

**Predicting Recidivism Among an Adult Male Child Sexual
Abuse Imagery Offender Population with the Child
Pornography Offender Risk Tool Short Version (CPORT-
SV): A New Zealand Validation Study**

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Abstract

The prevalence of Child Sexual Abuse Imagery (CSAI) is ever increasing with the advancement of technology in today's world, and with that is an increase of risk of reconviction for CSAI offences. Therefore, it is imperative to have empirical evidence for the assessment of recidivism risk with measures validated both internationally and here in New Zealand. The present study utilised New Zealand of Corrections data for the population of individuals that were convicted of a CSAI offence between the years 1998 to 2014 (N = 552). The primary aim was to evaluate the predictive validity of the Child Pornography Offender Risk Tool – Short Version (CPORT-SV) (Seto & Eke, 2015) an internationally recognised structured checklist designed to predict sexual recidivism among adult male offenders with a conviction for CSAI. An additional goal was to explore whether the CPORT-SV's predictive accuracy might be improved by supplementing additional variables taken from the risk tool currently in use in the Department of Corrections, but not designed specifically for CSAI offenders, the Automated Sexual Recidivism Scale (ASRS) (Skelton, Riley, Wales, & Vess, 2006). Results showed concurrent validity for the CPORT-SV with the ASRS, as well as, the CPORT-SV being significantly associated with all four recidivism outcomes explored (any, any sexual, sexual contact, and CSAI). Logistic regression and area under the curve (AUC) analyses identified that supplementing the CPORT-SV with item 1 from the ASRS (any prior sexual offences) improved the predictive accuracy with regard to CSAI recidivism in particular. Comparative AUCs were 0.77 for CPORT-SV alone, and 0.82 for CPORT-SV plus ASRS item 1. The present findings support previous results from Seto and Eke (2015) with a focus on CSAI recidivism, endorsing the utility of the CPORT-SV in the New Zealand context.

Chapter 1

Introduction

The general term for sexual offending can be described as a sexual act that may cause unwanted physical or psychological harm to the victim (Camilleri & Stiver, 2014). With this being considered, it is important to investigate the possible cause of these antisocial behaviours in the hope of reducing further offending and consequently the number of victims themselves. These offences are exceptionally traumatic for victims, with potential problems that can impair their functioning in the future. It has been established through previous research that children that have been sexually abused may demonstrate high levels of post-traumatic stress disorder (PTSD) symptoms, as well as elevated levels of self-esteem issues and depression compared to children who have not been victimised (Gilbert, Widom, Browne, Fergusson, Webb & Jansonet, 2009; Finkelhor, & Ormrod, 2010; Moore, 2012). Not only are the consequences debilitating for the sufferers of sexual abuse, but there is also an impact on a wider social and economic level here in New Zealand. Providing services for both perpetrator and victim are costly. With the provision of a criminal justice system and various forms of rehabilitation and support, this assistance is indeed a necessity but has been identified as the most costly sub-category of crime, trebling other categories such as violent offending (Law Commission, 2015).

With the increased use of the internet in the last decade, those who use this as a platform to offend, have then been identified and investigated by professionals working in this field. This category of sexual offenders is distinctive to offline sexual offending by the means of utilising the internet for their offence related purposes, including the viewing and distribution of objectionable content (Meridian, Curtis, Thakker, Wilson, & Boer, 2013). With this stated, there have been many questions surrounding this typology of offender, the possibility of reoffending, and how this may differ from other types of sex offenders. Webb,

Crassati, and Keen (2007) discussed the difficulties occurring for specialists working with this type of offender group:

Internet sex offending has sparked off a new wave of arrests, charges, and convictions. As a result, the courts, prison, and probation services have an influx of internet sex offenders, and questions are raised about their management and risk. Are they child molesters or are they a new type of offender? If an individual views child pornography on the internet, is he/she likely to progress to contact sex offences? (p. 449-450)

Questions like this have generated a great amount of research around characteristics and behaviours of internet sex offenders, and the possibility of recidivism that may progress into more serious offences. Wakeling, Howard and Barnett (2011) examined the predictive validity of four actuarial risk assessment tools with sexual offenders convicted of internet offences. Risk Matrix 2000 scales and Offender Group Reconviction Scale 3 were assessed for their predictive accuracy for varying types of reoffending. This preliminary work suggested that modified actuarial measures may have some predictive utility for this subgroup of individuals who utilise the internet to offend. Research suggests, but has not concluded, that characteristics of this specific group of internet offenders compared with those who commit more typical sexual offences may differ by having a moderately low reoffending rate. Whilst these reoffending suggestions are not conclusive, findings are mounting regarding the classification of internet offenders (Elliot & Beech, 2009; Quayle & Taylor, 2003; Krone, 2004).

Elliot and Beech (2009) performed an important initial meta-analysis regarding the knowledge surrounding those who commit offences relating to deviant images of children online. They reviewed specifically the links between etiological and theories of child sexual abuse offending and current information regarding online child pornography. They concluded

that there are four different types of internet offenders. Firstly, is the “periodically prurient” offenders, who act on their impulses and engage in online child pornography offending as a part of a broader interest in pornography. Secondly, there are “fantasy-only” offenders, who use images of children to fuel their sexual interests in children. Thirdly, there is a group that uses the online format as a part of a wider pattern of sexual offending; for example, these offending individuals may use the cyberspace environment to groom children to aid potential future contact sexual offences. Lastly, are the “commercial exploitation” individuals, who produce or exchange abusive images for financial gain (Elliot & Beech, 2009). Elliot and Beech (2009) explored further whether the existing theories of sexual offending (Middleton, Elliot, Mandeville-Norden, & Beech, 2006) also relate to internet offending. The literature does indeed suggest that many of the deficits and issues concerning sexual offending are present in internet offenders, recognising however, that additional investigation is needed to refine these as well as improving our understanding of internet offending.

With the knowledge gained regarding the different categories of online child sexual offenders, what has become a point of interest and an area of research growth, are the factors and psychological characteristics that may contribute to offending, and risk of recidivism. An initial study by Bourke and Hernandez (2009) compared men whose known sexual offence history involved the possession, receipt, or distribution of child sexual abuse imagery, but did not include any contact sexual abuse; paralleled to men convicted of similar offences who had a documented history of hands-on sexual offending with at least one child victim. The goal of their investigation was to ascertain whether the first group of offenders were only collectors of child sexual abuse imagery with little chance of a contact sexual offence, or in fact, if they were contact sexual offenders involving children whose crimes have gone undetected (Bourke & Hernandez, 2009). Following steps of their investigation included comparable interview evidence being taken from both groups at the pre-sentence period, then

six months into the treatment programme where individuals disclosed their sexual offence histories via self-report, then completed a polygraph test to confirm their admissions.

Conclusions from this study were that a significant number of online offenders in the sample acknowledged committing a contact sexual offence that was not formally detected resulting in an official charge (Bourke & Hernandez, 2009).

Lately, the increased use of the internet has been complemented by an exponential rise in cyber-criminality, including offences concerning the sexual exploitation of children (Jung, Ennis, Stein, Choy, & Hook, 2013). With this acknowledged, research has focussed on many reasons that may have led to this rise in child pornography exploitation. An early study by Seto and Eke (2005) examined criminal history, and re-offence rates of online offenders, finding that online offenders did not appear to have high rates of recidivism, either online or contact sexual offences (Seto & Eke, 2005). However, subsequent research by Seto and Eke (2015) suggested with a sample of non-contact online offenders, that those with prior criminal offences were at a higher risk of recidivism in the future (Seto & Eke, 2015).

Wakeling, Howard and Barnett (2011) conducted one of the initial validations of the Risk Matrix 2000 scales and Offender Group Reconviction Scale 3 which are designed to predict sexual reoffending in sexual offender and violent offender groups. They did this with a sample of online sexual offenders, with the purpose of guiding specialists in suitable risk assessment for this group. These specific tools that were investigated showed very good predictive accuracy as measured with the use of receiver operating characteristics (ROC) statistics used to calculate the effect they were intended for (areas under the curve between .67 and .87). However, the reoffending rates that were examined at a one and two year follow up were very low among this sample with less than 1% of the online offenders having a sexual reconviction. What was identified for future research was that a larger sample size

and/or longer follow-up periods were needed before definitive conclusions could be made about online sexual offenders (Wakeling, Howard, & Barnett, 2011).

The remainder of this introduction will briefly explore legal definitions and the incidence of online offences in New Zealand, as well as the risk of recidivism amongst this specific offending population. Key assessment tools will be reviewed, together with their predictive accuracy in relation to recidivism in the context of the literature on this topic. Finally, the rationale and purpose of the current study will be presented.

1.1 *Definition of Child Pornography and Differentiating Paedophilia*

Use of the term “child pornography” has long been criticised by those who research in this field. This term can imply the legitimacy and compliance on the part of the victim and therefore legality on the part of the abuser, and invokes images of children in ‘provocative’ positions rather than the portrayal of child abuse (Kettleborough, 2015). To accurately reflect the gravity of the content that is being criminally exploited, the term ‘Child Sexual Abuse Images’ (CSAI) will be used throughout this report. This official term was previously used by Martin and Alaggia (2013) exploring the impact that CSAI have on society and the victims themselves over longer periods of time.

CSAI in Canada, the United States and other overseas jurisdictions, is generally defined as sexually explicit depictions of minors under the age of 18 years old (Seto M. C., 2010). In the New Zealand context the legal definition of objectionable material is content “if it describes, depicts, expresses, or otherwise deals with matters such as sex, horror, crime, cruelty, or violence in such a manner that the availability of the publication is likely to be injurious to the public good” as well as if a publication supports “the exploitation of children, or young persons, or both for sexual purposes” in accordance with Sections 3 and 3(2)(a) of the Films, Videos, and Publications Classification Act 1993 (Films, Videos, and

Publications Classification Act , 1999). Both of these definitions can include both fictional content, as well as pseudo-images, defined as a computer generated realistic and simulated representation that does not necessarily involve the sexual abuse of an actual child but the indication of indecent material of a child (Akdeniz, 2016). This consumption of sexual imagery involving real children as well as computer generated images, encourages the sexual objectification of children, as well as increasing the potential vulnerability and harm to society.

There is great significance in distinguishing different facets for those that have a paedophilic disorder in today's society. Sometimes public and mainstream views may get confused between the indicators that contribute and consequently define what it is to be a paedophile. The DSM-5 states that a sign of a paedophilic disorder would be that an individual has "acted on" their sexual urges (American Psychiatric Association, 2013, p. 697). The term "acted on" could mean an individual making a contact offence with a child, or comparatively it could mean the use of child sexual abuse imagery. It is important to decipher between individuals who are in the same diagnostic criteria of paedophilia as misconceptions can add to a growing collective consciousness for demonizing judgements. The viewing of child sexual abuse images has been identified in the DSM-5 as a potential diagnostic indicator for a paedophilic disorder (American Psychiatric Association, 2013), suggesting that a considerable amount of child sexual abuse images consumed by an individual implies they fit within this disorder criteria. However, if a diagnosis is made purely on the extensive use of child sexual abuse imagery, an inference could be incorrect, with potential for unjustified stigma for an individual (Berlin, 2014). The ability to decipher between typologies of sexual offenders is important so that terms are not used interchangeably in society, which may lead to misunderstandings.

1.2 *Incidence of Child Sexual Abuse Image Offences and demographics*

Figures suggest CSAI use is steadily increasing worldwide, with the Internet Watch Foundation (2016) ascertaining a total of 57,335 webpages that contained CSAI, which is a 21% increase from 1,991 in 2015 (Internet Watch Foundation, 2016). Rates of arrest and convictions for CSAI offenders have also increased considerably over time (Wolak, Finkelhor, & Mitchell, 2011) which insinuates a rise of this particular type of offender. In a 12-month period ending in May 2017 New Zealand police data has recorded rates of offending for those individuals who have committed a CSAI offence (New Zealand Police, 2017). Within these CSAI incidents, 94.3% of the individuals convicted were identified as New Zealand European males, with nearly half with an age of 35 years old or younger. Young age at the time of offence is a well-known risk factor for recidivism that has been identified both in New Zealand and internationally (Price, Lambie, & Krynen, 2015; Seto & Eke, 2015). Therefore, research into models of offending and potential reoffending trajectories of special population sexual offenders is important, especially when the focus is prevention of recidivism.

1.3 *Recidivism and Preventative aims*

Recidivism is usually described as a “falling back” or “relapse” into previous criminal behaviour by a person known to have committed at least one previous offence (Andersen & Skardhamar, 2017). This being stated, there can be different patterns of re-offending for individuals involved in dissimilar types of crime. Early work by Hanson and Bussiere (1998) suggested that some sexual offenders display a firm, chronic pattern of offending, more specifically a recurrent deviant sexual interests or behaviour. Recidivism or the relapse of deviant behaviour can be identified as the conclusion of a chain of events that has led to the reversion of behaviour, for example, drug use or sexual offence.

Relapse prevention in terms of sexual offending is a concept that has been explored for many years (Pithers, 1990). It first aims to determine the pattern of thought and behaviour that may lead the offender to commit a sexual deviant act. Following, these individuals are taught how to stop this chain of events from occurring by learning and applying alternative coping strategies and behaviour management. An example of this would be a sexual offender avoiding certain situations, which may increase the possibility of recidivism, for example, withdrawing from social media forums or parks where children may be vulnerable or playing; by doing this, they are actively reducing their risk for recidivism according to the relapse prevention model.

There are many models that have attempted to explain the characteristics of sex offenders and thus, provided useful information for treatment of specific individuals and their relapse trajectory (Pithers, 1990). Pither's (1990) relapse prevention (RP) model was initially developed as a treatment for drug and alcohol addiction, before being applied to the situation of sexual offenders and their subsequent treatment. However, some authors have identified that an issue with the RP approach is the lack of acknowledgement regarding the different 'offence pathways' (Moore, 2012). The RP model states that offenders that revert back to deviant acts do so because of the lack of self-regulation of their behaviour; as individuals, they desire to behave otherwise to avoid recidivism, however they do not have the understanding or abilities to behave accordingly. While this may be accurate for some sex offenders, it has been identified that in contest, a select amount will actively and systematically plan their offences, with no desire to adjust their behaviour (Ward, Purvis, & Devilly, 2004). Alternative approaches have thus been suggested to better account for variance in sexual offender behaviour, and explain further details surrounding the causes and processes of recidivism. The self-regulation model of relapse prevention (Ward & Hudson,

1998) provides a description of the cognitive, behavioural, motivational, and contextual factors associated with sexual offending.

The concept of self-regulation assumes that all actions are goal directed, therefore leading to the inhibition of particular behaviours, as well as the encouragement or continuation of other behaviours (Locke & Latham, 1990). Goals provide two motivational purposes. As stated by Pieters, Baumgartner and Allen (1995) they firstly influence the direction of behaviour by expressing what people are trying to accomplish, how they plan to attain the goal, and why they are pursuing the chosen course of action in the first place. Secondly, they influence the intensity of behaviour an individual will pursue a course of action depending upon the desirability of the focal goal (Pieters, Baumgartner, & Allen, 1995). Self-regulation can be described as the technique that all individuals utilise in order to achieve their personal goals; for sex offenders, that goal might be to actively refrain from sexual offending or to commit a further offence. Consequently, individuals who reoffend can take very different offence pathways, despite the fact that they all lead to the same end. Ward and Hudson (1998) identified four pathways, providing more in-depth detail of how the treatment process should be tailored for different sex offenders (Ward & Hudson, 1998). These pathways are known as; approach-automatic, approach-explicit, avoidant-passive and avoidant-active which are based on variations on two dichotomies. The first being the individuals goal in relation to reoffending (i.e. approach-automatic/avoidant-active); and the second involving their conscious or controlled cognitive processing (i.e. intact regulation/poor goal selection, under-regulation or mis-regulation pattern) (Ward & Hudson, 1998).

An offender that employs the approach-automatic pathway does not have the necessary coping strategies for high-risk conditions that may transpire, whilst making no attempt to avoid these certain high-risk conditions. An offender who uses the avoidant-

passive pathway actively tries to refrain from committing another offence, however they do not have the coping strategies needed for high-risk conditions. Both of these two offender pathways under-regulate their behaviour, and ultimately end up falling back into re-offending habits. Offenders that use the avoidant-active pathway do possess coping strategies for high-risk situations, yet the strategies they employ are inappropriate, which leads to them waning with those strategies and then eventually committing an offence. Finally, offenders who employ approach-explicit pathways pursue circumstances that could be deemed high-risk. These particular types of offenders plan their inappropriate sexual habits, as well as having the ability to adjust and control their behaviour (Ward & Hudson, 1998). This group of offenders can be regarded as the most difficult to treat (Moore, 2012), due to their ability to regulate their behaviour being intact, however, they have an inappropriate goal: the desire to sexually offend. Identifying the specific pathway for each offender is very important for providing treatment that will be tailored and effective pre-and-post release.

1.4 *Predicting Re-offending*

There has been growing awareness towards CSAI offenders in New Zealand by both the media and police, evident in the increased rates of offences and arrests and increased media reporting which has consequently increased community concern (New Zealand Government, 2015). A central concern for CSAI as an issue is the risk that these individuals may pose to directly offend against children (Seto M. C., Internet sex offenders, 2013). As acknowledged by previous research, the majority of CSAI offenders are sexually interested in children (CSAI use is considered a marker for paedophilia; (Berlin, 2014)), and it follows that such individuals might therefore be at risk for sexual contacts with children (Seto, Reeves, & Jung., 2010). Seto, Hanson and Babchishin (2011) conducted a meta-analysis of online sexual offender studies and determined that approximately one online offender in eight

had a previous criminal record for contact sexual offences (Seto et al., 2011). Behaviours have also been noted that suggest the majority of the online offenders that are detected as CSAI offenders, have commonly used online technologies as a part of their sexual offending over the past decade (Eke, Seto, & Williams, 2011). A subset of six studies from Seto and colleagues analysis for which self report was available as a result of participation in treatment and/or polygraph (an examination consisting of three phases: a pre-test involving information disclosure, yes or no questions whilst physiological responses are recorded, then a debrief to explain responses), 55% of the online sexual offenders admitted to a contact sexual offense against a child (Seto, Hanson, & Babchishin., 2011). With these serious outcomes and identified, the importance of also considering the potential for contact offending when assessing risk and the prospect of re-offending among CSAI offenders is clear.

1.5 'Risk Needs Responsivity' *RNR Principles*

The topic of recidivism risk assessment has been explored indepth in the history of criminal justice research (Andrews & Bonta, 2010; Hollin, 2002). As a result, a number of principles have emerged and been developed based on established predictors of reoffending, outlining approaches to reducing recidivism that theoretically might work for recidivist offenders as future solutions. The risk principle as stated by Andrews, Bonta and Wormith (2011) declares that effective work with offenders will match the intensity of service delivery with the degree of risk posed by the offender. Offenders assessed as medium to high risk of recidivism should be designated for intensive delivery of treatment; whilst low risk offenders should be kept out of intensive correctional services thus preventing any interference with existing strengths and/or increased association with higher risk recidivist offenders (Andrews, Bonta, & Wormith, 2011).

Supplementing the risk principle, is the ‘needs’ principle, which was refined by Andrews, Bonta and Wormith (2011), following from the earlier work of Andrews, Bonta and Hoge (1990). With respect to offender treatment, there is a close relationship between risk and need. Many criminal offenders, especially those that are deemed high risk, have a variety of needs (Andrews, Bonta, & Wormith, 2006). They require the normal necessities that an individual that needs to live, for example a place to live and work, to stop performing deviant behaviours. As described previously, some of these high risk offenders have a low self-esteem and chronic physical aggravations (Hollin, 2002) which can be identified all as “needs”. The need principle attracts our attention to the distinct difference between those needs that can be viewed as criminogenic, and those needs that are non-criminogenic. Criminogenic needs can be identified as dynamic (changeable) attributes of an offender that, when changed, are associated with changes in the probability of recidivism. Non-criminogenic needs can also be dynamic attributes, but these characteristics are not associated with the probability of a criminal reoffending (Moore, 2012).

Therefore, assessment of risk will inform various groupings of offenders and the intensity of service delivery; while assessment of needs will inform programme targeting and content (Moore, 2012). As criminogenic needs have been defined as those risk factors that are changeable (Hollin, 2002), the assessment of risk with offenders will therefore also include the assessment of need. A third key principle supplementing risk and needs is known as ‘responsivity’ principle. The central idea of the responsivity principle is to match the style and mode of intervention to the particular offender’s learning style and abilities. This tailoring of a rehabilitative intervention maximises the offender’s characteristics, motivations, and strengths, which may otherwise be overlooked in the process of risk and need assessments, rendering otherwise appropriate interventions less efficient in the reduction of recidivism. With respect to offender treatment, Andrews et al (2011) have shown that with

the refinement of the RNR (Risk Needs Responsivity) principles, interventions that adhere to these ideologies are associated with significant reductions in recidivism, whilst treatments that fail to follow the RNR principles generate minimal reductions in recidivism and in some cases, even increase recidivism (Andrews & Bonta, 2010; Andrews, et al., 1990). Another significant finding relating to the RNR principles that has been established is that they also appear to apply to the treatment of sexual offenders, which is vital for the advancement of risk assessment and treatment plans for this special population of offender (Hanson & Morton-Bourgon, 2009).

1.6 *Risk assessment measures: First generation through to Fourth generation*

There are many forms of recidivism risk assessment that have been utilised over time for assessing those convicted of sexual offending (Harris, Phenix, Hanson, & Thornton, 2003); (Wakeling, Howard, & Barnett, 2011). These alternate forms of risk assessment approaches can fall into specific categories, also known as, first generation, second generation, third generation, and fourth generation risk assessment. These different forms of approaches have appeared to reflect the development in the field of forensic psychology at that present point in time. Actuarial measures such as these, form the foundation of the best-validated risk assessment procedures available.

Prior to the foundation of risk assessment measures, as far back as the 1970's, which can now be labelled as the first-generation of risk assessment (Steadman & Coccozza, 1974). The main focal concern for these initial risk assessments was the lack of valid and reliable tools for assessors to rely on, so therefore they were only clinical judgements made by professionals. Empirical based measures for risk factors were not considered (and indeed not yet known); instead, interviews by trained clinicians were carried out and concluded with a decision on the level risk held by the offender after all of the components of the information

gathered were considered (Andrews, Bonta, & Wormith, 2006). It has been stated, as well as considerable evidence to support this (Faust, 1989); (Janus & Prentky, 2003); (Bonta & Andrews, 2007), that over the last 50 years actuarial prediction is far superior to clinical prediction, the informal and subjective nature of these unstructured judgements does not allow for consistent and reliable measure of risk (Andrews, Bonta, & Wormith, 2006). Structured clinical judgment (SCJ) were explored using meta-analytic comparisons by Hanson and colleagues (2004) who focused solely on sex offender samples. Structured clinical judgements can be described as the assessor undertaking a review of specified items (e.g. history of offending and age at release) but without a validated structured system linking scores to assessments. Decisions are instead based on individual case evaluation and professional experience, without considering relevant risk factors, method for combining them, or applicable theory, to prioritise the relative importance of the data (Craig, Beech, & Harkins, 2009). Some view these structured clinical judgement approaches as third generation, since they incorporate dynamic factors such as cognitive distortions, and or collapse of social supports, however, others view them as more similar to first generation (Bonta & Andrews, 2007). Hanson and colleagues (2004) concluded that these first-generation risk assessment structured interviews did better than the un-structured assessments, however they did not do as well as later generation approaches (e.g. fourth generation) as was predicted initially.

There are some significant differences between first-generation and second-generation risk assessment. As stated above, first-generation risk assessment is the clinical judgement of a professional, whereas, second-generation is actuarial, which has been defined in the past by Meehl (1954) as predictions that comprise of two qualities: They use an explicit method of combining the information, and that information is linked to a probability figure on the basis of empirically determined relative frequencies (Meehl, 1954). Dawes and

colleagues (1989) specifically compared clinical judgement and actuarial judgement to explore which approach was superior in the context of risk assessment. Their analysis shed light on the underlying factors that make an actuarial approach superior, for example, they state that actuarial methods unlike clinical judgement, always lead to the same conclusion for a given data set (see also Moore, 2012). In one study they examined, rheumatologists' and radiologists' appraisals of cases they themselves had evaluated previously often ended in differing in opinions after re-evaluation (Dawes, Faust, & Meehl, 1989). These different opinions were due to a variety of factors that included fatigue, recent experience, or seemingly minor changes in the ordering of information. They concluded from their review that a properly established actuarial method is likely to help in diagnosing and predicting human behaviour equal to, or even better than the clinical judgment approach, even when the clinical judge has had access to the same or greater quantities of information (Dawes, Faust, & Meehl, 1989). With this stated Dawes and colleagues also noted the pitfalls of actuarial methods for example that they sometimes only achieve modest results, as well as needing the periodical re-evaluation across settings so these methods are not applied mindlessly to alternate populations.

Second-generation assessment utilises static risk factors only; these are factors that are historical and fixed, which typically involves actuarial approach to combining the static factors together. The most frequently utilised second-generation risk assessment measure for sexual offenders in particular, is the Static-99, developed by Hanson and Thornton (2000), which will be defined and explained in further detail below. Although static risk factors alone perform well in risk prediction measures (Bonta & Andrews, 2007), dynamic risk factors are considered to also be of great importance (Andrews, Bonta, & Wormith, 2006). Dynamic risk factors are significant due to the theoretically pertinent characteristics of criminal behaviour they reflect, but also, they provide vital information around what aspects should be targeted

in treatment to help reduce recidivism risk. The use of only static risk factors as in second-generation risk assessment, does not furnish any information for the treatment provider regarding what needs to be targeted and what can possibly be improved on through the process of treatment. Without specific treatment targets identified for a certain offender, it is considerably more difficult to successfully reduce the risk of recidivism (Moore, 2012). Furthermore, second-generation assessment does not allow for any change in the potential recidivism risk of an offender to be reflected, as amount of time since an initial offence, or the use of treatment, will not alter the risk level calculated by static, or fixed (historical) factors.

Following second-generation risk assessment was the inclusion of both static and dynamic risk factors, in an approach known now as third-generation risk assessment. The principles of risk, need and responsivity (RNR) for effective offender rehabilitation, as outlined above, the inclusion of dynamic (changeable) risk factors gives treatment providers the information on which criminogenic needs that treatment should be directed. Risk assessment approaches that use both fixed and changeable topographies have demonstrated efficacy when predicting initial risk levels (Andrews, Bonta, & Wormith, 2006); (Grandreau, Goggin, & Smith, 2002). One highly investigated third-generation risk assessment measure 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, 2000). The LSI-R demonstrates moderate predictive accuracy, exhibiting AUC values between .64 and .73, which 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. Another third generation risk assessment measure is the STABLE-2007 which consists of 10 separate items. This particular risk assessment tool was examined in relation to the STATIC-99 a

already validated fourth generation risk assessment measure. The STABLE-2007 demonstrated a strong predictive accuracy, exhibiting AUC values between .71 and .75, which can be interpreted as the likelihood that a random selected reoffender will have a higher score on the risk assessment measure than a randomly selected non-reoffender. The main benefit from the third-generation risk assessment tools is the ability to inform level of risk, individualistic treatment targets for offenders as well as their tailored management, as opposed to level of risk by itself.

The final generation of risk assessment is the foremost method for assessing offender recidivism to date (Andrews, Bonta, & Wormith, 2006). The previously described second and third generations of risk assessments do allow professionals and criminal justice systems to effectively recognise the risk and need principles of the RNR framework, however, the ability to adhere to the responsivity aspect of that framework has been previously identified as lacking (Moore, 2012). It is of utmost importance that treatment is provided to offenders that is suitable and will gain the best results overall. Therefore, it is fitting that the most superior assessment would include identification of factors relating to responsivity. Andrews and Bonta (2006) argue that fourth-generation assessment is 'risk/need assessment' collective with case management. The characteristic of case management guarantees that the risk and need principles are followed in the treatment process, as well as having an equal focus on the responsivity principle, and providing a measure of treatment change. A fourth-generation risk assessment example is the Level of Service/Case Management Inventory (LS/CMI), which does combine the factors from the LSI-R (described previously), as well as including the distinctive and individualistic criminogenic needs to be addressed, responsivity considerations, a case management plan and progress record (Andrews, Bonta, & Wormith, 2006). This particular evaluation approach is far more intense and continuous over the treatment period than the second or third generation

approaches, as well as its ability to provide more information to judicial staff in cases such as after treatment supervision and specialised management post-release. The capacity to which fourth-generation risk assessment extends its effectiveness for offenders is the specialised approach that allows an integrative systematic intervention and monitoring of a broader range of offender risk factors, which creates a clear distinction from previous risk assessment generations. It proves this by treatment targets being met, as well as demonstrating a change in the offender's individual level of risk throughout the course of the tailored treatment plan.

The Static-99 was designed to only utilise static (unchangeable) factors that have been shown in the literature to correlate with sexual reconviction in adult males (Hanson & Thornton, 2000). The estimates of sexual and violent recidivism produced by this risk assessment measure can be thought of as a baseline of risk for violent and sexual reconviction (Harris, Phenix, Hanson, & Thornton, 2003). This amalgamated ten-item prediction scale combined with items from the RRASOR produces scores developed for long-term risk assessment and specific treatments to reduce the risk of sexual recidivism. Items within this scale are proven risk factors that have been empirically shown to be associated with sexual recidivism across varied populations. Examples of items included within this scale are; 1) aged 25 or older when released (more than 25 = 0, less than 25 = 1) , 2) ever lived with a lover for at least two years?, 3) any index non-sexual violence convictions, 4) prior non-sexual violence convictions, 5) prior sex offences (scores from 0 to 3 corresponding to number of convictions) , 6) prior sentencing dates, 7) any convictions for non-contact sex offences, 8) any unrelated victims, 9) any stranger victims, 10) any male victims (Harris, Phenix, Hanson, & Thornton, 2003). To answer these questions three basic types of information is required, demographic, official criminal records, and victim

information. Each item on the scale is recorded dichotomously, for example 1 = present and 0 = absent.

The sum of item scores from the Static-99 categorise each offender into one of four risk levels. These specific levels are described as low risk, medium-low, medium-high or high (Hanson & Thornton, 2000). As stated by Moore (2012) the predictive accuracy of risk assessment measures is customarily determined using the receiver-operating characteristic (ROC) area under the curve (AUC) value. ROC techniques provide information about whether the use of a given risk assessment is necessary, whilst allowing for comparisons on the predictive accuracy of different risk assessment measures. The values that a ROC AUC provide can range from 0.5 to 1 (both in a positive or negative direction), 0.5 shows predictive accuracy no greater than chance and 1 shows perfect accuracy (Moore, 2012). The predictive accuracy values (ROC AUC) lay between 0.71 and 0.76 for the Static-99 for sexual recidivism, indicating moderate predictive accuracy (Hanson & Thornton, 2000). Various studies have investigated which risk measures are the most accurate and effective for predicting recidivism (Hanson & Morton-Bourgon, 2009). Hanson and Morton-Bourgon (2009) found within a meta-analysis of 118 prediction studies, that third and fourth generation actuarial measures designed for sexual recidivism were the most effective at predicting this kind of recidivism, compared to both unstructured and structured clinical judgement. Furthermore, 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 & Thornton, 2009). In 2009, a revised version of Static-99, called Static-99R, was released for use (Hanson, Phenix, & Helmus, 2009). This revision was completed to better account for the association between age at release and sexual recidivism, and to stipulate more up to date norms for the scale on more contemporary samples (Phenix, et al., 2016). Due to these advantages, as well as the reduction of sex offender re-offense rates in

contemporary samples, assessors were advised to switch to this new and improved risk assessment tool. Today, the Static-99R is still one of the most highly employed risk assessment tools in the area of sexual criminal recidivism (Hanson R. K., 2006); (Allan et al., 2007).

Over the last 20 years, New Zealand has had an increased priority on protecting the general public from sexual offenders (Skelton, Riley, Wales, & Vess, 2006). Paralleling this effort an abundance of legislation has been created, with the focal aim to both identify and intervene with sexual offenders that may be at a high risk of re-offending (Burdon & Gallagher, 2002) (Skelton et al., 2006). An example of this legislation is section 107 of Parole Act 2002 (amended in 2004) which focussed on serious sex offenders such as those who have victimized children, who have a higher risk of reconviction, and has included, provisions to extend their parole supervision with supervision orders (Parole Act , 2002). With these new regulations being employed in 2004, there was a growing need to gauge the risk level of large numbers of child sexual offenders quickly and with precision (Skelton et al., 2006). As a result of this legal initiative the scoring instrument referred to as the Automated Sexual Recidivism Scale (ASRS) was developed in New Zealand and utilised for this large offender population.

The ASRS is comprised of seven of the ten items in the Static-99, which can all be scored and then re-offending rates established with the use of existing computer databases by the Department of Corrections (Moore, 2012). The seven items in this assessment tool include; prior sex offences to the index offence, any prior sentencing dates before the index offence, any non-contact sexual convictions, non-sexual violence offence at index offence, whether the offender has had a sexual offence with a male victim and age of the offender when they were released from prison. Like the Static-99, aggregate scores from the ASRS program identify and categorise criminal offenders into one of four risk levels (risk bands):

low, medium-low, medium-high and high. The ASRS was tested in New Zealand on three cohorts of child sex offenders, with follow-up periods of five, ten and fifteen years, and consistently demonstrated ROC AUC values of 0.70 or above, which determines predictive accuracy similar to that of the Static-99 (Skelton et al., 2006; Moore, 2012). Further investigation into recidivism rates was carried out by Vess and Skelton (2010) using the ASRS on a population of 2435 sex offenders released from incarceration between the years 1990 and 1995. The average follow-up period was 15 years, during which between six and seven percent of low-risk offenders had been convicted of a new sexual offence, while 34 to 38% of high-risk offenders had been convicted of a new sexual offence (Vess & Skelton, 2010).

The amended version, known as the ASRS-R is currently used by the New Zealand Psychological Service of the Department of Corrections (Grace & Wilson, 2018), and the recidivism risk ratings of this assessment tool act as an initial screening for sexual offenders under consideration for release from prison and for persons that qualify for extended periods of parole supervision for high-risk sexual offenders (Skelton et al., 2006). At the clinical assessment level for measuring risk, the ASRS is considered as an initial indication of risk, which is then supplemented by the necessary service staff and their more comprehensive risk assessment factors, including for example, the use of dynamic variables as well as contextual risk factors of the post-release environment or level of psychopathy. One notable benefit of the ASRS is the considerable volume of data that can be examined with its use in an efficient manner.

1.7 *Follow-up time rearrange flow/placement*

Follow-up times for the majority of recidivism research, are found to be between one year and five years (Hanson R. K., 2002). For studies that focus on crimes involving drugs, five years would be an appropriate follow-up time, however, Brouillette-Alarie, Babchishin,

Hanson, & Helmus (2015) found that recidivist offenders' risk trajectories may be longer than sex-offenders that are non-recidivists, with recidivist offenders' follow-up periods ranging from 5 to 10 years (Brouillette-Alarie et al., 2015). This finding may be due to child sex offenders possibly refraining from committing a new offence past 10 years (Moore, 2012). Hanson (2002) has noted that rates of recidivism can rise by 30 to 40% if the follow-up period is to extend over 20 years. However, if all studies had this length of follow-up, overall observed rates of recidivism for sexual offences against children may appear very different to current published estimates. Comparably, research articles that have a particularly small follow-up period of one to two years may give an incorrect depiction of recidivism rates. Seto and Eke's (2015) research employed a fixed five-year follow-up analysis to control for variability in follow-up time. The reasoning behind this type of methodological design (fixed follow-ups), is to reduce random variation in studies, as well as, to enhance the ability to show stronger effects or relationships with recidivism than variable-time follow ups (Hanson & Morton-Bourgon, 2009).

1.8 *Operational definitions*

It is of utmost importance that the operational definitions of key variables in any form of research are clear and understood. In studies that involve the subject of sex offending, one important term is 'recidivism'. There are numerous definitions of recidivism that can be employed, for example, re-conviction or re-arrest. Depending on the chosen definition of recidivism, the detected rates of recidivism will alter thusly. Therefore, it is vital that the definition of recidivism be specified clearly in all research. Seto and Eke (2015) defined recidivism as new crimes that have resulted in formal action by the necessary authorities, committed during the follow-up period (of five years) after the index offence (Seto & Eke, 2015).

1.9 *Base rates of CSAI offending*

Rates of recidivism regarding CSAI offences are challenging to determine, due to factors such as the limited investigation in this particular area, the relative newness of the internet, the relatively limited follow-up times used in research, and the majority of studies using officially recorded offences only as the measure of recidivism (likely to be an underestimation) (Price, Lambie, & Krynen, 2015). In the limited number of studies, one focussed on re-offending rates amongst this select population, Wakeling, Howard and Barnett (2011) found sexual reconviction rates of 2.1 and 3.1 percent at either a one-year or two-year follow-up period occurred, correspondingly, a meta-analysis by Seto, Hanson and Babchishin (2011) found the rate of recidivism was 4.6 percent after a one to six-year follow-up period. With these statistics specified, it is important to note possible limitations of recidivism measures utilised. Those that use self-report as the measure for rates of re-offending for CSAI consumption may be significantly higher than these particular findings suggest. For instance, Kuhle, Neutze, Amelung, Grundmann, Scherner, Konrad, Schaefer and Beier (2012) found that around 80 percent of their sample of sex offenders self-reported CSAI consumption post-treatment, of which none had been detected by the respective authorities (Kuhle, et al., 2012).

As Seto and Eke (2015) established with their research, there is evidently some cross-over with almost a fifth of CSAI offenders (19%) having had some type of prior offline sexual offence against a minor. These cases were identified by official records from the Canadian police services and not self-reported by the CSAI offenders. Comparatively, among a sample seeking treatment for their abnormal sexual interests regarding children, Neutze, Seto, Schaefer, Mundt, and Beier (2011) found that over half (57%) self-reported having engaged in prior sexual contact offending. With this cross-over mentioned, it is clear that there is a specific population who only commit CSAI offences, where the utilisation of this material is not related to contact sexual offending (Neutze et al., 2011). There are some arguments that suggest CSAI use is a diversionary tactic for offenders (e.g. the use of CSAI

to prevent the committing of any contact sexual offending) (McManus, Long, & Allison, 2011), however, there have been questions raised concerning the potential for escalation from CSAI use to contact sexual offending (Jung, Ennis, & Malesku, 2012). Given this, identification of factors that may distinguish those who do, and do not act upon impulses to engage in contact sexual offending against minors is a key current direction for research (Price, Lambie, & Krynen, 2015). This difference between the two groups and their sexual offending behaviours remains relatively unclear. This gives a basis to highlight, as well as possibly resolve questions surrounding the link between CSAI offending and contact sexual offending.

1.10 *The Child Pornography Offender Risk Tool (CPORT)*

Seto and Eke (2015) hypothesised, based on past research concerning risk factors for contact sexual offending against children, that CSAI offenders who scored higher on variables reflecting: anti-sociality (specifically, criminal history, conditional release failure, and substance misuse); paedophilia or other paraphilic interests (specifically, self-reported sexual interest in children and CSAI depicting prepubescent children rather than pubescent or adolescent minors), or opportunity (specifically, residing or working with children and having specific contact information about children) would be more likely to reoffend (CSAI offence only, CSAI with non-contact sexual offending and CSAI with a contact sexual offence) (Seto & Eke, 2015). After identifying these particular risk variables, they examined whether those predictors of sexual recidivism identified in univariate analyses could be combined in a structured checklist for clinical professionals, as well as criminal justice decision makers.

Items within the CPORT (pronounced “seaport”) include: offender age at the time at release, any prior criminal history, any prior or index contact sexual offence history, any prior or index failure on conditional release, offenders having paedophilic interests, more boy than

girl content in the CSAI content that the offender possessed, and more boy than girl content in child nudity and other child content, excluding CSAI content. This current study focusses on the shortened version of the CPORT, the CPORT-SV does not include all the relevant risk factors relating to CSAI and sexual offending (Seto & Eke, 2015). It was originally established using available data from a sample of men convicted of CSAI offences in Canada, and therefore other possible influencers that had not been recorded in advance could not be examined. For example, Seto and Eke (2015) refer to research concerning phallometric assessment of sexual arousal to children as a strong predictor of sexual recidivism among identified offenders (Kroner, Gray, & Goodrich, 2013; Seto & Eke, 2015), however, due to the absence of this information it was not able to be included in the development of the CPORT-SV. In Eke and Seto's development study (2015) the sample that was examined were all convicted of at least one count of possession, accessing, distribution, or production of CSAI. Approximately 21% of the sample had a contact sex offence against a child that was either a part of their criminal history or a charge at the time of their index CSAI charge (Seto & Eke, 2015). Access to file information played a vital part in research of the CPORT, as well as police case files and national criminal records other information was also utilised; recorded or transcribed interviews with suspects, interviews with family members or other witnesses, police officer notes, forensic computer analysis reports, and the CSAI content (in digital format) seized by police. The CPORT-SV was developed in a sub-sample of 266 offenders and followed for a fixed five year period of opportunity where information was gathered through a careful review of police case files and national criminal records (Seto & Eke, 2015).

1.11 *CPORT-SV Item 1- Offender age 35 years or younger at index offence*

It has been identified in previous literature that offender age is very important when considering the trajectory of crime that can lead an individual to re-offend (Grandreau, Little, & Goggin, 1996). Not only is this risk factor well established across a diverse spectrum of offenders generally, but also specifically for CSAI offenders (Eke, Seto, & Williams, 2011). In the study by Seto and Eke (2015), offender age was a leading variable of concern as 49% of their development sample was evaluated as having higher risk on this item (Seto & Eke, 2015), and in this 5-year fixed follow up analysis the AUC score for the variable of offender age 35 years old or younger at index offence was found to be a significant predictor of sexual reoffending at .61 (Seto & Eke, 2015). This means that this variable was significantly associated with sexual recidivism within this group, suggesting that there is an increased probability that a randomly selected recidivist within this convicted CSAI group will be aged 35 years or younger at the time of index offence than a randomly selected non-recidivist.

1.12 *CPORT-SV Item 2 – Any Prior criminal history*

Prior criminal history as a variable for recidivism has long been a focus of risk assessment research, including specifically in relation to CSAI offenders (Hanson & Morton-Bourgon, 2004; Seto & Eke, 2005; Wakeling, Howard, & Barnett, 2011). Amongst the general population of offenders, criminal history is the strongest of the Central Eight risk factors identified by Andrews and Bonta (2014). The central predictors include anti-social behaviours, anti-social personality traits, anti-social cognitions as well as anti-social associates. Previous work by Andrews and Bonta (2010) stated that the history of antisocial behaviour includes early involvement in a number and variety of anti-social activities in diverse settings. These can be reflected in major indicators such as having obtained a considerable number of convictions prior to an index crime.

Seto and Eke (2015) found that 41% of their development sample were at a higher risk of reoffending based on this item; that is, they had prior criminal convictions of any kind. The way in which they coded this item was whether there was any prior detected offences that had resulted in a criminal charge (even if the criminal charges were later withdrawn). The AUC score for this risk factor variable was .66, which means this variable was also significantly associated with sexual recidivism within this CSAI group. An offence that was detected did not need to be sexually related, however, non-criminal charges such as traffic offences were excluded.

1.13 *CPORT-SV Item 3 – Any prior or index contact sexual offence history*

It has been identified in previous research that evidence of contact sexual offending is a risk factor for sexual recidivism, including among the special group of CSAI offenders (Hanson & Morton-Bourgon, 2004; Wakeling, Howard, & Barnett, 2011). Babchishin, Hanson and VanZuylen (2015) explored the notion of contact sexual offending as a risk factor for sexual recidivism including amongst CSAI offenders. They focussed on the dual or mixed typology of offender who have both committed a CSAI offence and a contact sexual offence. They concluded that offenders who restricted their offending behaviour to online CSAI offences were different from mixed offenders against children. Evidence depicted that mixed offenders who have committed both CSAI offences and contact sexual offences were more likely to have paedophilic sexual interests than either CSAI only offenders, or contact offenders with no history of CSAI offending (Babchishin, Hanson, & VanZuylen, 2015). Advancement in knowledge and understanding of recidivism risk factors are still in need of further exploration, such as group composition with both mixed offenders' but also CSAI offenders by themselves.

The way in which the prior or index contact sexual offending risk variable is coded in the CPORT-SV is a detected sexual offence to which there was a formal response, for example a criminal charge or conviction, regardless of whether they were withdrawn later or not. Contact sexual offences included any contact of a sexual nature, including offences committed in the past that resulted in charges at the index investigation. An example that was outlined in the scoring guide of the CPORT-SV (Seto & Eke, 2015) was an individual being charged at the index investigation for a sexual assault that occurred two years ago but that had just come to light; this sexual assault would not be considered prior criminal history for the purposes of item 2, as it was undetected/unknown until the index investigation, but it would still count on this item due to index offences being included. Examples of how these may have come to light (and be counted) include: after media reports of the CSAI offence charges with victims coming forwards to disclose past sexual contact offences by the offender; or a case in which the CSAI depicted evidence of contact sexual offending by the offender (Seto & Eke, 2015). Seto and Eke's (2015) results displayed an AUC score for any prior or index contact sexual offence history was .62, which means this risk factor variable was significant and associated with sexual recidivism within the unique CSAI offender group.

1.14 *CPORT-SV Item 4 – Any prior or index failure on conditional release*

Much previous research has focussed on the well-established criminal risk factor of failure on conditional release, for example in Hanson and Morton-Bourgon (2005), meta-analysis, identified that those who have not been able to comply with bail, probation or parole conditions are more likely to further break rules by committing new crimes. This item on the CPORT-SV is scored positively (yes, i.e., score of 1) for any type of failure on conditional release, either prior to or at the time of the index investigation for CSAI. These were

identified as detected breaches or technical violations for which there was a formal response, such as a charge or recommitment for the encroachment and were counted regardless of outcome, for example if the charge was withdrawn. Examples of these violations include failure to appear for court, a technical breach of probation or parole, for example not reporting as required, a failure to abide by conditions relating to the use of the internet or technological devices, or being around children without a responsible adult present. Results from Seto and Ekes (2015) study concerning the predictive validity showed an AUC score of .60 for prior or index failure on conditional release, displaying a significant association to sexual recidivism.

1.15 *Why study the CPOR-SV in New Zealand?*

Countries such as the United Kingdom, Canada, the United States, Australia and New Zealand have enacted a variety of laws enabling the obligation of indefinite civil commitment, preventive detention sentencing, extended periods of parole supervision, extensive rehabilitation programs, as well as numerous methods of public notification about where high-risk sexual offenders reside once released back into society (Ball, 2017), along with the focal concern of public protection, there has been an increased emphasis on the validity of risk assessment findings by mental health professionals. There has always been debate over the optimal utilization of static (fixed) and dynamic (changeable) risk factors in risk assessment (Hanson & Bussiere, 1998; Andrews & Bonta, 2000; Phenix, et al., 2016). However, actuarial measures have consistently demonstrated a significant improvement over chance (also over unguided/unstructured judgement) for predicting the risk of sexual re-offending (Skelton et al., 2006). Actuarial measures function by placing individual offenders into groups with known reconviction rates, so that individual risk estimates are based on observed group outcomes (Moore, 2012).

It is important to identify risk factors for sexual recidivism among CSAI offenders using a richer data set than the registry follow-up reported by Seto and Eke (2015). The CPORT-SV is an internationally recognised brief tool for efficiently determining the risks posed by CSAI offenders. This four-item version will be evaluated in a New Zealand population in the current study, as it was concluded by past research that further validation with a larger independent sample and longer follow-up times was needed (Seto & Eke, 2015). This risk assessment tool was created by Seto and Eke by initially examining variables that were conceptually similar to established risk measure items from the Static-99 (Hanson & Thornton, 1999) and the Sex Offender Risk Appraisal Guide (Quinsey, Harris, Rice, & Cormier, 2006). The four items that will be analysed as per their inclusion in the CPORT-SV will be: offender age (specifically if the individual is 35 or younger at index offence); any prior criminal history, any prior or index contact sexual offending; and any prior or index conditional release failure (which is a new and dissimilar item compared to other risk assessment measures which have used this risk factor more generally among sex offenders (Hanson & Morton-Bourgon, 2005)).

It is hypothesised that these four items in combination will be significantly associated with recidivism and more specifically sexual offending recidivism. A further objective of this study will be to test if the predictive accuracy of this shortened version could be improved for the New Zealand context by including additional items scored from offence history information. It is hoped that our findings would therefore be helpful for those working with and managing the growing population of CSAI offenders in the New Zealand criminal justice system (Price, Lambie, & Krynen, 2015). As proposed by Seto and Eke (2015) a structured assessment of CSAI offender risk to reoffend would also be helpful to police threat assessors and other professionals making risk-related decisions, including at the time of prosecution

and sentencing, and for institutional placement, treatment recommendations, and supervision (Seto & Eke, 2015).

1.16 *Rationale for current research*

It is clear from the previous sections that there is still a need for controlled studies with maximal sample sizes to further validate risk assessment measures within the CSAI population. Moreover, validated and improved tools would be advantageous for our understanding of how best to treat CSAI offenders, by enhancing understanding of their specific reoffending risk factors with an innovative and comprehensive assessment. Particularly useful would be the validation of the CPORT-SV in the New Zealand context; whether the use of this tool in this jurisdiction was justified, and whether its predictive accuracy could be enhanced with additional variables available in official records in this country.

To our knowledge there has not been research within New Zealand that has applied a specific risk assessment tool tailored towards CSAI offenders. As noted, it has been suggested by the creators of the CPORT-SV that a further substantiation with a larger and independent sample with longer follow-up periods would be useful to help gauge the generalizability of the assessment tool or suggest improvements (Seto & Eke, 2015). This current research aims to do just that, with a potential cross-validation of risk factors, as well as to examine the other risk factor candidates. It has been stated previously that the risk of recidivism in special groups of sex offenders is of specific interest to clinicians, policy makers, and the public alike (Scott, 2015). With this in mind, the combination of a world recognised risk assessment tool, and potentially additional risk variables contained in available information due to having been recorded by the New Zealand criminal justice system could provide real world purpose in an integrated tool for clinical and criminal justice

decision makers in New Zealand. Overall, it is hoped that the findings from this study will be useful to the justice sector and broader society to aid and expedite accurate risk assessment for this special population.

Specifically, in this current study we examine a special group of offenders that had been convicted of a CSAI offence in New Zealand between the years 1998 and 2014. This group was then evaluated using the CPORT-SV as well as other recorded criminal offence history information made available by the Department of Corrections. It was anticipated that the CPORT-SV would be found to be generalizable in terms of showing predictive validity within the New Zealand context of CSAI offenders. With this in mind, we then wanted to achieve, if possible, the enhancement of this predictive risk assessment tool with the inclusion of other information available (such as the offenders' scores on the various ASRS items). Consequently, there were two focal aims of the current research. Firstly, to determine whether the CPORT-SV will be significantly associated with various types of recidivism for the special population of CSAI offenders. This would of course be helpful for those working with and managing the growing population of CSAI offenders in the New Zealand criminal justice system. Secondly, our study will test whether the predictive accuracy of the CPORT-SV can be improved for the New Zealand context by including additional items relating to offence history information.

Chapter 2

Method

2.1 - Offender Samples

Data was collected on a total sample of 552 male offenders that were convicted in New Zealand of offences relating to CSAI, between the years 1998 to 2014 under the Films, Videos & Publications Classification Act (1999) (e.g. possession of objectionable material). The mean age of the sample was 39.51 years, with an age range from between 17 years to 80 years of age. Data was provided by the New Zealand Department of Corrections. The sample consisted of both individuals on custodial sentences and those on community sentences. For those who received custodial sentences, information regarding release date was not provided. Therefore, follow up length was not able to be precisely determined. Information was taken from index sentencing date across the whole sample, until the date of data collection July 2017. The follow up period ranged between 2years 7months and 19years 2months, with a mean of 7years 7months. In the original list, five offenders' records were identified and removed due to lack of descriptive information, such as date of birth and ASRS scores, leaving 547 offenders.

2.2 - Procedure

The offence histories for these specific offenders were downloaded from the New Zealand Correction Department 'sharefile' site that was provided via a link that was valid for access for seven days only. The particular offence histories consisted of relevant details such as the type of offence, hearing and offence dates, prison release dates; in addition, demographic information was included such as date of birth, and ethnicity.

The Child Pornography Offender Risk Tool (CPORT)

The CPORT is a developed structured risk checklist, to predict any sexual recidivism among adult male offenders with a conviction for child pornography offences. The CPORT was developed in Ontario Canada, using available data from a sample of men convicted of child pornography offences, and therefore it does not include all of the relevant risk assessment items that would usually be examined. For example, Seto and Eke (2015) identified phallometrically-assessed sexual arousal to children is a strong predictor of sexual recidivism among sex offenders, but acknowledged that they did not have this information in the development process of the CPORT. The original version of the CPORT contains 7 items, which were all identified in Seto and Eke's (2015) development sample as being associated with greater likelihood of any sexual recidivism. The last three items included; offenders having paedophilic interests, more boy than girl content in the child pornography content that the offender possessed, and more boy than girl content in child nudity and other child content, excluding child pornography content. However, a compact version (4-items) of the CPORT (CPORT-SV) was also analysed which was still found to be significant in the development sample. This is what will be examined within this New Zealand context sample as Seto and Eke (2015) assumed it was more likely that sexual interest in children content would be missing in clinical or correctional files.

Item 1 'Offender age at time of the index investigation' is coded as higher risk if age is 35 years old or younger. This item is scored as either 1 if younger than 35 years of age, or 0 if older than 35 years old.

Item 2 'Any prior criminal history' is coded as higher risk if yes. This item is scored as a 1 if yes, or 0 if the offender has no prior criminal detected offences resulting in a criminal charge (regardless of outcome e.g. a withdrawn charge).

Item 3 ‘Any prior or index contact sexual offence history’ is coded as higher if yes. This item is scored as a 1 if yes, or 0 if the offender has a detected sexual offence for which there was a formal response (criminal charge or conviction). This item was coded as a 1 if offences committed in the past that resulted in charges at the index offence.

Item 4 ‘Any prior or index failure on conditions such as probation, parole or conditional release’ was coded as higher risk if identified as a yes. This item is scored positively for any type of failure or detected breaches for which there was a formal response, such as a charge or recommitment. Examples of this can include failure to appear for court or a technical breach of probation or parole (e.g. not reporting as required).

The cumulative score is then calculated across the 4 items, giving a minimum possible total score of 0 and a maximum possible total score of 4. 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, ‘Medium-High Risk’ corresponds to a total score of 2 and ‘High Risk’ corresponds to a total score of 3-4.

Automated Sexual Recidivism Scale (ASRS)

This risk assessment tool is employed to measure the risk level of serious sexual offenders and the probability of them committing a new sexual offence after they are released back into the community. The ASRS as previously mentioned, was developed in New Zealand and is based on the Static-99, one of the most utilised and validated risk assessment tools in use today (Hanson R. K., 2002). The ASRS is a 7-item scoring measure, comprising of static items acquired from the Static-99 that can be scored using data found in the Integrated Offender Management System (IOMS) database, proposed to be an automatically-

scored measure of risk level (Skelton et al., 2006), unlike the items on the Static-99 which are typically completed by a skilled corrections professional. The ASRS scores were all provided by The Department of Corrections for this special population of child pornography offenders. A description of each of the items in the scale and how they are coded follows.

Item 1 ‘Prior Sex Offences’ is the 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 establishes if the offender was under or over the age of 25 when they were 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 aggregate score is then calculated across the seven items, providing a score between 0 and 9. In relation to the total score on the measure, each individual child pornography offender is placed in to one of four corresponding categories. ‘Low Risk’ relates to a total score of 0, ‘Medium-Low Risk’ relates to a total score of 1-2, ‘Medium-High Risk’ relates to a total score of 3-4 and ‘High Risk’ relates to a total score of 5 or more.

To generate a number of the statistical queries, a detailed breakdown of the offence codes was required to create variables related to the individual offence histories. This particular method involved importing a list of all the offender ID numbers and their corresponding sexual offence and descriptions into a Microsoft Excel spreadsheet, for example “Offender ID - 2968 – Made an intimate visual recording”.

2.3 Planned data analyses

The two goals of the investigation were to be addressed, each involving alternate analyses. These goals are as follows:

Goal 1: It is hypothesised that the four-item CPORT-SV will be significantly associated with recidivism (any, any sexual, sexual contact, and CSAI) in this proposed New Zealand validation study.

Goal 2: To test if the predictive accuracy of the shortened CPORT-SV can be improved for the New Zealand context by including additional items relating to the offence history information (i.e. ASRS items).

Descriptive statistics are to be used to characterize the sample group of CSAI offenders in terms of personal and offence related characteristics. Further descriptive statistics of the CPORT-SV and the ASRS assessment scores will be performed.

Correlational analyses for concurrent validity of the CPORT-SV will then be completed to assess the relationship between the CPORT-SV and ASRS items and total scores. Further analyses will be executed to assess the predictive accuracy of the CPORT-SV in terms of correlations between items/total and recidivism outcomes (any, sexual, CSAI, and sexual contact), and AUC values. For the purpose of comparison, these analyses will be carried out in relation to the ASRS also.

A logistic regression was then used to investigate the CSAI recidivism outcome in particular with, with the CPORT-SV total and the strongest predictive items from the ASRS as predictors to determine whether the inclusion of ASRS items might add significant incremental predictive validity. By doing this we can test if the CPORT-SV is in fact performing better with the inclusion of these particular items. Depending on the logistic regression, a final step is to see whether the addition of ASRS items to the CPORT-SV would result in an increased overall AUC.

Chapter 3

Results

3.1 Descriptive Statistics

The sample for this study consisted of all 547 males who received convictions in New Zealand between 1998 and 2014, for a range of child pornography offences, for example possessing an objectionable publication. The ages ranged from 17 years to 71 years old, with an average of 40.0 ($SD = 13.0$) years. Based on recorded file information regarding ethnicity, the majority (81.35%) were New Zealand European; 6.40% were New Zealand Maori, 1.65% were Pacific peoples; and the remaining 5.11% were of other ethnicities, including the only other category provided as Asian/other.

Table 1. Descriptive statistics of CPORT-SV and ASRS risk assessment tool scores

	<i>n</i>	<i>M</i>	<i>SD</i>	min	max
CPORT-SV Total	547	1.27	1.24	0	4
ASRS Total	547	1.7	1.19	0	9

Child Pornography Offender Risk Tool short version (CPORT-SV)

CPORT-SV Items: CPORT-SV Item 1, offender age 35 years or younger at index offence; CPORT-SV Item 2, any prior criminal history; CPORT-SV Item 3, any prior or index sexual offending; CPORT-SV Item 4, any prior or index conditional release failure.

Automated Sexual Recidivism Scale (ASRS)

ASRS Items: Item 1, prior sexual offences; Item 2, prior sentencing dates; Item 3, non-contact sexual convictions; Item 4, index non-sexual violence; Item 5, prior non-sexual violence; Item 6, any male victim; Item 7, age at release.

23.81% ($N = 130$) were reconvicted for any kind of new offense, 7.50% ($N = 41$) were convicted for a new sexual contact offence, (e.g. rape) 4.03% ($N = 22$) were convicted for violent re-offending (e.g. assault) and 13.00% ($N = 71$) were convicted for a new child-pornography offence.

3.2 Concurrent validity of the CPORT-SV with ASRS

Correlations between the ASRS and the CPORT-SV were analysed, as illustrated in Table 2. The CPORT-SV overall score and the ASRS total had a moderately strong correlation, ($r = .578, p < .01$). Similarly, all ASRS items, with one exception, were positively correlated with the CPORT-SV total. This exception was ASRS Item 3: Non-contact sexual convictions. This is to be expected given that the current sample were pre-selected as all having non-contact sexual convictions relating to CSAI as per study eligibility criteria. Aside from ASRS Item 3, the majority of item level correlations between the two measures were significant and positive, with most of the non-significant correlations involving either of the offender age items (i.e., CPORT-SV Item 1; ASRS Item 7), by which suggesting concurrent validity for the CPORT-SV.

Table 2. Correlations between the CPORT-SV and ASRS items and total scores

	CPORT-SV Subscales				CPORT-SV Overall
	CPORT-SV1 <i>n</i> =546	CPORT-SV 2 <i>n</i> =546	CPORT-SV 3 <i>n</i> =546	CPORT-SV4 <i>n</i> =546	<i>n</i> =546
ASRS Items					
Item 1	.067	.497**	.452**	.340**	.498**
Item 2	.094	.433**	.278**	.334**	.421**
Item 3	.009	.012	.041	.042	.054
Item 4	.074	.121**	.137**	.111**	.163**
Item 5	.094*	.360**	.289**	.239**	.363**
Item 6	-0.032	.184**	.317**	.027	.179**
Item 7	.187**	-.025	-.053	.179**	.108*
ASRS Total	.118**	.556**	.497**	.399**	.578**

Note: * $p < .05$. ** $p < .01$. *** $p < .001$

Child Pornography Offender Risk Tool short version (CPORT-SV)

CPORT-SV Items: CPORT-SV Item 1, offender age 35 years or younger at index offence; CPORT-SV Item 2, any prior criminal history; CPORT-SV Item 3, any prior or index sexual offending; CPORT-SV Item 4, any prior or index conditional release failure.

Automated Sexual Recidivism Scale (ASRS)

ASRS Items: Item 1, prior sexual offences; Item 2, prior sentencing dates; Item 3, non-contact sexual convictions; Item 4, index non-sexual violence; Item 5, prior non-sexual violence; Item 6, any male victim; Item 7, age at release

3.3 Predictive Validity

We examined correlations between total CPORT-SV scores and the four CPORT-SV items individually, and the four types of recidivism (any recidivism, sexual recidivism, sexual contact recidivism, and child pornography recidivism). These correlations are shown in Table 3. As can be seen, the CPORT-SV overall score ($r = .472, p < .01$), and each of the four CPORT-SV items (ranging from $r = .127$ to $r = .471, p < .01$) were all significantly correlated with any recidivism (of any type). This was also the case for sexual recidivism ($r = .37, p < .01$) for the CPORT-SV overall score, and (ranging from $r = .14$ to $.37, p < .01$) for CPORT-SV items 1 to 4. It can also be observed that sexual contact recidivism was also positively correlated with the CPORT-SV overall score ($r = .239, p < .01$). This was also the case for all of the CPORT-SV items, excluding CPORT-SV item 1. For CPORT-SV items in relation to sexual contact recidivism, CPORT-SV item 2 ($r = .267, p < .01$); CPORT-SV item 3 ($r = .154, p < .01$); and CPORT-SV item 4, ($r = .198, p < .01$) were all significantly correlated. CSAI recidivism was also positively correlated with the CPORT-SV overall score ($r = .336, p < .01$), and each of the four CPORT-SV items (ranging from $r = .095$ to $r = .336, p < .01$) were all significantly correlated with CSAI recidivism as well.

The analysis often used in evaluating offender risk scales is called the Receiver Operating Characteristic (ROC), which produces the Area Under the Curve (AUC) measure. If the risk has an AUC of 1.0, this would be deemed as a perfect prediction, and if an AUC equals .50 then the measure performs no better than chance (Bonta & Andrews., 2016).

Significant AUCs for the CPORT-SV items were found to be within the good range (.60-.90) with some of the strongest AUCs being found in the CSAI recidivism category.

Table 3. Correlations and AUCs between CPORT-SV and recidivism outcomes.

CPORT-SV Items	Any Recidivism			Sexual Recidivism			CSAI Recidivism			Sexual Contact Recidivism		
	r	AUC	95% CI	r	AUC	95% CI	r	AUC	95% CI	r	AUC	95% CI
CPORT-SV 1	.26**	.65***	[.59, .70]	.17**	.61**	[.55, .68]	.22**	.66***	[.59, .72]	.03	.53	[.43, .62]
CPORT-SV 2	.41**	.74***	[.69, .79]	.35**	.73***	[.67, .78]	.27**	.70***	[.63, .76]	.27**	.75***	[.68, .82]
CPORT-SV 3	.13**	.56*	[.50, .62]	.14**	.58*	[.51, .65]	.10*	.56	[.49, .63]	.15**	.62*	[.53, .72]
CPORT-SV 4	.47**	.74***	[.68, .79]	.33**	.69***	[.62, .75]	.32**	.70***	[.63, .77]	.20**	.66**	[.57, .75]
CPORT Overall	.47**	.80***	[.76, .84]	.37**	.77***	[.71, .82]	.34**	.77***	[.71, .82]	.24**	.74***	[.67, .82]

Note: * $p < .05$. ** $p < .01$. *** $p < .001$

CPORT-SV items: CPORT-SV Item 1, offender age 35 years or younger at index offence; CPORT-SV Item 2, any prior criminal history; CPORT-SV Item 3, any prior or index sexual offending; CPORT-SV Item 4, any prior or index conditional release failure

Correlations between the ASRS items and the recidivism variables were also calculated to allow for direct comparisons with the CPORT-SV in terms of predictive validity in this dataset of CSAI offenders. These are displayed in Table 4. The ASRS-Scores correlated positively with ‘any recidivism’ ($r = .50, p < .01$); ‘sexual recidivism’ ($r = .45, p < .01$); ‘CSAI recidivism’ ($r = .30, p < .01$); ‘sexual contact recidivism’ ($r = .44, p < .01$). ASRS item 3 was not predictive for any category of recidivism; again, this is attributable to the lack of variation in the current dataset, pre-selected for the presence of a non-contact (CSAI, conviction). This was also the case for ASRS item 7, which was not related to recidivism across all types analysed. Furthermore, ASRS item 4 was significantly correlated with any recidivism and sexual recidivism, however, it was not related to CSAI recidivism, nor sexual contact recidivism.

Moreover, AUCs for the ASRS total/individual items and recidivism categories were calculated. Many of the ASRS items ranged between fair (.70 - .80) and excellent (.90 – 1.0), with ASRS item 1 being nearly always superior in comparison to the other items. AUCs for total ASRS scores were calculated in relation to all of the recidivism outcomes. They were all significant and within the excellent range (.90 - 1.0), except for CSAI recidivism which had an AUC of .74.

Table 4. Correlations and AUCs between the ASRS and recidivism outcomes.

ASRS Items	Any Recidivism			Sexual Recidivism			CSAI Recidivism			Sexual Contact Recidivism		
	r	AUC	95% CI	r	AUC	95% CI	r	AUC	95% CI	r	AUC	95% CI
Item 1	.53**	.80***	[.75, .85]	.53**	.83***	[.78, .88]	.37**	.77***	[.71, .84]	.52**	.90***	[.85, .95]
Item 2	.31**	.62***	[.57, .68]	.25**	.62***	[.55, .68]	.20**	.60*	[.53, .68]	.22**	.64**	[.54, .74]
Item 3	.04	.50	[.45, .56]	.03	.50	[.44, .57]	.03	.50	[.43, .57]	.02	.50	[.41, .60]
Item 4	.13**	.53	[.47, .59]	.09*	.52	[.46, .59]	.06	.52	[.44, .59]	.05	.52	[.42, .61]
Item 5	.21**	.58*	[.52, .64]	.13**	.55	[.48, .62]	.11**	.55	[.47, .62]	.14**	.58	[.48, .68]
Item 6	.10*	.53	[.47, .59]	.12**	.54	[.48, .61]	-.01	.50	[.43, .57]	.22**	.61*	[.51, .71]
Item 7	.06	.51	[.45, .57]	.03	.51	[.44, .57]	-.02	.51	[.43, .58]	-.05	.51	[.42, .60]
ASRS Total	.50**	.81***	[.76, .86]	.45**	.81***	[.76, .86]	.30**	.74***	[.68, .81]	.45**	.89***	[.84, .94]

Note: * $p < .05$. ** $p < .01$. *** $p < .001$

Automated Sexual Recidivism Scale (ASRS) ASRS-total Items: Item 1, prior sexual offences; Item 2, prior sentencing dates; Item 3, non-contact sexual convictions; Item 4, index non-sexual violence; Item 5, prior non-sexual violence; Item 6, any male victim; Item 7, age at release.

3.4 Logistic Regression with CPORT-SV items ASRS item 1 with CSAI only

Due to logistic regressions abilities to predict conditional probabilities, it was essential to use its analyses in this next step. This type of analyses is useful as we are able to calculate expectations of the CPORT-SV total measure and the probability of risk of recidivism with additions that may or not improve that probability. As shown from the analyses above our AUCs showed ASRS total performed better than the CPORT-SV total in the recidivism outcome categories: any, sexual and sexual contact. However, the CPORT-SV total performed better in comparison to the ASRS total for the recidivism outcome of CSAI (AUC = .77). With the population sample specified as offenders that have been convicted of CSAI, it seemed appropriate to carry out a binary logistic regression to explore whether supplementing the CPORT-SV with additional variables could further improve its predictive accuracy.

Rationale for the focus on the use of ASRS item 1 was that it was the strongest predictor of CSAI recidivism in table 4. We believed that ASRS item 2 would be the next item to be included in the CPORT-SV regression due to being the next strongest predictor of CSAI recidivism, however when entered into the regression analysis it was not significant with the CPORT-SV total and ASRS item 1, therefore any further exploration was ended ($p > .05$). The above correlation analyses from Tables 3 and 4 we explored primarily the CSAI recidivism outcome sample, with CPORT-SV total and ASRS Item 1. Moreover, this gives us motivation to combine ASRS item 1 to the CPORT-SV with the aim to enhance the predictive accuracy as much as possible with the available information. Thus, we utilized the CPORT-SV total and ASRS item 1 to identify whether this addition would improve the assessment of risk in relation to CSAI recidivism.

Table 5. CPORT-SV total plus ASRS item 1 predicting CSAI recidivism.

CPORT-SV Items	CSAI Recidivism				95% CI
	B	SE	Wald	Exp(B)	
Block 1 (analyses one)					
CPORT Total	.81	.11	50.76	2.24***	[1.79, 2.79]
Block 2 (analyses one)					
CPORT Total	.58	.13	20.74	1.79***	[1.39, 2.30]
ASRS Item 1	.74	.18	16.96	2.09***	[1.47, 2.96]

Note: * $p < .05$. ** $p < .01$. *** $p < .001$

Child Pornography Offender Risk Tool short version (CPORT-SV)

CPORT-SV Items: CPORT-SV Item 1, offender age 35 years or younger at index offence; CPORT-SV Item 2, any prior criminal history; CPORT-SV Item 3, any prior or index sexual offending; CPORT-SV Item 4, any prior or index conditional release failure.

Automated Sexual Recidivism Scale (ASRS), ASRS Items: Item 1, prior sexual offences; Item 2, prior sentencing dates; Item 3, non-contact sexual convictions; Item 4, index non-sexual violence; Item 5, prior non-sexual violence; Item 6, any male victim; Item 7, age at release

As shown in Table 5 above, in the first analysis in Block 1, we tested CPORT-SV total for CSAI recidivism, which was significant, CPORT-SV total (CPORT-SV total ($B = 0.81$ ($SE = 0.11$), $\exp(B) = 2.24$, $p = .001$). In Block 2 we tested CPORT-SV total and ASRS item 1 for CSAI recidivism in which case were significant, (CPORT-SV total, ($B = 0.58$ ($SE = 0.13$), $\exp(B) = 1.79$, $p = .001$); (ASRS item 1, ($B = 0.74$ ($SE = 0.18$), $\exp(B) = 2.09$, $p = .001$). This indicates that ASRS item 1 adds significant incremental predictive validity to the CPORT-SV total score. Moreover, subsequent analyses revealed that a recalculated risk score consisting of CPORT-SV total plus ASRS item 1, had an AUC of 0.82 ($p < .001$); notably this is a substantial increase compared to the AUC for CPORT-SV total score on its own, which as reported in table 2 was 0.77 ($p < .001$).

Chapter 4

Discussion

4.1 Summary of the study

This study examined whether the risk assessment tool known as the CPORT-SV would show predictive validity in relation to different types of recidivism within a New Zealand population of CSAI offenders. An additional goal of this study was to explore whether the predictive accuracy of the CPORT-SV might be able to be improved within this context by incorporating supplementary items available from the information supplied by the Department of Corrections. Individuals who were convicted of a CSAI offence between the years 1998 and 2014 (N= 547) were evaluated using the CPORT-SV and their subsequent offence histories were followed up in order to address the primary goal of the present study. Results supported the hypothesis that the CPORT-SV would be significantly associated with recidivism, as correlations between the risk assessment tool overall and four forms of recidivism investigated (any, sexual, CSAI and sexual contact) were all significant (ranging from $r = .24$ to $r = .47$, all p values $< .01$). For the second objective of this study, we wanted to be able to compare the CPORT-SV to an already well-known psychometric measure for recidivism in New Zealand (Automated Sexual Recidivism Scale). We were able to identify with the use of AUCs (area under the curve) that the CPORT-SV overall score was a better predictor of CSAI recidivism (AUC = .77) in comparison to the ASRS Total (AUC = .74). Subsequent, binary logistic regression analyses identified that supplementing the CPORT-SV total score with item 1 from the ASRS (prior sexual offences) improved the predictive accuracy from AUC = .77 to AUC = .82. The interpretation of these scores suggest that the addition of the ASRS item 1 pushes the scoring category from fair to good (Hand, 2009).

To ensure the CPORT-SV is a valid measure of risk of recidivism we evaluated its correlation with the ASRS, a well-established risk assessment tool in New Zealand. It can be seen in Table 2 that all of the CPORT-SV items were moderately correlated to the existing ASRS items, except CPORT-SV item 1. The CPORT-SV overall and the ASRS total correlation was a significant and high correlation, which assumes they are measuring similar constructs. This is an encouraging notion especially at the beginning of our analyses as it gives us confirmation to further investigate the CPORT-SV as a measure of risk of recidivism and also on an item level basis as well.

Goal 1: Determine whether the CPORT-SV will be significantly associated with various types of recidivism for a New Zealand CSAI offender population in this validation study

Our first goal was to establish if the CPORT-SV would be significantly associated with various forms of recidivism with those who had committed a CSAI offence (i.e., any recidivism, sexual recidivism, CSAI recidivism, and sexual contact recidivism). The CPORT-SV overall scores were significantly related to all forms of recidivism with correlations of low to moderate magnitude. Sexual contact recidivism had the lowest correlation while the ‘any’ recidivism category had the highest. This suggests that the CPORT-SV can predict the risk of recidivism amongst this CSAI convicted group in New Zealand. These findings are similar to Seto and Eke’s (2015) research with the full CPORT version as well as the ‘compact’ version (CPORT-SV) being significantly associated with any recidivism, and more specifically sexual recidivism, with moderate predictive accuracy. These findings have a clear policy implications for the risk assessment and management of CSAI offenders which are explained further below.

4.2 CPORT-SV items and their association to the ASRS as well as recidivism

We examined the CPORT-SV's items in more detail to establish which items are particularly associated with the well-established risk assessment tool the ASRS, as well as the items that are significantly predictive of recidivism themselves. When analysing for concurrent validity, correlations between individual CPORT-SV items and individual ASRS items were calculated. CPORT-SV item 1 (offender age 35 years old or younger at the time of index offence) had significant but weak correlations across all categories of recidivism excluding sexual contact recidivism which did not have a significant correlation and a weak AUC. The CPORT-SV overall displayed concurrent validity with a majority of the ASRS items and the ASRS total in particular, as well as having the strongest AUCs for any recidivism outcome.

What was noticed was ASRS item 3 'non-contact sexual convictions' having no correlation to any of the CPORT-SV items including the CPORT-SV total score as seen in table 2, as well as, no correlation to any recidivism outcomes as seen in table 4. This could be due to the lack of variability in this sample for this particular item (i.e. all individual scoring 1 on ASRS item 3 by the virtue of their CSAI conviction). In previous research, Helmus and Thornton's (2015) meta-analysis showed predictive accuracy was not significant to offender type with the risk variable of 'non-contact sexual offending'. They acknowledged that there was also a lack of variation which could be due to a potential sampling issue in the preselected offenders used in their research (Helmus & Thornton, 2015).

Goal 2: To test if the predictive accuracy of the shortened CPORT-SV total can be improved for the New Zealand context by including additional ASRS items.

A number of specific findings from the correlation analyses suggest that it may be worthwhile to explore. Using logistic regression analyses, whether supplementing the CPORT-SV total score with additional available variables may further enhance predictive accuracy. The dichotomous nature of the recidivism data meant that binary logistic regression analyses were appropriate. It was observed that across recidivism outcomes that the ASRS total performed comparatively better in terms of predictive validity (AUC values) than the CPORT-SV total except for one category, CSAI recidivism. The AUC results for the CPORT-SV and ASRS total scores in terms of predicting the CSAI recidivism outcome were notably different, with the ASRS AUC = .74 and the CPORT-SV AUC = .77. This difference is of particular interest since the CPORT-SV was specifically created for the population of CSAI offenders (Seto & Eke, 2015). This result suggests that the CPORT-SV is capable of measuring the special population of CSAI offenders for risk of CSAI recidivism better than the tool currently being used in New Zealand (i.e. the ASRS). This being said, it was worthwhile to further investigate the CPORT-SV regarding whether its accuracy could be improved even further for the CSAI population.

As a preliminary step, CSAI recidivism was focussed on with ASRS items AUCs of particular interest. ASRS items 1 and 2 were the only ones that had significant AUCS in comparison to the other items, ASRS item 1 AUC = .77 ($p = .001$) and ASRS item 2 AUC = .60 ($p = .05$). Therefore, ASRS item 1 'any prior sexual offences' was chosen to be put in the regression with the CPORT-SV due to its significant AUC score. Interestingly, this is the item in the ASRS measure that is not scored on a simple "0" or "1" dichotomy, but is scored on a four- point scale ranging from zero to three. This item had the highest correlation to CSAI recidivism out of all the ASRS items. Subsequently, the next item that was considered was ASRS item 2,

this was also due to the high correlation to CSAI recidivism. It was important to investigate all the highly correlated ASRS items with the CPORT-SV total, however ASRS item 2 (any prior sentencing dates) was added to a binary logistic regression with the CPORT-SV total and ASRS item 1 and was found not to add any significant incremental validity ($p > .05$), therefore was not explored further for the improvement of the CPORT-SV.

A binary logistic regression was conducted with the goal of establishing whether the CPORT-SV total could be improved with the addition of ASRS item 1. The results for the analyses showed that the CPORT-SV total was significant in the estimation of probability of CSAI recidivism in the first step. When ASRS item 1 was also entered (along with CPORT-SV total) in the second step, the CPORT-SV remained significant while the ASRS item 1 was also significant. This shows that the ASRS item 1 is significantly adding to the prediction of CSAI recidivism, even when the variability predicted by the CPORT-SV total is taken into account. A reason for the significant enhancement of the CPORT-SV with ASRS item 1 could be the robust empirical evidence in the literature for prior sexual offences being highly associated with sexual recidivism (Helmus & Thornton, 2015), or the fact that the ASRS weights the prior sexual offences variable higher than the similar item in the CPORT-SV, which may explain why adding the ASRS item 1 to the CPORT-SV total improves it. This could suggest that this item variable should be weighted higher for the best prediction for risk of recidivism. Helmus and Thornton (2015) identified in their meta-analysis of actuarial scale performance of individual items that studies that did not demonstrate statistically significant accuracy for prior sexual offending tended to have smaller sample sizes than most studies, indicating lower statistical power.

4.3 Limitations

A challenge for this study was the limitations of the data provided. A key problem was detected with the recidivism information provided by the Department of Corrections for the purpose of this study, involving the categorisation of the different types of re-offences. Specifically, in the dataset provided, for each sentencing date only the “most serious offence” was specified. Although this was generally informative, there may have been the possibility that an offence determined to be ‘less serious’ (such as, potentially, CSAI) might have been masked by a violent or contact sexual re-offence dealt with simultaneously on the same sentencing date. It is hoped that such a situation would be rare in the sample, however it is nonetheless important to note the possibility that this issue may have led to flaws within the dataset, with the potential for CSAI offences in particular to be underrepresented. It would be worthwhile for future research to obtain complete recidivism information for the sample and confirm current findings.

Another issue surfaced surrounding potential of non-represented recidivism of individuals, that may have been included within the dataset where not applicable, therefore not reflecting the actual reoffending of this sample. The inclusion of these individuals occurred due to the incomplete dates of release for individuals within the sample. As we could not identify dates the individuals were released, this means that some may not have been released into society, therefore not having the opportunity to reoffend, therefore these individuals could have been counted as non-recidivists when theoretically, they had no opportunity to reoffend. It is recommended to account for differences in ‘time at large’ in further research, by carrying out a survival analyses, for example, using Cox regression or Kaplan-Meier survival analyses. Previous research by Beggs and Grace (2010) took ‘time at large’ into account by carrying out a Kaplan-

Meier survival analysis comparing four groups of low to high risk offenders (low, moderate/low, moderate/high, high) to look at the differential rates of recidivism across time.

A further limitation related to the recidivism data that is important to note, is the well-known issue of official records (such as convictions) under-representing actual reoffending rates (Seto & Eke, 2015). This may be even more of an issue in relation to CSAI recidivism, given the high accessibility of CSAI via the internet in today's world of technological advancement compared with a sexual contact offence. Therefore, a substantial proportion of individuals in the sample could have reoffended in terms of accessing CSAI, combined with the previously noted possibility of masked CSAI recidivism if sentenced alongside other crimes deemed "more serious", there is a possibility of considerable underrepresentation of CSAI and other types of recidivism.

4.4 Implications

In terms of real-world implications of the current results, the AUC relating to CSAI recidivism for the CPORT-SV was higher than that for the ASRS which is valuable information for clinicians who are tasked with assessing the risk of a CSAI offender. Although, in the current study the CPORT-SV overall had a higher AUC, in relation to CSAI offending, the ASRS was superior with regard to every other recidivism category. Adding to these points, the CPORT-SV's AUC when combined with the ASRS item 1 improved considerably than its original AUC. This could suggest to clinicians that when having to assess risk for a CSAI offender they may be best to use the CPORT-SV to assess risk of further CSAI offending, but the ASRS to assess risk of sexual recidivism more generally. To further this idea, the CPORT-SV could become automated for clinician use, just as the ASRS is (Vess, 2009). This would make

this new and improved risk assessment tool more accessible and efficient. The amalgamation of the CPORT-SV and the ASRS item 1 adds definitive incremental validity. As can be seen in table 5, the CPORT-SV total plus ASRS adds to the already increased significant predictive ability.

4.5 Future Research directions

The evidence of predictive validity for the CPORT-SV gives encouragement to validate the full version CPORT measure, if the necessary offender data were to be available (e.g. description of gender preference in CSAI content). As previous research has identified atypical sexual interests or greater interest in boys rather than girls as reflected in content as an import predictor of recidivism, it would seem a natural progression to see if this was the same in the New Zealand context (Hanson & Morton-Bourgon, 2005; Seto M. C., 2010; Seto & Eke, 2015).

Seto and colleagues (2011) stated in their research that official records can be problematic for genuine representation of an offender sample, and further information could be provided to improve this issue. This was also an issue that was faced in this current study. The use of the most serious offence information has the potential to be extremely helpful for identifying high risk offenders and their possible re-offences. However, a clarification between the most serious offence and other potentially important re-offences including CSAI recidivism, would be very beneficial. This could resolve the possible issue of underrepresentation of re-offending within this sample. If clarity on the recidivism outcomes could be provided from a different source this could further validate the significant CPORT-SV as a potentially useful risk assessment tool for New Zealand.

With the data limitations in mind, adjusting the method in which criminal conviction data was obtained for this research would be favourable. For ease and understanding, the use of one data format from the same source would be preferential (instead of multiple information files), potentially with a focus on offence specifics. For example, police databases have a wide range of information that may have the capacity to extend the already predictive risk measures which could be a future possibility (policedata.nz, 2018). The ability to identify the specifics of an offence could be supplementary to this particular risk assessment tool (CPORT-SV) by being even more descriptive. An example of this can be seen in Seto and Eke's (2015) research, where they had the access to CSAI preference information from the police case files. They found that (as reflected in CSAI content), a greater interest in boys rather than girls was a risk factor consistent with potential risk of sexual recidivism (Seto & Eke, 2015).

4.6 Conclusions

In conclusion, this research has supported the validity of the CPORT-SV for use as a risk assessment tool with CSAI offenders in New Zealand. The CPORT-SV was found to be predictive of a range of recidivism outcomes, as well as showing concurrent validity with the established risk assessment tool the ASRS. Supplementing the CPORT-SV with ASRS item 1 (any prior sexual offences) added significant incremental predictive accuracy in relation to CSAI recidivism. More clarity with recidivism outcome data that was provided for this current study would be beneficial to avoid any missed CSAI reoffending. This current research could be of great interest for those in the clinical sector in assessment who would certainly benefit from increased knowledge of a possible alternative risk assessment tool tailored specifically for CSAI offenders.

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