the treated group were downloaded from the National Intelligence Application (NIA) database maintained by the NZ Police in spreadsheet form and imported into a Microsoft Access database. Separate databases were created for the untreated and treated groups.

The offence histories included details of all convictions such as types of offence, hearing and offence dates; in addition, demographic information was included such as date of birth, and the prison release dates were also recorded.

Queries were written to compute values for all the variables listed in Table 1 below from the Access databases, including ASRS items and additional variables relating to sexual offence history. A list of the total queries used in each database can be seen in Appendix A.

Many of the queries in each database extracted offence related information, which was identified using the official New Zealand Police offence codes. All violent offences have codes between 1000-1999, sexual offences have codes between 2000-2999, property offences have codes between 3000-3999, drug offences have codes between 4000-4999, and driving/administrative offences have codes between both 0-0999 and 5000-5999 (for a full list of all NZ Police offence codes see http://www.abs.gov.au/ausstats/abs@.nsf/mf/1234.0).[1]

For the purpose of creating some of our 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 property offences were category 3, all drug offences were category 4 and all driving/administrative offences were category 0 or 5.

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[1] Note: The New Zealand Police brought the offence codes they used into line with those used by the Australian government in 2010, hence the offence codes used when our offender samples were sentenced are no longer in use.

The criterion hearing date was defined as the latest hearing date prior to the prison release date. The sexual offence(s) 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. The follow-up period started when the offender was released from prison and continued until the offence histories were downloaded (defined as 1 May 2010 for the untreated group and 31 December 2008 for the treated group).

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 one of the most widely used and validated risk assessment tools used today (Hanson, 2002). 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 (Skelton et al., 2006), unlike measures like the Static-99 which are usually completed by a probation officer or other corrections professionals. The ASRS scores were calculated for all offenders in both groups. 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.

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

Variable	Description
ASRS Variables	
Prior Sex Offences	Detailed in previous ASRS section
Prior Sentencing Dates	
Prior Non-contact convictions	
Index Violence	
Prior Violence	
Male Victims	
Young Offender	
Total Score	
Demographic Variables	
Date of Birth	
Age at Release	Age at prison release date
Sentence Variables	
Sentence Length	
Prison Release Date	
Time at Large	Time between prison release date and re-offence/end of follow-up period
Hearing Date	Criterion hearing 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	
No. PSC: Bestiality	Number of prior sex offences for bestiality
No. PSC: Incest	Number of prior sex offences for incest
No. PSC: F < 12	Number of prior sex offences against a female victim under 12 years of age
No. PSC: F 12-16	Number of prior sex offences against a female victim between 12 and 16 years
No. PSC: F < 16	Number of prior sex offences against a female victim under 16 years of age
No. PSC: F > 16	Number of prior sex offences against a female victim over 16 years of age
No. PSC: M < 12	Number of prior sex offences against a male victim under 12 years of age
No. PSC: M 12-16	Number of prior sex offences against a male victim between 12 and 16 years of age
No. PSC: M < 16	Number of prior sex offences against a male victim under 16 years of age
No. PSC: M > 16	Number of prior sex offences against a male victim over 16 years of age
No. PSC: Victim < 16	Number of prior sex offences against a victim under 16 years of age (sex unspecified)
No. PSC: Other	Number of prior sex offences (details unspecified or does not fit any other sex offence category)
No. PSC: Other Contact	Number of prior contact sex offences (victim age or sex unspecified)
No. PSC: Porn/NC	Number of prior non-contact/pornography sex offences
No. PSC: SubVictim	Number of prior sex offences against a subnormal victim
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

Table 1: List of variables used in the current study
Note: 'PSC' stands for 'prior sexual convictions' in all of the sexual offending variables

description into a Microsoft Excel spreadsheet, i.e. "2141 – Indecently assaults female under 12," and then separating the 194 sexual offences in to 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. 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 indecent or objectionable material, indecent exposure, sexual grooming (including arranging or travelling to meet a young person), and other indecent performances.

Data analyses

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

Goal 1: Describe the untreated group and treated group in terms of offender characteristics and test for any differences between the two groups.

Goal 2: Describe recidivism results – sexual, violent and general – for the treatment and control groups, as well as examining the relationships between offence history variables and recidivism.

Goal 3: Develop a predictive model for sexual recidivism and test for group differences after the different levels of the predictive variables are controlled for.

Descriptive statistics were used to characterize the two groups in terms of offender characteristics and a Chi-square analysis checked for any significant differences in the characteristics between the untreated group and the treated group.

Descriptive statistics were also used to describe sexual, violent and general recidivism for each group and a Chi-square analysis checked for any significant differences in recidivism between the untreated group and the treated group.

Correlation analyses were then completed to assess the relationship between recidivism (sexual, violent and general) and offence history variables. The correlation analyses were run with the untreated group and the treated group, and comparisons made between the two groups regarding any significant differences in correlations.

A forward stepwise regression was then used to formulate predictive models for sexual, violent and general recidivism; ROC AUC values were also generated for each model and for the ASRS. The predictive models controlled for differences in static risk level between the two groups, allowing us to observe whether group assignment had a significant effect on recidivism risk, over and above static risk factors.

Chapter 3: Results

Goal 1: Describe the control group and treatment group in terms of offender characteristics and test for any differences between the two groups.

The untreated group consisted of 1956 men who had been incarcerated for a child sexual offence and released from prison between 1 January 1998 and 30 June 2008, and were followed for an average of 6.81 years post-release. The average age of an offender at release in the untreated group was 43.17 years. The treated group consisted of 428 men who had been incarcerated for a child sexual offence and subsequently attended the Kia Marama Special Treatment Unit, and were released from Kia Marama between 1 January 1997 and 2 July 2008, and were followed for an average of 6.36 years post-release. Although the difference in average follow-up time between the two groups was relatively small (0.45 years), it was statistically significant (t (2382) = 2.82, p < 0.005). Of the 428 offenders in the treated group, 409 (95.6%) completed the program and 19 (4.4%) dropped out or were expelled from the program. The average age of an offender at release in the treated group was 43.12 years. In Table 2 below, the two groups are compared on the individual component and total scores of the ASRS, sentence variables, and other offence history variables. The ASRS item variables were defined as noted in Chapter 2, while the sentence variables and other offence variables were raw scores (e.g., number of days for prison sentence, number of prior convictions).

Table 2 shows that there are differences in some of the offender characteristics between the untreated and treated groups. The untreated group had an average sentence duration of 417 days, or 1.42 years, less than the treated group (untreated M = 684.70 days, or 1.86 years; treated M = 1101.71 days, or 3.02 years). This difference was statistically significant (t (2313) = -9.70, p<0.001). Table 2 and Figure 1 also show that the untreated group also had significantly more prior drug offences than the treatment group, Ms = 1.18 and 0.88, respectively (t (2382) = 2.12, p<0.001). Additionally, the untreated group had significantly more driving/administration offences than the treated group, Ms = 3.76 and 2.97 (t (2382) = 2.13, p<0.001). Conversely, the untreated group had significantly fewer prior property offences than the treated group, Ms = 3.45 and 6.61 (t (2382) = -3.61, p<0.001).

The ASRS component variables also showed some group differences, demonstrated in Table 2 and Figure 2. The most notable were that the treated group had significantly higher scores than the untreated group for prior sex offences than the
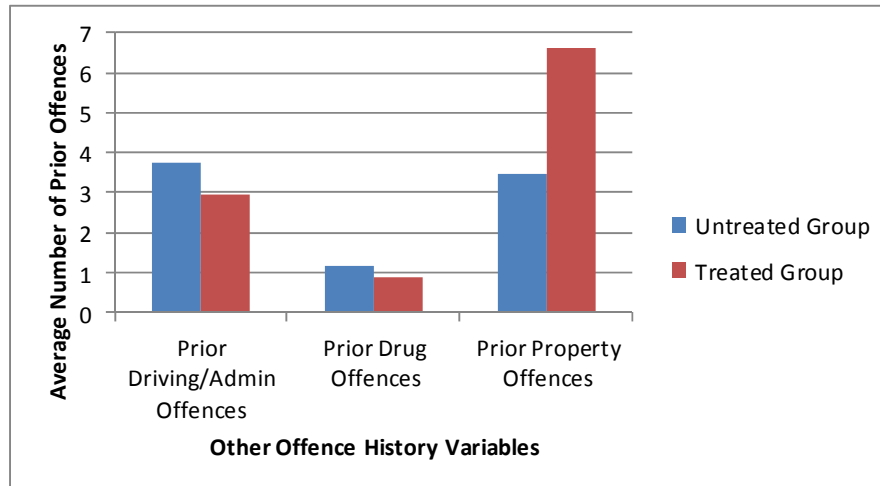
Figure 1: Frequency Distribution of Average Number of Prior Offences for treated and untreated offenders

untreated group, Ms = 0.60 and 0.30, respectively (t (2382) = -6.92, $p<0.001$), and male victims, Ms = 0.26 and 0.15 (t (2382) = -5.83, $p<0.001$). The treated group also had significantly higher scores than the untreated group on prior non-contact offences, Ms = 0.04 and 0.02 (t (2382) = -2.02, $p<0.001$), and a significantly higher ASRS total score, Ms = 1.67 and 1.35 (t (2382) = -4.22, $p<0.001$).

The untreated group had significantly higher scores than the treated group for prior violent offences, Ms = 0.31and 0.24, respectively (t (2382) = 3.04, $p<0.05$), and young offender, Ms = 0.14 and 0.07 (t (2382) = 4.01, $p<0.001$). Figure 3 demonstrates that even though the average age at release was similar for both groups, a higher percentage of untreated offenders were between 18 and 33 years of age at their time of release, hence the higher scores on the young offender item (which measures whether the offender was under 25 years of age at the time of release). Two ASRS variables were not significantly different between the groups: Prior sentencing dates and index violence.

The next analyses took a closer look at the dimensions of prior sexual offending for both groups. Prior sexual offences were broken down in to categories based on the age and sex of the victim (details on the sexual offence categories are
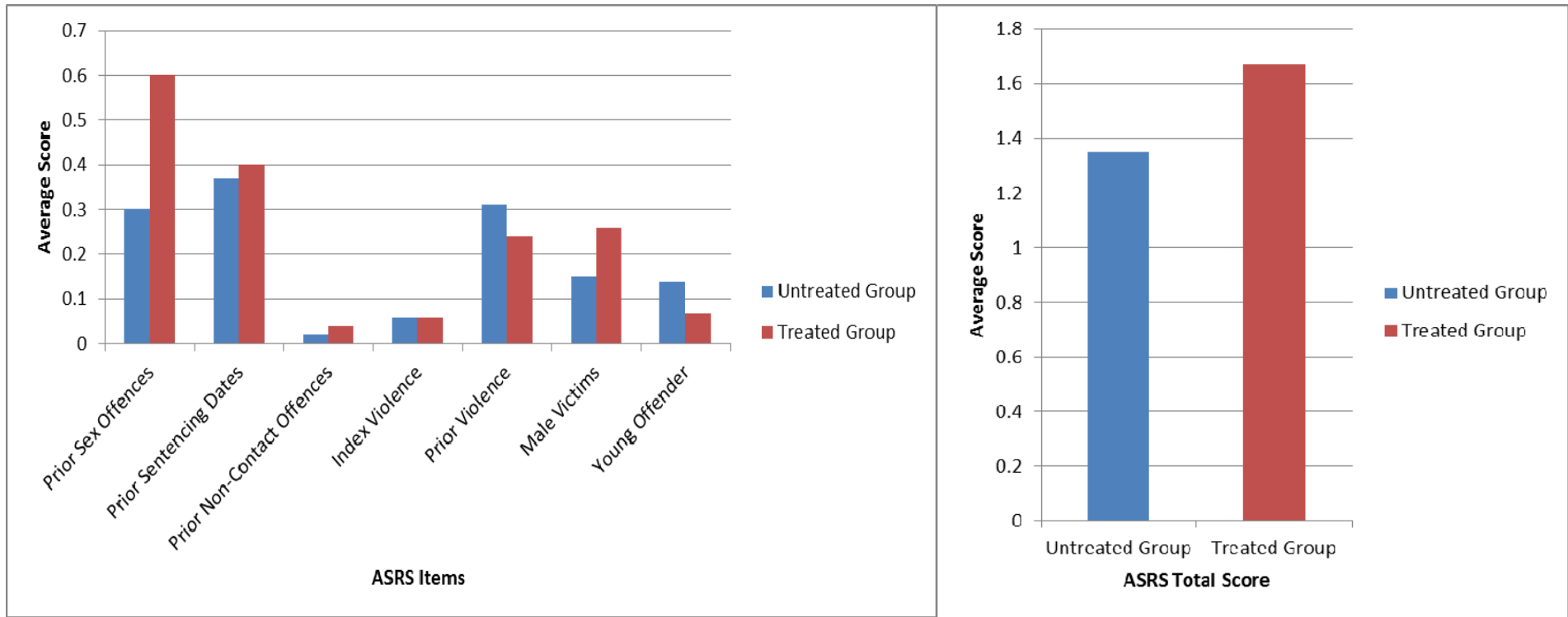
Figure 2: Frequency Distribution of Average Scores on ASRS items and ASRS total score for both Untreated and Treated Offenders
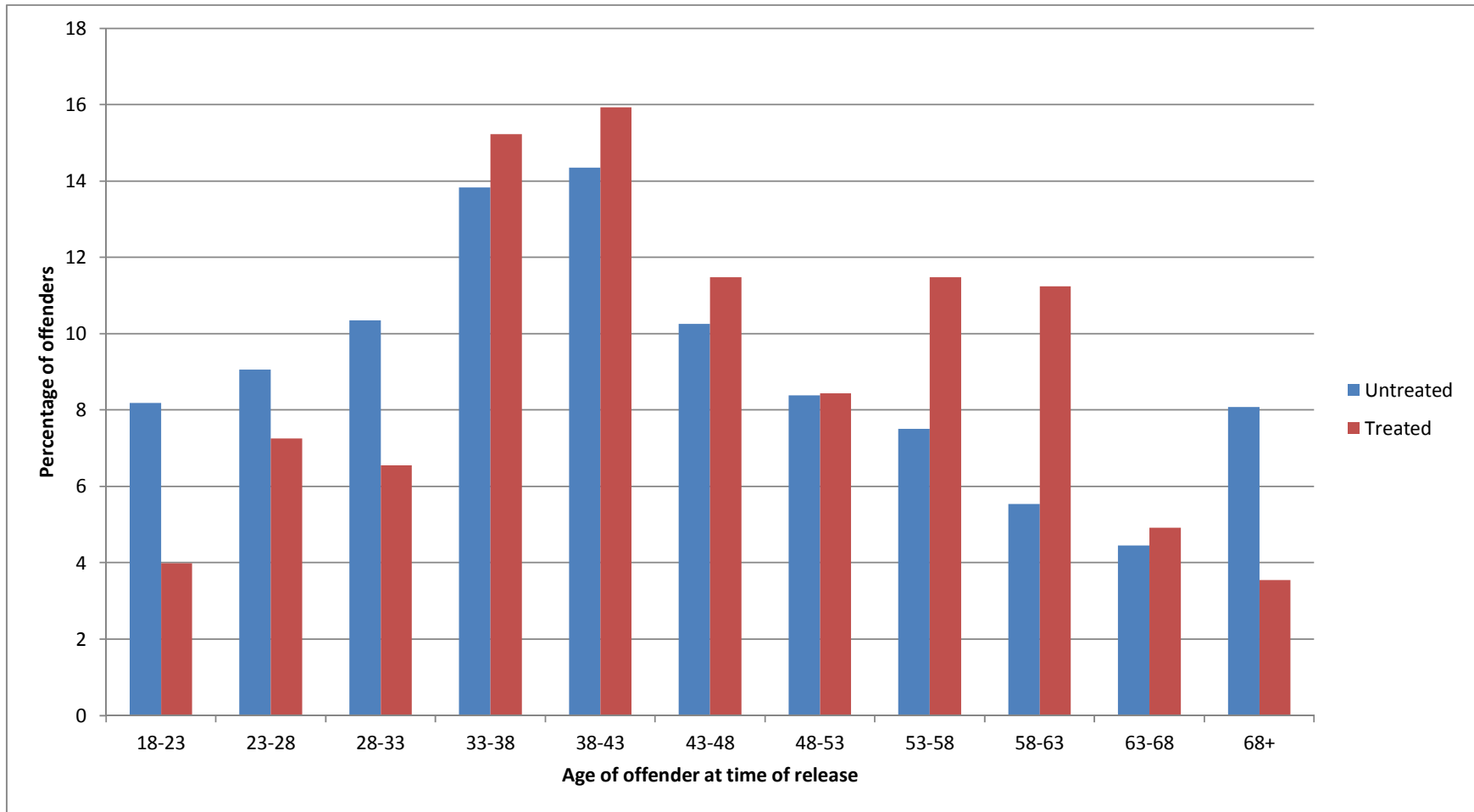
Figure 3. Frequency Distribution of Age of Treated and Untreated Offenders at Time of Release

Variable	Untreated M (SD)	Treated M (SD)	T	d
ASRS variables				
Prior Sex Offences	0.30 (0.74)	0.60 (1.00)	-6.92***	-0.34
Prior Sentencing Dates	0.37 (0.48)	0.40 (0.49)	-1.13	-0.06
Prior Non-Contact Offences	0.02 (0.14)	0.04 (0.19)	-2.02***	-0.12
Index Violence	0.06 (0.23)	0.06 (0.24)	-0.47	0
Prior Violent Offences	0.31 (0.46)	0.24 (0.43)	3.03*	0.16
Male Victims	0.15 (0.36)	0.26 (0.44)	-5.83***	-0.27
Young Offender	0.14 (0.34)	0.07 (0.25)	4.01***	0.23
Total Score	1.35 (0.35)	1.67 (1.65)	-4.22***	-0.27
Sentence Variables				
Sentence Duration	684.70 (780.00)	1101.71 (885.33)	-9.70***	-0.50
Time at Large	2352.20 (1119.46)	2187.79 (1264.14)	2.69***	0.14
Other Offence Variables				
Prior Driving/Admin Offences	3.76 (7.13)	2.97 (5.86)	2.13***	0.12
Prior Drug Offences	1.17 (2.73)	0.88 (1.90)	2.12***	0.12
Prior Property Offences	3.45 (11.10)	6.61 (30.55)	-3.62***	-0.14

Table 2: Means and Standard Deviations of Offender Characteristics for the total sample
* p < 0.05
** p < 0.01
*** p < 0.005

given in Chapter 2). The raw scores for all the prior sex offence categories (excluding bestiality and incest due to the low number of these offences that were recorded) were recoded allow for the assumptions of a chi-square analysis to be met and to reduce the positive skew. The prior sex offences were recoded as follows: 0 was kept as 0; 1 was also kept as 1; 2 and 3 were both recoded as 2; 4 or above was recoded as 3. The percentage of offenders who had a previous conviction for a sexual offence was calculated. This calculation was made for each category of sex offence, in addition to a chi-square measure of significance. The results can be seen below in Table 3.

Table 3 highlights some substantial differences between the untreated and treated groups. The percentage of offenders in the treated group who had previous sexual convictions for offences against a male victim between 12 and 16 years of age was significantly higher than in the untreated group ;1.23% of the untreated offenders as opposed to 3.50% of the treated offenders ($\chi^2(3, N = 2384) = 20.46, p < 0.005$). A similar difference was found for offences against a male victim over 16 years of age,

where 0.51% of the untreated offenders had a prior offence and 2.10% of the treated offenders had a prior offence ($\chi^2(3, N = 2384) = 11.73, p < 0.01$) and for other contact

Variable	Untreated	Treated	Pearson Chi-Square
Bestiality	0.05%	0%	.22
Incest	0.66%	0.70%	.01
F < 12	5.93%	9.58%	9.93*
F 12-16	4.75%	7.94%	7.22*
F < 16	0%	0.23%	4.57*
F > 16	2.25%	4.21%	5.89
M < 12	1.79%	2.80%	3.02
M 12-16	1.23%	3.50%	20.46***
M < 16	0.92%	0%	3.97
M > 16	0.51%	2.10%	11.73**
Victim < 16	0.66%	0.93%	4.77
Other	0.10%	0.23%	5.01
Other Contact	4.04%	9.35%	23.57***
Porn/Non-contact	1.74%	2.10%	1.46
Subnormal Victim	0%	0%	-

Table 3: Percentage of offenders in the untreated and treated group who had prior offences in each sex offence category
Note: See Chapter 2 for a detailed description of each sex offence category
* p < 0.05
** p < 0.01
*** p < 0.005

offences where the sex or age of victim was unspecified; 4.04% of the untreated offenders had a prior such offence compared to 9.35% of the treated offenders ($\chi^2(3, N = 2384) = 23.57, p < 0.005$).

The treated group also had a significantly higher percentage of offenders who had previous convictions for offences against a female victim under 12 years of age (9.58%) than the untreated group (5.93%), ($\chi^2(3, N = 2384) = 9.93, p < 0.05$), and against a female victim between 12 and 16 years of age, 7.94% and 4.75% respectively ($\chi^2(3, N = 2384) = 7.22, p < 0.05$). For the remaining categories of sexual offences, (e.g. incest offences, offences against a female over 16 years of age and pornography/non-contact offences) the two groups did not differ significantly with regard to previous convictions.

In summary, Tables 2 and 3 demonstrate that there are substantial differences between the treated and untreated offenders both in terms of offender characteristics and offence history. Table 2 shows that overall the offenders in the untreated group were younger, had shorter sentence durations, more prior violent, drug and driving/administration offences and a lower total ASRS score. By contrast, the

offenders in the treated group were older, had longer sentence durations, more prior sexual, non-contact and property offences, more male victims and a higher total ASRS score. The results from Table 3 demonstrate that there are also differences in the sexual offending history of the two groups, with significant differences being found in the percentages of offenders who had prior convictions on 6 of the 15 sex offence categories. Overall, more offenders in the treated group had prior convictions for sexual offences than offenders in the untreated group.

Goal 2: Describe recidivism results - sexual, violent and general - for the treated group and the untreated group; in addition to examining the relationships between offence history variables and recidivism.

Descriptive statistics were calculated to observe the sexual, violent and general recidivism rates of the two groups. Recidivism was defined as a charge or conviction for a criminal offence that occurred after release from incarceration for the index offence. The index offence is defined as the sexual offence that led to their initial incarceration and inclusion in the total sample. The follow-up period for each offender began at the date they were released from prison after their incarceration for the index offence. Sexual recidivism was defined as any charge that was sexual in nature, as classified by the offence codes. Violent recidivism was defined as any charge that was violent in nature, as classified by the offence codes. General recidivism was defined as any other charge that was not sexual or violent in nature, as classified by the offence codes. The percentages of offenders in each group who were charged with a sexual, violent or general offence post-release were calculated and compared with a chi-square test. The results from this analysis can be seen below in Table 4.

Variable	*Control*	*Treatment*	*Pearson Chi-Square*
General	38.24%	32.71%	4.60*
Violent	18.35%	10.28%	16.30***
Sexual	7.52%	7.24%	.04

Table 4: Percentage of offenders in the control and treatment group who were charged with a general, violent or sexual offence post-release
* p < 0.05
** p < 0.01
*** p < 0.005

The results in Table 4 show significant differences between the two groups in how many offenders were charged with a new offence post-release. Significantly more offenders in the untreated group were charged with a new general offence post-release than in the treatment group, with 38.24% of the untreated offenders and 32.71% of the treated offenders being charged with a new general offence (χ^2(1, N = 2384) = 4.60, p < 0.05). Approximately twice as many offenders in the control group were also charged with a new violent offence post-release than in the treatment group, with 18.35% of the untreated offenders and 10.28% of the treated offenders being charged with a new violent offence (χ^2(1, N = 2384) = 16.30, p < 0.005). However, the percentages of offenders charged with a new sexual offence post-release were almost identical for the control and treatment groups, with 7.52% of the untreated group and 7.24% of the treated group being charged with a new sexual offence.

Additionally, the recidivism rates for the offenders in the treated group who did not complete the treatment programme were investigated, as it is often suggested that treatment drop-outs have a higher risk of recidivism than any other group of offenders (Quinsey et al., 1993). Of the 19 offenders who did not complete treatment, 2 offenders were charged with a new sexual offence, 6 with a new violent offence and 14 with a new general offence. This corresponds to sexual recidivism rates of 10.53%, violent recidivism rates of 31.58% and general recidivism rates of 73.68%. When compared with the offenders who did complete treatment, the difference in sexual recidivism rates was not significant (χ^2(1, N =428) = .32, p < 0.572). However, there was a significant difference between violent recidivism rates (χ^2(1, N = 428) = 9.78, p < 0.005). and general recidivism (χ^2(1, N = 428) = 15.17, p < 0.001).

Figure 4 shows the survival curves (the proportion of offenders who have not been charged with a new sexual offence as a function of follow-up time) for the untreated and treated groups, obtained using the Kaplan-Meier method. The difference in rates of sexual recidivism was not significant (Log Rank statistic = 0.03, p < 0.86).

For those that reoffended, the average time to a new sexual offence was 1045.04 days (2.86 years), for the untreated offenders and 858.71 days (2.35 years), for the treated offenders. The difference was not significant, (t (176) = 1.10, p = .273). The corresponding medians were 865 and 577 days, respectively, and values ranged from 0 to 3718 days for the untreated group, and 5 to 3296 for the treated group.
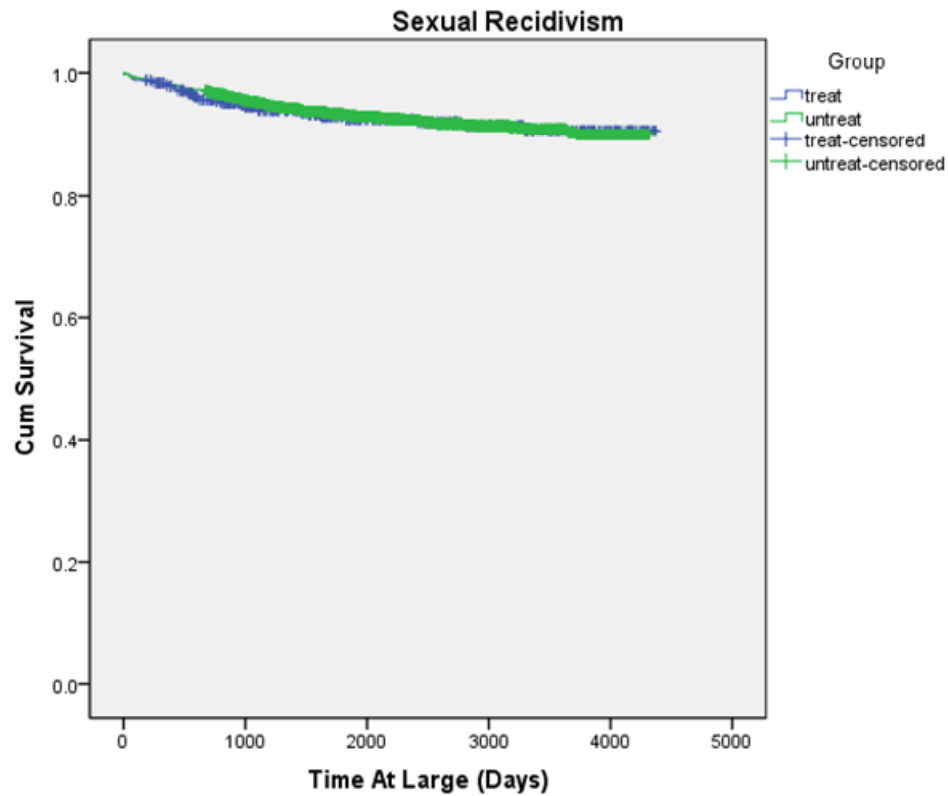
Figure 4: Survival Curve of Sexual Recidivism Rates for Treated and Untreated Offenders

Figure 5 shows the survival curves of violent recidivism for the untreated and untreated groups, obtained using the Kaplan-Meier method. The difference in rates of violent recidivism was significant (Log Rank statistic = 21.33, $p < 0.001$).

For those that reoffended, the average time to a new violent offence was 953.24 days, or 2.61 years, for the untreated offenders and 1221.52 days, or 3.35 years, for the treated offenders. The difference was significant (t (455) = -2.10, $p < 0.05$). The corresponding medians were 753 and 1030.5 days, respectively, and values ranged from 1 to 3756 days for the untreated group, and 5 to 3296 for the treated group.

Figure 6 shows the survival curves of general recidivism for the untreated and treated groups, obtained using the Kaplan-Meier method. The difference in rates of general recidivism was significant (Log Rank statistic = 8.28, $p < 0.05$). For those that reoffended, the average time to a new general offence was 685.17 days, or 1.88 years,

for the untreated offenders and 736.37 days, or 2.02 years, for the treated offenders. The difference was not significant (t (960) = -.73, $p < 0.464$). The corresponding medians were 400 and 410 days, respectively, and values ranged from 0 to 3946 days for the untreated group, and 0 to 3680 for the treated group.
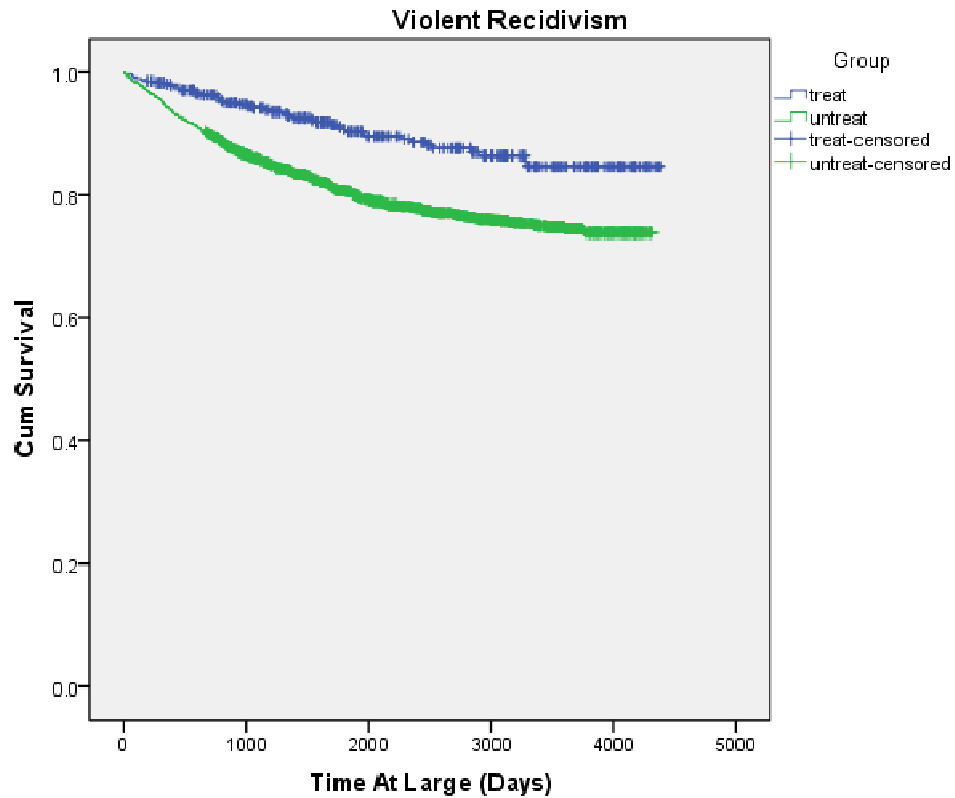
Figure 5: Survival Curve of Violent Recidivism Rates for Untreated and Treated Offenders

The results from Table 4, and Figures 4, 5 and 6, demonstrate that more offenders in the untreated group were charged with a new general or violent offence post-release, but approximately equal percentages of offenders in each group were charged with a new sexual offence post-release. Additionally, the rate of violent recidivism was significantly faster for untreated offenders than for treated offenders, with treated offenders spending more time at large before being charged with a new violent offence. Although the lack of a significant difference in rates of sexual recidivism might seem on the surface suggest that the Kia Marama program was not successful in terms of reducing re-offending, there were significant differences between the groups in terms of offence history such that the treated group presented a

higher risk profile. Any such increased risk needs to be taken into account before reaching a conclusion about group differences in sexual recidivism. To control for differences in risk, we planned to develop a model that could predict recidivism, and then assess whether group differences were significant. As a preliminary step to this, we examined the correlations between offence history variables and recidivism separately for both groups.
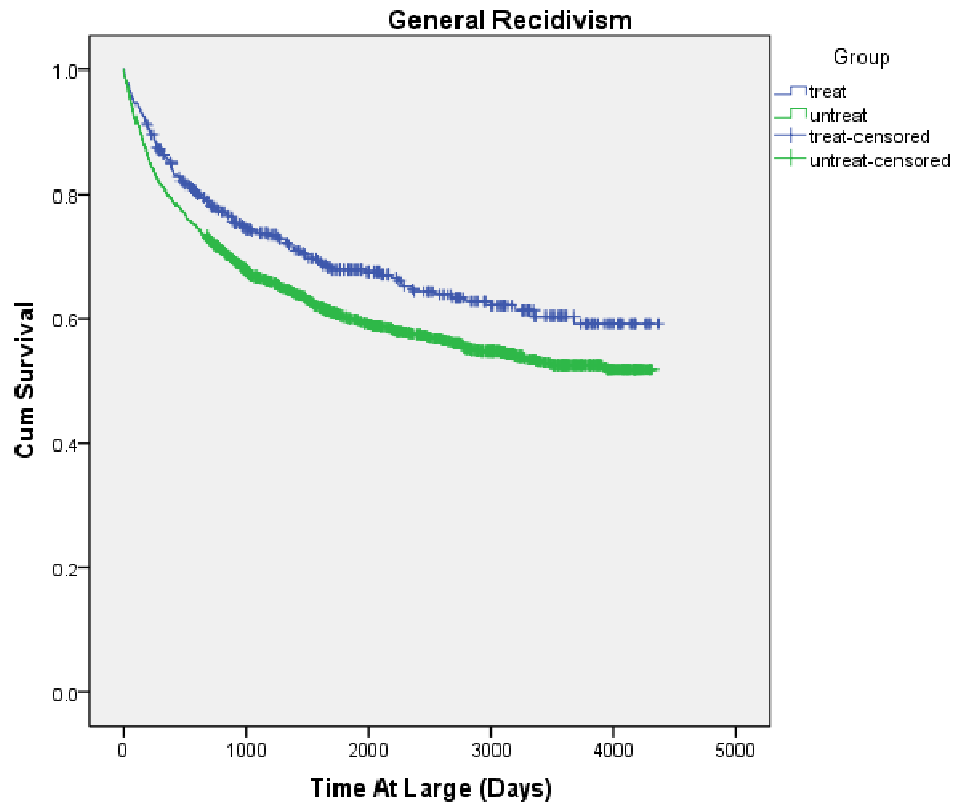
Figure 6: Survival Curve of General Recidivism Rates for Untreated and Treated Offenders

A separate analysis was completed for general, violent and sexual recidivism. Some of the offence history variables were log transformed and/or recoded in order to reduce the positive skew. For each analysis, the same variables were used: The ASRS component items and total score, the recoded prior sexual offence categories and other recoded offence history variables. The other offence history variables that were recoded included the number of prior driving/administration offences and the number of prior property offences. The number of prior drug/administration offences was coded as follows: 0 was kept as 0, 1 was kept as 1, 2 and 3 were coded as 2, 4-9 was

coded as 3, and 10 or above was coded as 4. The number of prior property offences was also recoded, as follows: 0 was kept as 0, 1 was kept as 1, 2 was kept as 2, 3 was kept as 3, 4-7 was coded as 4, 8-11 was coded as 5, 12-14 was coded as 6, and 15 or above was coded as 7. Variables that were log transformed were: number of prior sentencing dates, number of prior sentencing dates, number of male victims, number of prior violent offences, number of prior driving/administration offences, number of prior drug offences, number of prior property offences, number of prior 'other contact' sexual offences, number of prior general offences, number of prior sex offences against a male victim, number of prior sex offences against a female victim, number of prior sex offences against a young victim, and sentence duration.. The results for the correlations between offence history variables and sexual, violent and general recidivism can be seen in Tables 5, 6 and 7, respectively.

Table 5 shows some small-to-moderate positive correlations between offence history variables and sexual recidivism for both groups. For the untreated group, the ASRS items 'prior sex offences' ($r = 0.12$) and 'prior sentencing dates' ($r = 0.10$) in addition to the total ASRS score ($r = 0.16$) were significantly positively correlated with sexual recidivism. For the treated group, the ASRS items 'prior sex offences' ($r = .22$), 'prior sentencing dates ($r = 0.23$), 'prior non-contact convictions' ($r = 0.10$) and 'prior violence' ($r = 0.16$) in addition to the total ASRS score ($r = 0.27$) were significantly positively correlated with sexual recidivism.

Only one prior sexual offence variable was positively correlated with sexual recidivism for the untreated group; contact offences where the age or sex of the victim was unspecified ($r = 0.11$). Four of the prior sex offence variables were positively correlated with sexual recidivism for the treated group: Offences against a female victim under 12 years of age ($r = 0.15$), offences against a male victim between 12 and 16 years of age ($r = 0.19$), offences against a male victim over 16 years of age ($r = .16$) and pornography/non-contact offences ($r = 0.18$).

For both groups, all of the other offence history variables were positively correlated with sexual recidivism: Number of prior driving/administration offences (untreated $r = 0.10$; treated $r = .22$), number of prior drug offences (untreated $r = 0.13$; treated $r = .13$) and number of prior property offences (untreated $r = 0.12$; treated $r = .24$).

The log-transformed variables were both positively correlated with sexual recidivism for the untreated group and for the treated group; 'number of prior

sentencing dates' (untreated $r = 0.13$; treated $r = 0.26$) and 'number of prior sex offences' (untreated $r = 0.14$; treated $r = 0.24$).

Differences between the correlations with recidivism for the two groups were compared with Fisher's z tests. There was a significant difference between the groups' correlations on ASRS item 'prior sentencing dates' ($z = -2.11$, $p < 0.05$) the ASRS total score ($z = -1.96$, $p < 0.05$). Additionally, there were significant differences between the correlations for four prior sex offence variables: Offences against a

Variable	Untreated	Treated	Z
ASRS Variables			
Prior Sex Offences	.12	.22	-1.93
Prior Sentencing Dates	.10	.21	-2.11*
Prior Non-contact Offences	.05	.09	-0.75
Index Violence	.01	-.04	0.75
Prior Violence	.07	.16	-1.71
Male Victims	.04	.04	0
Young Offender	.06	.07	-0.19
Total Score	.16	.26	-1.96*
Sex Offence Variables			
Bestiality	-.01	-	-
Incest	.00	-.02	0.37
F < 12	.03	.15	-2.26*
F 12-16	.02	.04	-0.37
F <16	-	-.01	-
F >16	.07	.02	0.94
M < 12	.04	.03	0
M 12-16	.06	.19	-2.47**
M <16	.06	-	-
M > 16	.04	.16	-2.27*
Victim < 16	.01	.05	-0.75
Other	-.01	-.01	0
Other Contact	.11	.08	0.57
Porn/Non-contact	.05	.18	-2.47*
Subnormal Victim	-	-	-
Other Offence Variables			
Prior Driving/Admin Offences	.10	.22	-2.30*
Prior Drug Offences	.13	.13	0
Prior Property Offences	.12	.24	-2.32*
LOG Variables			
No. Prior Sentencing Dates (Log)	.13	.26	-2.53*
No. Prior Sex Offences (Log)	.13	.24	-2.13*

Table 5: Correlations between offence history variables (including selected log-transformed variables) and sexual recidivism, shown separately for each group
* p < 0.05
** p < 0.01
*** p < 0.005

female victim under 12 years of age (z = -2.26, p < 0.05), offences against a male victim between 12 and 16 years of age (z = -2.47, p < 0.01) against a male victim over 16 years of age (z = -2.27, p < 0.05) and pornography/non-contact offences (z = -2.47, p < 0.05). There were also significant differences between the groups' correlations on number of prior driving/administration offences (z = -2.30, p < 0.05), number of prior property offences (z = -2.32, p < 0.05) and the log-transformed variables; both 'number of prior sentencing dates' (z = -2.53, p <0.05) and 'number of prior sex offences' (z = -2.13, p < 0.05). In each case, the correlation was greater for

Variable	Untreated	Treated	Z
ASRS Variables			
Prior Sex Offences	.02	.01	-0.19
Prior Sentencing Dates	.27	.24	0.60
Prior Non-contact Offences	.00	.01	-0.19
Index Violence	.09	.01	1.50
Prior Violence	.29	.24	1.00
Male Victims	-.08	-.12	0.75
Young Offender	.22	.16	1.16
Total Score	.23	.13	1.93
Sex Offence Variables			
Bestiality	-.01	-	-
Incest	-.04	-.03	-0.19
F < 12	.00	-.05	-0.93
F 12-16	-.01	-.02	0.19
F <16	-	-.02	-
F >16	.05	.13	-1.51
M < 12	-.03	.08	-2.06*
M 12-16	-.05	.09	-2.62**
M <16	-.02	-	-
M > 16	-.03	-.01	-0.37
Victim < 16	-.01	.04	-0.93
Other	.01	-.02	-0.56
Other Contact	-.01	0	-0.19
Porn/Non-contact	-.01	-.05	0.75
Subnormal Victim	-	-	-
Other Offence Variables			
Prior Driving/Admin Offences	.28	.21	1.39
Prior Drug Offences	.27	.15	2.35*
Prior Property Offences	.30	.21	1.80
LOG Variables			
No. Prior Sentencing Dates (Log)	.29	.24	1.00
No. Prior Sex Offences (Log)	-.02	.00	-0.37

Table 6: Correlations between offence history variables (including selected log-transformed variables) and violent recidivism, shown separately for each group
* p < 0.05
** p < 0.01
*** p < 0.005

the group. Overall, the number of significant differences in the correlations shows that the treated and untreated groups are heterogeneous in terms of the relationship between offence history variables and sexual recidivism.

Correlations with violent recidivism are shown in Table 6. Similar to sexual recidivism, for both groups there were small-to-moderate correlations between offence history and violent recidivism. For both groups, three ASRS items and the total score were positively correlated with violent recidivism: 'prior sentencing dates'

Variable	Untreated	Treated	Z
ASRS Variables			
Prior Sex Offences	-.01	.14	-2.82***
Prior Sentencing Dates	.36	.36	0
Prior Non-contact Offences	.00	.10	-1.87
Index Violence	.08	.04	0.75
Prior Violence	.32	.30	0.21
Male Victims	-.09	-.02	-1.31
Young Offender	.28	.22	1.20
Total Score	.30	.31	-0.41
Sex Offence Variables			
Bestiality	-.02	-	-
Incest	-.04	-.06	0.37
F < 12	-.02	.11	-2.44*
F 12-16	-.01	.01	0
F <16	-	.07	-
F >16	.06	.05	0
M < 12	-.03	.02	-0.93
M 12-16	.01	.07	-1.12
M <16	-.01	-	-
M > 16	-.03	.04	-1.12
Victim < 16	-.02	-.02	0
Other	0.00	-.03	0.56
Other Contact	.02	.07	-0.94
Porn/Non-contact	-.02	.07	-1.68
Subnormal Victim	-	-	-
Other Offence Variables			
Prior Driving/Admin Offences	.38	.41	-0.66
Prior Drug Offences	.30	.22	1.60
Prior Property Offences	.34	.45	-2.44*
LOG Variables			
No. Prior Sentencing Dates (Log)	.37	.45	-1.80
No. Prior Sex Offences (Log	-.01	.11	-2.25*

Table 7: Correlations between offence history variables (including selected log-transformed variables) and general recidivism, shown separately for each group
* p < 0.05
** p < 0.01
*** p < 0.005

(untreated $r = 0.27$; treated $r = 0.24$), 'prior violence' (untreated $r = 0.29$; treated $r = 0.24$), 'young offender' (untreated $r = 0.22$; treated $r = 0.16$) and the ASRS total score (untreated $r = 0.23$; treated $r = 0.13$). For the untreated group, none of the prior sexual offence variables were correlated with violent recidivism, and for the treated group, only one of the prior sexual offence variables was positively correlated with violent recidivism; offences against a female victim over 16 years of age ($r = 0.13$).

In addition, all three of the other offence history variables were positively correlated with violent recidivism for the untreated group and the treated group; number of prior driving/administration offences (untreated $r = 0.28$; treated $r = .21$), number of prior drug offences (untreated $r = 0.27$; treated $r = 0.15$) and number of prior property offences (untreated $r = 0.30$; treated $r = 0.21$).

Finally, the log-transformed 'number of prior sentencing dates' variable was positively correlated with violent recidivism for both groups (untreated $r = 0.29$; treated $r = 0.24$).

There were some significant differences between groups in terms of correlations with violent recidivism. Correlations were significantly greater for the treated group for offences against a male victim under 12 years of age ($z = -2.06$, $p < 0.05$), offences against a male victim between 12 and 16 years of age ($z = -2.62$, $p < 0.01$), but significantly greater for the untreated group for number of prior drug offences ($z = 2.35$, $p < 0.05$).

Table 7 shows correlations between offence history variables and general recidivism. Again results were similar to those for sexual and violent recidivism, although some of the correlations were higher, consistent with the greater base rate of general recidivism. For both groups, multiple ASRS items were positively correlated with general recidivism; 'prior sentencing dates' (control $r = 0.36$; treatment $r = .0.36$), 'prior violence' (control $r = 0.32$; treatment $r = 0.30$) and 'young offender' (control $r = 0.28$; treatment $r = 0.22$) in addition to the total ASRS score (control $r = 0.30$; treatment $r = 0.31$).

There were also two ASRS items that were positively correlated with general recidivism for the treated group alone; 'prior sex offences' ($r = 0.14$) and 'prior non-contact convictions' ($r = 0.10$).

The three non-sexual offence history variables were positively correlated with general recidivism for both the untreated and the treated group; number of prior

driving/administration offences (untreated $r = 0.38$; treated $r = .41$), number of prior drug offences (untreated $r = 0.30$; treated $r = .22$) and the number of prior property offences (untreated $r = 0.34$; treated $r = .45$).

None of the prior sexual offence variables were correlated with general recidivism for the untreated group, whereas two were correlated with general recidivism for the treated group: offences against a female victim under 12 years of age ($r = 0.13$) and non-contact or pornography offences ($r = 0.10$).

The log-transformed 'number of prior sentencing dates' variable was positively correlated with general recidivism for both the untreated group ($r = 0.37$) and the treated group ($r = 0.45$). The log-transformed 'number of prior sex offences' variable was also positively correlated with general recidivism for the treated group ($r = 0.11$) but not for the untreated group.

When the differences between the correlations for the two groups were calculated, there were significant differences in the groups' correlations on one of the ASRS items; 'prior sex offences' ($z = -2.82$, $p < 0.005$). There were also significant differences in the groups' correlations between one of the prior sexual offence variables; offences against a female victim under 12 years of age ($z = -2.44$, $p < 0.05$). Lastly, significant differences in the groups' correlations were also found on the number of prior property offences ($z = -2.44$, $p < 0.05$) and on the log-transformed 'number of prior sex offences' variable ($z = -2.25$, $p < 0.05$). In each case, the correlation was stronger for the treated group.

Overall, the results from Tables 5, 6 and 7 indicate that a range of offence history variables have positive correlations, though generally small, with recidivism. Correlations were typically larger for violent and general recidivism than for sexual recidivism, consistent with the overall base rates for each type of recidivism. However, results also show that the relationships between offence history and recidivism differed for the groups, and generally were stronger for the treated offenders. This suggests that the groups were heterogeneous in terms of the relationships between static risk predictors (i.e., offence history variables) and recidivism. This heterogeneity has implications for the modelling analysis, described below, in which we attempt to determine whether the rates of sexual recidivism are significantly different for the treated and untreated groups after controlling for differences in risk.

Goal 3: Develop a predictive model for recidivism (sexual, violent and general) and test for group differences after the different levels of the predictive variables are controlled for.

The primary goal of the present study was to assess whether rates of recidivism (sexual, violent and general) were different for the treated and untreated groups after controlling for differences in risk level. To accomplish this, for each type of recidivism we developed predictive models for recidivism using forward stepwise logistic regression, with ASRS items and offence history variables (including log-transformed variables) as potential predictors. The criterion for entering a variable was that it had to result in a significant increase in the overall model fit ($p < .05$). We then tested whether group (treated vs. untreated) was significantly related to recidivism in addition to the variables identified by the stepwise regression. AUC values were calculated for each group separately, and we interpreted the coefficient for the Group variable (dummy coded as 0 = untreated, 1 = treated) in terms of an expected rate of recidivism in the absence of treatment.

The heterogeneity identified previously in terms of differences in relationships between offence history variables and recidivism is of particular concern because of the unequal sample sizes (Ns = 428 and 1956 for the treated and untreated groups, respectively). Thus the study constitutes an unbalanced design (Rawlings, Pantula & Dickey, 1998), and to compensate for this we used a weighting variable so that the two groups would have equal impact in terms of estimating coefficients for the models. The weights were defined as $0.5 / (N_{treat} / [N_{treat} + N_{untreat}])$ and $0.5 / (N_{untreat} / [N_{treat} + N_{untreat}])$ and equalled 2.785 and 0.609 (3dp) for the treated and untreated groups, respectively. In this way, the power associated with the overall sample size ($N = 2384$) was maintained but the estimated coefficients would not be biased in favour of the untreated group. (Note: This strategy required us to use logistic regression rather than survival analysis as the primary analysis, because fractional case weights are not available for Cox Regression in SPSS v. 19).

Sexual Recidivism

The stepwise regression analysis identified four significant predictor variables for sexual recidivism, as shown in Table 8: Offenders who were young (< 25 years old) at the time of release, and had more prior sentencing dates (log), more prior sex offences (log), and more prior sex offences with a male victim between 12 and 16

years of age (log), were more likely to be charged with a new sexual offence. The model performed well in predicting recidivism for the treated group, with an AUC = .807, and accuracy was somewhat lower for the untreated group, AUC = .675 (Table 11). The Nagelkerke R^2 value was .143.

When the Group variable was entered at the second step (Table 8), the improvement in overall fit of the model was significant, (χ^2 (1, N = 2382) = 4.08, p < 0.05). The exponentiated coefficient (Exp(B)) for Group was .706, indicating that participation in treatment was associated with a .706 reduction in the odds of sexual recidivism. Because the obtained odds of sexual recidivism for the treatment group was .072 / (1 - .072) = .078, the expected odds of recidivism in the absence of treatment is .078 / .706 = .111 (3 dp). This translates into an expected probability of recidivism of .100. Thus, results of the model analysis demonstrated that after taking differences in covariates (i.e., risk factors) into account, the treated group sexually re-offended at a significantly lower rate (7.2%) when compared with the expected recidivism rate (10%).

		B	Exp(B)
Step 1	Young Offender	1.281	3.601***
	# Prior Sentencing Dates (Log)	1.267	3.550***
	# Prior Sex Offences (Log)	1.135	3.112***
	# Prior SO:M12-16 (Log)	2.187	8.906***
Step 2	Young Offender	1.241	3.459***
	# Prior Sentencing Dates (Log)	1.303	3.680***
	# Prior Sex Offences (Log)	1.231	3.423***
	# Prior SO:M12-16 (Log)	2.252	9.509***
	Group	-.348	.706

Table 8: Stepwise regression analysis for sexual recidivism
* p<.05, **p<.01, *** p<.005

Violent Recidivism

The stepwise regression analysis identified five significant predictor variables for violent recidivism, as shown in Table 9: Offenders who had more prior sentencing dates, were young (< 25 years old) at the time of release, more prior driving/administration offences (log) and more prior sexual offences against male victims (log), but fewer prior sexual offences overall (log), were more likely to be charged with a new violent offence. The model performed well in predicting

recidivism for the treated group, with an AUC = .792, and for the untreated group, with an AUC = 0.794 (Table 11). The Nagelkerke R^2 value was .273.

When the Group variable was added at the second step (Table 9), the improvement in overall fit of the model was significant, (χ^2 (1, N = 2382) = 26.08, p < 0.001). The exponentiated coefficient (Exp(B)) for Group was .507, indicating that participation in treatment was associated with a .507 reduction in the odds of violent recidivism. Because the obtained odds of violent recidivism was .103 / (1 - .103) = .115, the expected odds of recidivism in the absence of treatment is .115 / .507 = .226 (3 dp). This corresponds to an expected probability of recidivism of .184. Thus, results of the model analysis demonstrated that after taking differences in covariates (i.e., risk factors) into account, the treated group violently re-offended at a significantly lower rate (10.3%) when compared with the expected recidivism rate based on the statistical model (18.4%).

		B	Exp(B)
Step 1	Prior Sentencing Dates	.784	2.190***
	Young Offender	2.029	7.606***
	# Prior Sex Offences (Log)	-1.298	.273***
	# Prior Violent Offences (Log)	2.063	7.871***
	# PriorDriving/Admin Offences (Log)	.552	1.736**
	# Prior SO:Male (Log)	1.562	4.770*
Step 2	Prior Sentencing Dates	.864	2.373***
	Young Offender	1.954	7.060***
	# Prior Sex Offences (Log)	-1.033	.356***
	# Prior Violent Offences (Log)	2.020	7.542***
	# PriorDriving/Admin Offences (Log)	.458	1.581*
	# Prior SO:Male (Log)	1.546	4.693**
	Group	-.678	.507***

Table 9: Stepwise regression analysis for violent recidivism
*p<.05, **p<.01, ***p<.005

General Recidivism

The stepwise regression analysis identified three significant predictor variables for general recidivism, as shown in Table 10: Offenders who were young (< 25 years old) at the time of release, had more prior violent offences (log) and more prior general offences (log) were more likely to be charged with a new general offence. The model performed well in predicting recidivism for the treated group, with an AUC = .804, and for the untreated group, with an AUC = .791 (Table 11). The Nagelkerke R^2 value was .341.

When the Group variable was added at the second step (Table 10), the improvement in overall fit of the model was significant, (χ^2 (1, N = 2382) = 10.38, $p <$ 0.01). The exponentiated coefficient (Exp(B)) for Group was .724, indicating that participation in treatment was associated with a .724 reduction in the odds of general recidivism. Because the obtained odds of general recidivism was .327 / (1 - .327) = .486, the expected odds of recidivism in the absence of treatment is .486 / .724 = .672 (3 dp), giving an expected probability of recidivism of .402. Thus, results of the model analysis demonstrated that after taking differences in covariates (i.e., risk factors) into account, the treated group generally re-offended at a significantly lower rate (32.7%) when compared with the recidivism rate predicted by the statistical model (40.2%).

Thus, results of the model analyses show that for each type of recidivism – sexual, violent, and general – the reoffence rate for the treated group was significantly less than the untreated group after controlling for risk factors defined by a best-fitting model obtained by stepwise regression. The unadjusted reoffence rates for violent and general recidivism were previously shown to be significantly lower for the treated group (Figures 4 and 5), so the model analyses confirm that these differences remain significant after controlling for differences in risk factors. The most important result is that for sexual recidivism, because the unadjusted rates were similar for both groups. This shows that the treated group represented an overall higher risk of recidivism in terms of offence history variables, but after controlling for these differences, the recidivism rate for the treated group was less than that for the untreated group.

		B	Exp(B)
Step 1	Young Offender	2.379	10.789***
	# Prior Violent Offences (Log)	.799	2.223***
	# Prior General Offences (Log)	1.700	5.476***
	Young Offender	2.330	10.273***
	# Prior Violent Offences (Log)	.737	2.090***
	# Prior General Offences (Log)	1.723	5.602***
	Group	-.323	.724***

Table 10: Stepwise regression analysis for general recidivism
*p<.05, **p<.01, ***p<.005

Type of Recidivism	AUC value (untreated)	AUC value (treated)
Sexual	.675	.807
Violent	.794	.792
General	.791	.804

Table 11: AUC values of our predictive models for sexual, violent and general recidivism for treated and untreated offenders

Type of Recidivism	AUC value (untreated)	AUC value (treated)
Sexual	.664	.741
Violent	.703	.648
General	.692	.704

Table 12: AUC values of the ASRS for sexual, violent and general recidivism for treated and untreated offenders

Finally, we investigated how well the ASRS predicted each type of recidivism separately for the treated and untreated groups. Results are shown above in Table 12.

The ASRS performed well in predicting sexual recidivism, with an AUC = .741 for the treated group and an AUC = .664 for the untreated group. The ASRS also performed well in predicting violent recidivism, with an AUC = .648 for the treated group and an AUC = .703 for the untreated group, and well in predicting general recidivism with an AUC = .704 for treated offenders and an AUC = .692 for untreated offenders. The predictive accuracy of the ASRS for sexual, violent and general recidivism was slightly less than the predictive accuracy of the models we generated.

Chapter 4: Summary, Discussion and Conclusions

Summary of the study

The primary goal of the present study was to determine whether rates of sexual, violent and general recidivism for sexual offenders against children who attended Kia Marama, a prison-based special treatment unit ('treated group'), were lower than for similar offenders who did not attend Kia Marama or a similar unit while incarcerated ('untreated group'). We carried out a detailed comparison of the offence histories for both groups. This investigation into details of the prior offence history also addressed a secondary goal of the present study: Whether it was possible to select a matched comparison group for treated offenders in our sample. There were significant differences between the groups. Compared with the untreated group, the treated offenders were more likely to have had more prior sexual offences, more prior sentencing dates, more non-contact offences, a longer sentence duration and a higher ASRS score, whereas the untreated group was more likely to be young (< 25 years old at release) and have a prior violent conviction. Because significant differences in risk factors related to offence history were identified between the groups, we developed predictive models for sexual, violent and general recidivism using stepwise logistic regression. These models identified offence history variables that were significantly correlated with recidivism and could potentially have differed between the treated and untreated groups. We then used the models to estimate the effect of treatment in terms of changes in the relative odds of offending (odds ratio; OR), and whether treatment had a significant effect on recidivism over and above the differences in static risk level. Results of the modelling analyses showed that once differences in risk level were controlled for, treated offenders were significantly less likely to re-offend, sexually, violently, and generally than the untreated offenders. The ORs for the treatment effect were .706, .507, and .724 for sexual, violent, and general recidivism, respectively. However, results highlighted the difficulty in selecting a suitable comparison group of untreated offenders.

Discussion of our findings

The findings from the current study will be examined in the context of the goals that were outlined and utilised in the Method and Results chapters.

Goal 1: Describe the untreated group and treated group in terms of offender characteristics and test for any differences between the two groups.

Our first goal was to compare the treated and untreated groups in terms of ASRS scores and offence history variables. Significant differences were found in sentence duration, other offence history variables and ASRS item scores. On average, offenders in the treated group had a prison sentence that was 1.42 years longer than offenders in the untreated group. This may suggest that those in the treated group had been convicted of more serious offences, such as contact offences (as opposed to non-contact or pornography charges) or offences against younger victims. This finding may also be indicative of treated offenders having a higher number of prior sexual convictions at the criterion hearing date.

A number of significant differences were found between the two groups on the individual ASRS items, as well as the total score. The treated group had more prior sexual and non-contact convictions, more male victims and a higher total ASRS score. Although there was no difference between the average ages of the two groups at release, a breakdown of the age distributions revealed that a higher percentage of untreated offenders were between the ages of 18 and 33, hence the significantly higher score on the young offender ASRS item. The untreated group had more prior violent convictions than the treated group, and were younger, but had fewer prior sexual convictions and lower total ASRS scores. However, it should be noted that the average ASRS total score for both groups was below 2 (out of a possible score of 9). This indicates that both groups were relatively low-risk overall (based on the interpretation of ASRS scores), despite the fact that the treated group did score higher than the untreated group on multiple ASRS items.

We examined the prior sexual offending of the two groups in more detail. Overall, offenders in the treated group had more prior sexual offences. Specifically, they had significantly more prior convictions for offences against a female victim under 12 years of age, a female victim between 12 and 16 years of age, a female victim under 16 years of age, a male victim between 12 and 16 years of age, a male victim over 16 years of age and contact offences where the age of sex of the victim

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was unspecified. In contrast, there was no category of prior sex offence for which the untreated offenders had significantly more convictions. Overall, these results suggest that the two groups presented a heterogeneous risk profile, and raise doubts about whether the untreated offenders can provide a suitable comparison group for the treated offenders.

Goal 2: Describe recidivism results - sexual, violent and general - for the untreated group and the treated group; as well as examining the relationships between offence history variables and recidivism.

There were significant differences in violent and general recidivism between the two groups, with more offenders in the untreated group being charged with a violent or general offence post-release. However, there was no significant difference in sexual recidivism, with the untreated and treated offenders having almost identical rates of sexual recidivism. These results suggest that participation in the Kia Marama programme could reduce the risk of both violent and general recidivism, but whether there is an effect on sexual recidivism is unclear, because the treated group had a higher risk profile than the untreated group. The results from the offender characteristics analyses suggested that the treated offenders should have a higher rate of sexual recidivism than the untreated offenders, given their higher overall ASRS score and history of more prior sexual offending. Therefore, the fact that the treated offenders exhibited a similar rate of sexual recidivism as the untreated offenders could still indicate that the overall risk of recidivism was decreased by treatment for the offenders who attended Kia Marama.

Thus we conducted a set of analyses with the goal of comparing differences in rates of sexual, violent and general recidivism, while taking into account differences in risk factors. As a preliminary step, we investigated correlations of ASRS items and offence history variables with sexual recidivism, separately for both groups. Three of the ASRS items were positively correlated with sexual recidivism for the treated group; prior sex offences, prior sentencing dates and prior violence, in addition to the ASRS total score. For the untreated offenders, prior sex offences, prior sentencing dates and the ASRS total score were positively correlated with sexual recidivism. In addition, the correlations of offence history variables with recidivism were generally larger for the treated group (see Table 5).

The correlational analyses for violent and general recidivism demonstrated that for both groups, multiple predictor variables had moderate or strong positive correlations with recidivism. These were primarily offence history variables that were not linked with sexual offending, such as the numbers of prior driving/administration offences, prior drug offences, and prior property offences. For violent recidivism, correlations ranged from $r = 0.15$ to $r = 0.30$, and for general recidivism, from $r = 0.22$ to $r = 0.45$. These correlations were overall greater than the correlations found for sexual recidivism, which is expected due to the larger base rates of both violent and general recidivism.

As previously noted, an implication of the present results is that finding a suitably matched comparison group for treated sex offenders is a very difficult task. Our sample differed on many offender characteristics and static predictor variables, and there were also differences between the groups in terms of the relationships between predictor variables and recidivism. These differences highlight the heterogeneous risk profiles of the two groups, and, therefore, that the untreated offenders are not an ideal comparison group for the treated offenders in our sample.

One popular methodology for constructing comparison groups that are matched on multiple covariates is known as *propensity score matching* (PSM; Rosenbaum & Rubin, 1984). PSM requires a treated group and a larger sample of potential controls. A logistic regression is carried out in which covariates are used to predict group membership (i.e., treated vs untreated, with treated = 1 and control = 0). The predicted group probabilities are termed 'propensity scores' and a selection algorithm is then used to obtain a sample from the potential controls that does not differ from the treatment group in terms of propensity scores. Duwe and Goldman (2009) used such an approach to obtain a control group of untreated offenders in their evaluation of prison-based treatment for sexual offenders in Minnesota. Duwe and Goldman found that the control group was not significantly different from the treated offenders in terms of both the overall propensity scores and the covariates, and thus that the PSM procedure was successful. We attempted to apply PSM to the present study, but were unable to obtain an unbiased sample of untreated offenders, that is, a sample that was equal in size to the treated offenders but without significantly different propensity scores and covariates. This failure further underscores the heterogeneity of sexual offenders who attend prison-based special treatment units (STUs) in New Zealand and those who do not. The issue of heterogeneous risk

profiles between treated and untreated groups is a hindrance to the study of treatment efficacy for sex offenders, and has been a confounding factor in numerous studies in this field of research (Hanson et al., 2002; Marques et al., 2005).

Goal 3: Develop a predictive model for recidivism (sexual, violent and general) and test for group differences after the different levels of the predictive variables are controlled for.

Because our design was unbalanced (i.e., the untreated group was almost five times as large as the treated group), we used a differential weighting factor so that both groups would have equal influence in terms of estimated coefficients for risk predictors in the stepwise regression analysis. Separate predictive models were generated for sexual, violent and general recidivism. Results showed that the treated offenders re-offended at a significantly lower rate than the untreated offenders, with the obtained coefficients indicating a 29.4% reduction in sexual recidivism (OR = .706), a 49.3% reduction in violent recidivism (OR = .507) and a 27.6% reduction in general recidivism (OR = .724).

The purpose of the differential weighting procedure was to allow the groups to have equal influence on the estimated coefficient, due to the significant heterogeneity in the relationships between covariates and recidivism, while still using all of the data and thus not compromising power. The procedure maintained the level of statistical power (overall $N = 2384$) while equating the influence of the groups on the estimated coefficients. An alternative might have been to obtain a random sample of untreated offenders that was equal in size to the treated group ($N = 428$), and using this sample in the stepwise regression analysis. This would have equated the groups' influence on the coefficients but reduced the power, not used all the data, and been subject to sampling error. It is important to note that if such a sampling procedure were repeated and the model coefficients estimated for each sample (as in a Monte Carlo study), the expected values of the model coefficients would be the same as those obtained using the present procedure. Thus, the estimated OR = .706 for sexual recidivism is the best estimate of the treatment effect for the present data. It is unbiased in that it accords equal influence to both groups and is not subject to sampling error.

Most importantly, this finding provides evidence for the effectiveness of Kia Marama in reducing the risk not only of sexual recidivism, but also violent and

general recidivism. It is noteworthy that the treated offenders showed a lower risk of violent and general recidivism, as it is known that sexual offences sometimes are reduced to violent or general convictions as a result of plea-bargaining, and therefore a reduction in violent and general recidivism may also be suggestive of further reductions in sexual recidivism (Quinsey et al., 1993; Hanson, 2000).

Our results are further strengthened by the fact that we included drop-outs and non-completers in the study, and it has been previously demonstrated that this subgroup of offenders typically presents the highest risk of recidivism post-release (Quinsey et al., 1993, Hanson, 2002. In support of this, we also found that the drop-outs had significantly higher rates of violent and general recidivism. Additionally, the measure of sexual recidivism that we used (charges instead of convictions) is arguably a more sensitive measure of reoffending, as opposed to using convictions or incarcerations (Hanson, 2000).

Statistical Power and Recidivism Base Rates

The difficulty of reaching a desirable level of statistical power in an outcome study on sex offender treatment is also underscored by our findings. Statistical power refers to the likelihood of obtaining a significant result for a statistical test, given that the null hypothesis in fact is false. For example, statistical power in the current study would refer to the probability that we would find a significant effect of treatment if there was an actual difference in recidivism rates between the treated and untreated sex offenders. The smaller the actual difference is between the two groups, the more offenders will need to be included in each group to obtain a desirable level of statistical power. In addition, the lower the base rate of reoffending, the larger the sample size required. For outcome studies with sexual offenders, the problem (statistically speaking) is that the base rates of recidivism are very low.

This issue was discussed by Marentette (2009), who noted that, if untreated offenders exhibited 10% recidivism, and treated offenders exhibited 5% recidivism – which would represent a large reduction (50%) in recidivism – that 600 offenders would still be required for each group to obtain 90% power. This is often extremely difficult in individual studies using a population of sex offenders against children, as the pool of available participants can only match the number of participants that have attended (and normally completed) a treatment programme. For example, only 817

offenders have attended the Kia Marama treatment unit since its inception over 20 years ago. Cognitive-behavioural and relapse-prevention based treatment is intensive and both time- and resource-consuming, and it would take a number of years for most treatment programmes to gain data on enough participants to reach a desirable level of power. Despite the low base rates of sexual recidivism, our study still obtained a statistically significant effect in favour of treatment.

The difficulties that low base rates already pose for statistical power are exacerbated by the decline in rates of sexual offending that have been observed in Western countries (e.g., Lalumiere & Mishra, 2009). Data from New Zealand suggest a similar decline. For example, in 1994, the New Zealand Police recorded 9.8 sexual offences (per 10,000 population), whereas in 2000, the recorded number dropped to 8.6, and decreased again in 2010 to 6.82 sexual offences per 10,000 population (New Zealand Police, 2000, 2010). Furthermore, of these reported sexual offences in 2000, 53.8% were resolved, and in 2010, 60.9% of the sexual offences were resolved (New Zealand Police, 2010). The increase in successful resolution of crimes (i.e. arrest and conviction) will also mean that fewer sexual offenders remain in the community after committing their crimes, which should in turn lead to fewer sexual offences being committed. Reasons for why rates of sexual offending are declining are unclear, and might be attributed to multiple factors, such as policy shifts towards indeterminate sentencing and preventative detention and laws and mandates such as 'Megan's Law' in the United States, and the Child Sex Offenders Register in the United Kingdom (Thomas, 2004). An increase in public awareness of sex offenders against children has led to parents being more protective of their children, and to social workers, health professionals and the police to be more aware of the signs of sexual abuse, and also to historical cases being resolved as more victims come forward to report the abuse they suffered when child molestation was not publicly addressed (Jones et al., 2006).

The problem of obtaining statistical power in individual outcome studies on sex offender treatment emphasises the importance of well-controlled meta-analyses which increase the available participant pool, and therefore the statistical power. Moreover, the complexities involved in obtaining a suitably matched comparison group or reaching desirable statistical power not only advocate the importance of meta-analyses, but also the benefits of assessing individual responses to treatment to

test the efficacy of treatment for sexual offenders. Both of these approaches to assessing treatment efficacy for sex offenders will be considered below.

ASRS

The ASRS showed moderately good predictive accuracy in the present study for sexual, violent and general recidivism, with both treated and untreated offenders, with AUC values ranging from .741 to .648. These results support the previous findings on the predictive accuracy of the ASRS (Skelton et al., 2006; Vess & Skelton, 2010). Although the predictive accuracy of the ASRS was not as strong as the predictive models we generated, our models were tailored to the particular sample we used and it would therefore be expected that they would perform better than an *a priori* measure such as the ASRS which was not optimised for the current data.

However, some of the correlations for individual ASRS items with recidivism failed to reach significance: Prior non-contact convictions, index violence, male victims and young offender were not correlated with recidivism for either group. Moreover, the current study is not the first to find that some of the static items used in the ASRS (originally from the Static-99) were unrelated to sexual recidivism. In a validation study of the Static-99, Sjostedt and Langstrom (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. Although offenders with both contact and non-contact sexual offences were included in the sample, 43% of the 1400 offenders had been charged with child molestation and 45% of the offenders had been charged with adult rape. Despite the fact that the sample included adult sex offenders, as opposed to our sample which included only child sex offenders, the results are comparable to those we obtained with the ASRS, as both the Static-99 and the ASRS were developed for use with sex offenders in general (i.e. adult and child sex offenders). Therefore, all of the items included in either risk measure should correlate with recidivism for any sample of sex offenders, irrespective of the sample composition (Hanson & Thornton, 2000; Skelton et al., 2006). The three items from the Static-99 that were not found to be correlated with sexual recidivism in the Sjostedt and Langstrom (2001) study were also not correlated with sexual recidivism

for the current sample. The combination of these results may raise questions about the utility of some of the ASRS items as appropriate measures of risk for sexual recidivism with any sexual offenders who have been released from prison in the last ten-to-fifteen years. Skelton et al. (2006) did not report ASRS item-recidivism correlations, so it is not possible to compare them with those obtained in the present study. However, it would be interesting to check whether the predictive validity of individual items has changed over time, in terms of optimizing assessment with the ASRS.

Although the ASRS is a relatively new measure of risk assessment, it is based on the earlier Static-99, which was created by Hanson and Thornton over ten years ago (Hanson & Thornton, 2000). Moreover, the validation sample for the ASRS consisted of 3 separate samples of offenders, one released from prison in 1987, one in 1992 and the last in 1997 (Skelton et al., 2006). Therefore, none of the offenders used in the validation sample were released in the last decade, with one sample of offenders released from prison over twenty years ago. It is possible that the characteristics of offenders who were convicted and incarcerated over twenty years ago would be different from offenders who were convicted ten years later, and even more so compared to offenders who are convicted today. There is emerging research to support this idea, with a recent study by Helmus and colleagues concluding that due to the continuing decline in both sexual recidivism rates and the base rates of sexual offending since 1990, new norms are required for the Static-99. It was found that after controlling for Static-99 scores, the rates of violent and sexual recidivism in samples from more contemporary studies (offenders released after 1990 with a combined N = 6,406) were significantly lower than those observed in the validation samples used to develop the norms for the Static-99 (Helmus, Hanson & Thornton, 2009).

Additionally, it is interesting that the 'male victims' item from the ASRS was not positively correlated with sexual recidivism, as the sex offence variables for offences against male victims between 12 and 16 years of age and over 16 years of age had moderately positive correlations with sexual recidivism for the treated offenders. Moreover, the correlation between prior sex offences against a male between 12 and 16 years of age and sexual recidivism was strong enough to warrant its inclusion in the final stepwise model for sexual recidivism. Although relatively few cases had such prior offences, they increased the risk of recidivism substantially.

For example, only 1.2% of cases in the untreated group (21/1956) and 3.5% of cases in the treated group (15/428) had at least one prior sexual offence with a male victim aged 12 to 16. However, of these cases, 20.8% from the untreated group (5/21) and 33.3% (5/15) from the treated group were charged with a new sexual offence. Exactly why such prior offences were associated with increased risk is unclear, but should be examined in future research.

The results from more current studies using more contemporary samples, including our study (which focused on offenders released from prison between 1998 and 2010), will provide valuable information about current predictor variables and offender characteristics. Nonetheless, studies on the predictor variables for sexual recidivism will always be somewhat outdated, to an extent, as follow-up periods need to be at least 5-10 years to allow for recidivism rates to be measured accurately, therefore creating unavoidable cohort effects between offenders currently receiving treatment at the time an outcome study is published and the offender samples that the outcome study is based on (Hanson et al., 2002).

Moreover, one possible explanation for the correlations between the ASRS and sexual recidivism is that the ASRS may demonstrate stronger predictive ability for adult sex offenders, such as rapists. The validation sample used for the ASRS included all types of sexual offenders; child molesters, adult rapists and exhibitionists, and so the instrument could potentially have better predictive accuracy for one subtype of sex offender over another, especially with a contemporary sample. Previous research by Hanson and Bussiére (1998) has concluded that rapists exhibit higher levels of violence than child molesters, and in the current study, some of the ASRS items (such as prior violence, prior sentencing dates and young offender) were significantly more predictive of violent recidivism than sexual recidivism.

Does treatment for sexual offenders work?

Meta-Analyses

Meta-analytic research on sex offender treatment in the last decade has found that, overall, current treatment programmes for sex offenders have a significant effect on reducing sexual recidivism. Well-controlled meta-analyses are extremely valuable to the study of sex offender treatment, as they are commonly the only way to obtain a

desirable level of statistical power. Two well-cited meta-analyses published in the last decade have found an effect size for treatment similar to the current study, as measured by the odds ratio (OR).

Firstly, a meta-analysis of 43 studies (total $N = 9,454$) by Hanson and colleagues found that with an overall follow-up period of 3.8 years, the average effect size for psychological treatment was OR = 0.81. The average sexual recidivism rate was 12.3% for the treated offenders and 16.8% for the untreated offenders (Hanson et al., 2002). Additionally, when current institutional treatments (cognitive-behavioural or systematic) were evaluated separately from older treatments, an even larger effect size was found; OR = 0.61.

Secondly, a meta-analysis of 69 studies ($N = 22,181$) was carried out by Losel and Schmucker (2005), and included outcome studies with both organic and psychological treatments. The results showed that with an average follow-up period of 5 years, the average effect size for psychological treatment was OR = 0.59.[2] The average sexual recidivism rate was 11.1% for the treated offenders and 17.5% for the untreated offenders (Losel & Schmucker, 2005). In the current study, the effect size of treatment for sexual recidivism was OR = 0.71, which is similar in magnitude to the effect sizes from the meta-analyses by Hanson and colleagues (2002) and Losel and Schmucker (2005).

Furthermore, the results from meta-analyses are particularly important in the field of sex offender treatment, as meta-analyses have the ability to obtain the statistical power than the majority of individual studies are unable to achieve due to the low base rates of sexual recidivism.

Nevertheless, meta-analyses can be subject to methodological issues as well; if all of the studies included in a given meta-analysis have substantial methodological flaws, then the pool of results on which the meta-analysis is based will not be an accurate measure of treatment outcome for sex offenders. Some of these issues have been highlighted in the critique of the Hanson and colleagues (2002) meta-analysis by Rice and Harris (2003). Their largest concern was the lack of suitable comparison groups used in the majority of studies that were included in the meta-analysis. If the comparison groups are not suitably matched with regard to static risk level, then any

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[2] Losel and Schmucker (2005) reported an OR of 1.70, but ordered reported untreated/treated as opposed to treated/untreated which was reported by Hanson and colleagues (2002), therefore we have reversed their OR to agree with the method of reporting used by Hanson and colleagues (2002) and the present study.

conclusion drawn from the findings cannot be attributed to treatment effect with certainty. Rice and Harris argued that if the well-controlled studies from the meta-analysis (randomly assigned designs as opposed to 'incidental assignment' designs) were assessed alone, then no significant effect of treatment could be drawn.

The critique from Rice and Harris (2003) draws attention to the caution that must be used when evaluating any outcome study on sex offender treatment, whether it is a meta-analysis or an individual study, and the importance of using only well-controlled studies when carrying out a meta-analysis of treatment outcome. There are many methodological problems within the field of sex offender treatment that require careful attention when assessing individual treatment outcome studies or when selecting suitably well-controlled studies to be included in a meta-analysis; some important methodological issues will be discussed below.

Methodological Problems

Although there are many challenges to assessing the efficacy of treatment with sex offenders, many of these challenges can be overcome with the correct methodology or statistical techniques.

For instance, many previous outcome studies of sex offender treatment suffer from methodological flaws such as small sample sizes (leading to insufficient power), short follow-up periods and non-comparable groups of offenders (Hanson, 2000; Rice & Harris, 2003). However, a study by Marques and colleagues (2005) that utilised the 'ideal' randomised, prospective design for assessing treatment efficacy discovered that randomisation does not guarantee that the groups of offenders will have homogeneous risk profiles. The offenders in the study by Marques and colleagues (2005) were randomly assigned to either a treatment group or a control group, and upon evaluation, the offenders in the treated group were at a significantly higher risk of reoffending as measured by their scores on a static risk measure (Static-Lite) and also had a higher percentage of offenders with a history of commitment or mental disorders (Marques et al., 2005). Therefore, it makes more practical sense to use a quasi-experimental design for outcome studies of sex offender treatment and to control for the differences in risk profiles between groups by using statistical techniques, such as regression or propensity score matching.

Additionally, it is therefore also logical to mitigate some of the common methodological flaws by executing sizeable, well-controlled meta-analyses, which are able to give a more complete, large-scale observation of how well treatment for sex offenders works. Moreover, even if any between-group differences are statistically controlled in an individual study, the difficulty of obtaining a sample size large enough for adequate statistical power is considerable. Therefore, meta-analyses are the solution to the problem of low-base rates of sexual recidivism, which may otherwise make it extremely hard for an individual study to find a relatively small or modest-sized treatment effect.

Within the current study, the challenges inherent to studies of sex offender treatment (such as follow-up times, sample sizes and non-comparable groups) were still present, and were taken into consideration.

Firstly, although there was a small but significant difference in follow-up times between the treated and untreated offenders, both groups had follow-up periods of over 6 years, which is a substantial time in which they had a chance to reoffend. However, the difference in follow-up times is a limitation of the study, as the untreated offenders did have approximately 5 months on average follow-up time than the treated offenders, which could have affected the observed recidivism rates for the two groups (compared to the two groups having identical follow-up times).

Secondly, the untreated sample size used was the largest possible and constituted the population of sexual offenders against children in New Zealand who did not attend an STU while incarcerated. We also used a differential weighting procedure to ameliorate the effects of the unbalanced design (i.e., having nearly five times as many untreated as treated offenders). Both of these aspects of our methodology would tend to maximize the statistical power, and give an unbiased estimate of the treatment effect.

Lastly, a detailed analysis of the offender characteristics of both groups highlighted that the treated and untreated offenders displayed heterogeneous risk profiles. This issue was resolved by developing predictive models for each type of recidivism (sexual, violent and general) which controlled for the group differences on multiple static risk factors to demonstrate the effect of treatment on recidivism rates for both groups.

Furthermore, even with the inherent challenges involved in assessing treatment efficacy for sex offenders, the current study found a significant effect of

treatment after the differences in static risk levels between the two groups were controlled for. The results from the current study support the growing body of research demonstrating that treatment for sex offenders does work.

Treatment Change

An alternative, indirect method for investigating whether treatment is effective is to ask whether measures of treatment gain are associated with reductions in recidivism. If treatment does work, the offenders who show more progress in reaching the treatment targets will be less likely to reoffend, and the offenders who show less progress in reaching the treatment targets will be more likely to reoffend. Measuring treatment change and relating the change scores to recidivism risk can provide important information regarding not only the efficacy of treatment, but how individual offenders respond and which treatment targets are actually met. It is important to verify that the changes in dynamic variables targeted in treatment are actually related to a reduced risk of recidivism (Barnett et al., 2011; Wakeling et al., 2011; Beggs & Grace, 2011).

Previous studies such as Wakeling, Beech and Freemantle (2011) have found that using measures of treatment change in outcome studies (which evaluate dynamic risk factors) can provide a significant prediction of sexual recidivism risk (Hanson & Harris, 2001; Wakeling et al., 2011). Studies have also shown than changes in measures of treatment gain (such as psychometric batteries) can provide a significant prediction of sexual recidivism risk over and above the predictive value of static and pre-treatment dynamic risk measures alone (Beggs & Grace, 2011).

Additionally, the positive results from the current study not only complement recent meta-analyses, but also support the results from the treatment gain study of Kia Marama by Beggs and Grace (2011). Beggs and Grace (2011) found that measures of treatment change from a self-report psychometric battery and structured clinical rating systems (the VRS:SO and the SGAS), were significantly related to sexual recidivism for a sample of 218 offenders that were followed for an average of 12.24 years post-release. Specifically, they found that treatment gain was associated with a reduction in sexual recidivism after controlling for both static and pre-treatment dynamic risk. For measures of gain based on the psychometric battery, results were significant ($p <$ .05) and approached significance ($p < .08$) for the VRS:SO. Taken together, the

results from the Beggs and Grace (2011) study and the current research provide converging evidence for the effectiveness of treatment at Kia Marama, using both static risk factors and measures of treatment gain to demonstrate that the Kia Marama treatment programme is successful in reducing the risk of recidivism for sexual offenders against children.

Limitations of present study

The findings from the current study demonstrate the difficulty of finding a suitable matched comparison group for treated sex offenders, and highlight the need successfully to control for differences in risk level by using regression analyses when using quasi-experimental designs. Alternatively, propensity score matching could be used to control for the differences in risk level between groups, as this has shown promising results for eliminating selection bias in previous studies (Duwe & Goldman, 2009). However in the current study, this method was not able to generate a matched group of untreated offenders which were not significantly different in terms of offence history, when compared to the treated group.

Although our study utilised the largest available participant pool to obtain our offender samples, there was a large discrepancy in sample size between the untreated and treated groups of offenders. Furthermore, the statistical power for the treatment group would not have been as large as for the untreated group. This is a limitation of the study, however, when generating the predictive models, a differential weighting procedure was employed to allow the groups to have equal influence on the estimated coefficient. This procedure maintained the level of statistical power (overall $N = 2384$) while equating the influence of the groups on the estimated coefficients; allowing for the most accurate interpretation of the effectiveness of Kia Marama with the sample we had.

Additionally, as noted previously, there was a small but statistically significant difference in follow-up times (0.45years) between the treated and untreated offenders. The average follow-up period was 6.36 years for the treated offenders and 6.81 years for the untreated offenders. This was due to the available sample of Kia Marama offenders having been collected at the end of 2008, whereas the available sample of untreated offenders had been collected in early 2010. Within the constraints of the

timeline for the present study, it was not feasible to collect more recent information on offenders who received treatment at Kia Marama. However, further outcome research on the effectiveness of Kia Marama would be able to adjust the samples collected to ensure that offenders from both groups had identical follow-up times.

Furthermore, the present study only utilised static risk factors for predicting recidivism; although we obtained significant results using static factors, dynamic risk factors have been found to add predictive accuracy when used in combination with, or instead of, static factors (Quinsey et al., 1995; Hudson et al., 2002). It has been suggested than child molesters differ from other sexual offenders on dynamic variables such as level of sexual deviance, social and inter-personal difficulties and emotional identification with children (Quinsey et al., 1995; Miner & Dwyer, 1997; Hanson & Bussiere, 1998; Cantor et al., 2005). Therefore, it would be imperative to gain as much information on dynamic factors related to recidivism for sex offenders against children through studies on treatment change, as sex offenders may differ greatly in their dynamic risk profiles from adult sex offenders.

Recommendations for further research

The results of the present study suggest a number of directions for future investigation. Further research could be carried out on the accuracy of some of the ASRS items for predicting sexual recidivism in contemporary sample, along with more research on contemporary offender characteristics and static variables that are predictive of sexual recidivism. Moreover, research could be undertaken to creating a risk assessment tool for sex offenders against children only, to take into consideration some of the unique attributes and characteristics of the offender population. It would also be useful to obtain information about offenders who have attended the Te Piriti STU. Combining these data with the present Kia Marama sample would increase statistical power and provide a more comprehensive assessment of STU effectiveness in New Zealand.

The continuing limitations of using a quasi-experimental design or a prospective, randomly-controlled trial to evaluate the efficacy of sex offender treatment support further research being undertaken into using treatment change as a more accurate alternative to assessing treatment effectiveness. Using validated

measures of treatment change not only eliminates the need for a comparison group but makes use of dynamic risk factors as opposed to relying on static risk factors alone.

Furthermore, propensity score matching as a method for controlling differences in risk level between treated and untreated groups of offenders warrants further investigation. Few studies have been done using this method in research with sexual offenders, but results have been promising (e.g., Duwe & Goldman, 2009). Although the method was not successful in the present study, further research could apply propensity score matching alongside regression in an attempt to eliminate selection bias and differences in risk level between groups.

Finally, the converging evidence from the current study and the Beggs and Grace (2011) study on the effectiveness of treatment at Kia Marama suggests that the two methods of assessing treatment efficacy could be used in conjunction in future research to develop a more meaningful insight into not only the overall effect of treatment but which treatment targets are met and which treatment targets are associated with a reduction in recidivism. Such a study would give a detailed understanding into the workings of a particular treatment programme and would provide useful information for clinicians as well as relevant government bodies.

Conclusions

In conclusion, the current research has described the heterogeneous nature of risk profiles for treated and untreated sexual offenders against children in New Zealand. This underscores the difficulty of finding a suitable comparison group for treated offenders. Nevertheless, the results from the current study provide evidence for the effectiveness of Kia Marama in terms of reducing sexual, violent, and general recidivism. These results show that programmes such as Kia Marama can be effective and are worthwhile investments to protect the potential victims of sexual offending and to reduce the social and economic costs associated with reoffending. Further research can focus on utilising measures of treatment change to continue to demonstrate the effectiveness of treatment programmes such as Kia Marama.

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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   ATMPT RAPE/ASS INTENT RAPE(OTHWEAP)
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   ATTMPTD UNLAWFUL SEX CONNECT-FEMALE 12-16
2676   ASSLT INTNT COMIT SEX CONECT-FML 12-16
2817   SEXUAL CONNECTION WITH YOUNG PERSON 12-16
2827   ATMPT 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(OTHWPN INVOLVED)
2131   ABDUCTS FOR SEX (FEMALE CHILD)

Contact - Female > 16
2115   RAPES FEMALE OVER 16(OTHWPN INVOLVED
2116   RAPES FEMALE OV 16(NO WPN 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 CONNECT-FEMALE OVER 16
2677   ASSLT INTNT COMIT SEX CONECT-FML 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 U/L SEXUAL CONNECTN MALE UND 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   ATMPT 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