Université de Montréal

Gains de traitement sur des facteurs de risque dynamique et leurs liens avec la récidive chez des agresseurs sexuels à risque et besoin modérés à élevés

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Résumé

L'évaluation des traitements visant la réduction des taux de récidives, surtout sexuelle, chez les agresseurs sexuels est un sujet de grande importance due aux conséquences physiques et psychologiques que ces crimes ont sur les victimes et leurs familles. Pour ces raisons, la présente étude avait comme objectif principal d'évaluer des changements suivant la participation d'un programme de traitement en communauté spécialisé dans le traitement d'agresseur sexuel à risque et aux besoins modérés à élevés. Pour accomplir ceci, les gains acquis sur différents facteurs de risques dynamiques et leurs capacités de prédire la récidive ont été examinés. Les gains ont été mesurés en utilisant une échelle d'évaluation du risque dynamique de récidive, des questionnaires auto-rapportées et des évaluations phallométriques. La Stable-2007 et ses trois dimensions (c.-à-d. antisocial, déviance sexuelle, et hypersexualité) ont été utilisées pour mesurer plusieurs facteurs de risques dynamiques, le Molest and Rape Scale ont été utilisés pour mesurer les distorsions cognitives, et le Sexual Interest Cardsort Questionnaire et l'évaluation phallométrique ont été utilisés pour mesurer les intérêts sexuels paraphiliques. Toutes les mesures ont été administrées pré et posttraitement à 105 agresseurs sexuels avec des victimes soit adultes et/ou enfants ayant complété le programme de traitement. Les données de récidives ont été obtenues des dossiers criminels officiels avec une période de suivi moyenne de 12 ans. Suite à la complétion du programme de traitement, il y a eu des gains significatifs sur les facteurs de risque dynamiques mesurés par la Stable-2007 et ses trois dimensions, et sur les intérêts sexuels paraphiliques mesurés par le Sexual Interest Cardsort Questionnaire et l'évaluation phallométrique. Cependant, aucune amélioration n'a été trouvée pour les distorsions cognitives. En examinant la relation prédictive entre les gains sur ces mesures et les taux de récidives, la majorité des changements positifs n'étaient pas significativement associés à des réductions de

taux de récidive sexuel, violent et général, après avoir contrôlé pour le risque prétraitement et statique. Due aux résultats non-significatives, la capacité des différentes mesures à identifier des changements et prédire la récidive n'a pas pu être comparé. Cette étude est la deuxième étude examinant des changements pré à posttraitement sur la Stable-2007 et la première à examiner ses changements sur les trois dimensions de la Stable-2007. Même si le programme de traitement évalué semble être capable de produire des changements positifs dans certains facteurs de risque dynamiques, la relation entre ces gains et leurs capacités de prédire des taux plus bas de récidives reste contradictoire et incertaine. Plus d'études examinant les gains sur des facteurs risques dynamiques spécifiques en utilisant différentes mesures sont nécessaires avant de pouvoir vraiment établir les facteurs dynamiques les plus susceptibles à changer et prédire des taux de récidive plus bas.

Mots clés

Agresseurs sexuels, changements suite au traitement, facteurs de risque dynamique, récidive, échelle d'évaluation du risque dynamique de récidive, Stable-2007, mesures autorapportées, évaluation phallométrique.

Abstract

Evaluating treatment programs specialized in treating sexual offenders and reducing recidivism, especially sexual recidivism, is of great importance to the general public and policy makers because of the many physical and psychological consequences these crimes have on the victims and their families. The present study evaluated the changes that occurred in moderate to high risk sexual offenders who followed a specialized community treatment program. In order to accomplish this, gains during treatment and their ability to predict lower recidivism rates was examined using three different methods of measurement: risk assessment, self-reports, and phallometric testing. Change scores were derived from the Stable-2007 and its three dimensions (i.e., antisociality, sexual deviance, and hypersexuality); the Molest and Rape Scale; the Sexual Interest Cardsort Questionnaire; and phallometric testing. Measures were administered pre- and posttreatment in a sample of 105 adult male sexual offenders with adult and child victims. Recidivism data were obtained from official criminal records. The average follow-up period for participants was of 12 years postrelease. Findings were indicative of significant positive changes in dynamic risk factors as measured by the Stable-2007 and its three dimensions; in PSIs as measured by the Sexual Interest Cardsort Questionnaire and phallometric testing; but not in cognitive distortions as measured by the Molest and Rape Scale. The majority of change scores were non significantly associated with reductions in sexual, violent, or general recidivism after controlling for pretreatment and static risk. Comparing the different methods of measurement in their ability to capture changes and predict recidivism was unable to be done due to the lack of significant results. The following study is only the second to examine treatment change on the Stable-2007 and its relationship to recidivism, and the first examining treatment change in its three different dimensions. Although the program seemed to be effective in reducing certain

dynamic risk factors, the relationships between treatment change and lower recidivism rates, especially sexual recidivism remains unclear. More studies examining treatment change on specific dynamic risk factors using different measures are needed to establish more comprehensive conclusions about which dynamic risk factors are more susceptible to change and most effective if reducing recidivism rates.

Keywords

Sexual Offenders, treatment change, dynamic risk factors, recidivism, dynamic risk assessment measures, Stable-2007, self-report measures, phallometric testing.

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Abbreviation list

ATSA	Association for the Treatment of Sexual Abusers (ATSA)
CBT	Cognitive Behavioral Therapy
CERUM	Centre d'Étude et de Recherche de l'Université de Montréal
CI	Confidence Interval
CODC	Collaborative Outcome Data Committee
DRFs	Dynamic Risk Factors
PSIs	Paraphilic Sexual Interests
RNR	Risk, Need, Responsivity Principles
SRMs	Self-Report Measures
VRS-SO	Violence Risk Scale-Sexual Offender Version

Dedicated to my late father…

Who taught me the value of perseverance, authenticity, and hard work

Papa, ma thèse est complétée…

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INTRODUCTION

Sexual crimes represent an area of criminality that has been highly concerning, albeit confusing, to the general public for several decades (Hanson & Morton-Bourgon, 2005). Although sexual recidivism rates are low compared to other crimes, there remains 10% to 15% of sexual offenders who will recidivate sexually in the five years following their release from incarceration (Hanson & Bussière, 1998; Harris & Hanson, 2004). The attention sexual offenders receive is not surprising when one takes into account that the majority of sexual offenders will be released from prison, and the long-term physical and psychological consequences sexual offences have on the victims and their families (Dworkin et al., 2017; Haskell & Randall, 2019; Irish et al., 2010). For these reasons, sexual recidivism is of high concern to the media, general public, and policy makers who share different opinions on how this population should be prosecuted and/or treated. The following study focuses specifically on the treatment of sexual offenders.

In the past two decades, research has been dedicated to the development of appropriate specialized treatment programs aimed at reducing sexual recidivism and evaluating their effectiveness. Evaluating the effectiveness of such programs has posed a challenge due to the diversity within the treatment programs being offered, the diversity of available measures being used to measure the changes occurring, and the difficulty in creating randomized controlled studies (Hanson & Bussière, 1998; Lösel & Schmucker, 2005; Schmucker & Lösel, 2015). Despite these difficulties, treatment programs based on the risk, need, responsivity principles (RNR) and cognitive behavioral therapy (CBT) have repeatedly been associated with lower recidivism rates in this population (Andrews et al., 2006; Olver & Wong, 2013; McGrath et al., 2010).

Due to the difficulties mentioned above, rare are the studies able to ascertain true treatment effectiveness. When treatment effectiveness is being discussed it is mainly referring to studies comparing recidivism rates of sexual offenders having undergone specialized treatment to those who have not; or to those examining the association between changes in treatment targets by using self-report, psychophysiological, and risk assessment measures (Beggs & Grace, 2011; Crolley et al., 1998: Keeling et al., 2006; Wakeling et al., 2013). In recent years, focus has shifted to evaluating changes occurring during treatment and their relation to recidivism using dynamic risk assessment measures with the expectation that they will be related to lower recidivism rates (Beggs, 2010; Beggs & Grace, 2011). However, this method of examining treatment effectiveness is still in its early stages of development. As such, only a select few studies in the field of sexual offending have examined changes occurring during treatment in this manner (Beggs & Grace, 2011; Goodman-Delahunty & O'Brien, 2012; Olver et al., 2007, 2014, 2020; Sowden & Olver, 2017; Wakeling et al., 2013).

Research has attempted to inform program development of treatments for sexual offenders by establishing the most important risk factors related to sexual recidivism. As such, the main recurring treatment targets are centered around sexual deviance, and pro-offending attitudes, socio affective functioning, and antisocial orientation (Beech et al., 2002; Hanson & Harris, 2000; Hanson & Morton-Bourgon, 2005; Helmus et al., 2013; Hudson et al., 2002; Thornton, 2002). While the inclusion of these risk factors as treatment targets is based on empirical evidence, little is known about the risk factors that are most susceptible to change following treatment and which changes contribute the most to lower recidivism rates in this population. This represents the first and second gap in the literature that will be of focus in this study.

In addition to treatment targets and treatment change related challenges, the different measures used to examine treatment change adds to the complexity of establishing treatment effectiveness. Risk assessment measures are slowly becoming the more popular choice amongst researchers and clinicians because they combine the most important risk factors related to recidivism in sexual offenders and are empirically validated. In fact, there is a growing body of research focused on examining their validity and reliability (Beggs & Grace, 2011; Olver et al., 2007, 2009, 2014, 2020; Sowden & Olver, 2017). However, research on the ability of these different measures to assess treatment change and the associated decreases in recidivism rates is still in its infancy, representing the third gap in the literature addressed in this study.

The present study aims to evaluate changes occurring during the participation of a specialized community treatment program for sexual offenders developed based on the RNR principles in three ways. First, it aims to examine whether there are improvements in specific treatment targets following the completion of the treatment program. Second, it aims to evaluate whether positive changes in these treatment targets are related to lower recidivism rates, especially with regards to sexual crimes. Third, given the previously outlined issues with measuring changes occurring during treatment, the final aim is to determine if self-report measures (SRMs) and psychophysiological measures are better or worse than risk assessment measures in assessing and capturing treatment change, and their relationship to recidivism. In order to accomplish these goals, a first set of analyses will examine pre- to- posttreatment differences on the different measures used to assess changes in treatment targets. A second set of analyses will examine whether changes on these measures is predicating lower sexual, violent and general recidivism rates. A third set will examine whether these changes predict lower

recidivism rates after controlling for baseline risk. Finally, the results obtained from the analyses mentioned on the different methods of measurement will be compared.

The first chapter of this thesis goes over the theoretical context surrounding the current knowledge about treatment effectiveness in sexual offenders. Specifically, a brief treatment history of sexual offenders is provided, followed by a description of the current most validated approach to treatment, the use of the RNR principles. A particular focus is given to the *need* principle due to the specific aims of this study. As such, the literature pertaining to certain treatment targets (i.e., needs) and their ability to improve with treatment is also discussed in this section. Next, a description of the literature pertaining to treatment effectiveness, its relationship to recidivism, and its ability to predict lower rates of recidivism is presented by organizing findings per type of measure (i.e., SRMs, risk assessments). Finally, the first chapter concludes with an overview of the limitations that arise in the current knowledge on treatment effectiveness in this population.

The second chapter summarizes the development of the treatment program being evaluated in this study. Each module that was included is described as well as the rationale for its inclusion. The third chapter summarizes the conclusions reached in the first chapter, and puts them into context with the current study. Following this, the current study is outlined as well as the accompanying objectives and hypotheses. The fourth chapter provides the methodological blueprint for the current study including procedures, measures, sample description, and planned analyses to address each hypothesis. The fifth chapter describes the results obtained from the analyses. The sixth chapter offers a general discussion of the findings. Specifically, it provides a summary and interpretation of the results as they pertain to the main objectives and hypotheses as well as the clinical and scientific implications for the field. In the final section of this chapter,

the limitations of the current study and recommendations for future research are also presented. The final chapter concludes this study by providing a brief summary of the findings and their implications.

CHAPTER 1

THEORETICAL CONTEXT

1.1 Brief Treatment History

The treatment of sexual offenders begins with the treatment of different types paraphilic sexual interests (PSIs) during the 20th century (Laws & Marshall, 2003). At this time, treatment in this field was largely based on the psychodynamic approach (Laws & Marshall, 2003). In the mid-20th century, PSIs were being conceptualized as the consequence of learnt behavior (Ford & Beach, 1952). The theory that basic learning processes were responsible for the appearance of these sexual interests was the foundation upon which behavioral treatments were created (Laws & Marshall, 2003). If PSIs were learnt behaviors, they could be unlearnt and replaced with more acceptable and appropriate ones (Ford & Beach, 1952).

The majority of behavioral based interventions for PSIs were centered around different types of aversion therapies (Thorpe et al., 1963), which are based on the principles of punishment within the theoretical frameworks of classical and operant conditioning (Laws & Marshall, 2003). These treatments involve the pairing of an aversive stimuli, such as ammonia (i.e., a strong and poignant aversive odor) or apomorphine (i.e., a nausea inducing medication) to unwanted images or thoughts related to the PSIs being treated (Colson, 1972; Freund, 1960; James, 1962; McConaghy, 1990; Proulx, 1993). The purpose of this pairing is to create a negative association that will prevent individuals from acting on their PSIs (Laws & Marshall, 2003).

Aversion therapies have been adapted and used in many different ways in order to treat PSIs. For example, aversion therapies that do not rely on external substances have also been used. Electrical aversive therapy, aversive behavior rehearsal or shame aversive therapy, and satiation therapy are among such therapies. Electrical aversive therapy involves a mild electric shock to the individuals arm or leg (Marshall, 1973; Quinsey et al., 1976; Rooth & Marks, 1974).

This particular therapy was popular in the 1970s (Marshall, 1973; Quinsey et al., 1976; Rooth & Marks, 1974) but has not been readily used since the 1990s (Quinsey & Earls, 1990). Aversive behavior rehearsal or shame therapy involves the individual engaging in paraphilic behavior in front of a familiar or unfamiliar audience with the purpose of inducing shame (Serber, 1970; Wickramasekera, 1976). Finally, satiation therapy involves the individual masturbating to a paraphilic sexual fantasy during the refractory period, with the aim of creating a negative association between the fantasy and the unpleasant feeling of masturbating following ejaculation (Marshall, 1979). Studies were able to show some degree of effectiveness for this technique although findings were based on very small sample sizes without comparison groups, not permitting generalizability (Hunter & Goodwin, 1992; Johnston et al., 1992; Laws & Marshall, 1991).

Although there was some evidence of aversion therapy's effectiveness in reducing PSIs there was little evidence to demonstrate that aversive therapies led to long term changes in this area (Laws & Marshall, 2001; Quinsy & Earls, 1990). In the 1970s, clinicians' focus shifted to reinforcing appropriate sexual interests in adults instead of eliminating paraphilic ones (Kelly, 1982; Marshall & Laws, 2003). Behavioral treatments were adapted to reflect this theoretical shift, and treatments such as orgasmic reconditioning were created. In orgasmic reconditioning the individual masturbates until reaching orgasm while using appropriate sexual fantasies, followed by the satiation procedure described above in satiation therapy (Marquis, 1970). Many variations of orgasmic reconditioning were developed during this period (Davison, 1968; Thorbe et al., 1963; VanDeventer & Laws, 1978). The empirical evidence available during this period came from case studies and a few controlled studies but no studies using comparison groups (Laws & Marshall, 1991). Although promising, the types of studies available greatly limited the

extent to which effectiveness could be established (Laws & Marshall, 1991). Cognitive psychology also had its influence on the different forms of treatments being developed for PSIs during the 1970s. Following principles similar to those used in the development of aversion therapy, covert sensitization replaced the use of external aversive stimuli with "imaginative" aversive stimuli (Cautela, 1967). For example, an individual who struggles with alcohol abuse would imagine drinking followed by a detailed scene where he vomits in public. He would be asked to imagine this until he would feel nauseous. After several repetitions the individual would be asked to imagine these unpleasant events whenever he feels the urge to drink alcohol (Cautela, 1967). This technique was eventually adapted for deviant sexual behavior (Barlow et al., 1969; Cautela, 1967; Maletzky, 1973, 1991).

The 1980s are considered a significant period for the development of treatment programs for sexual offenders for three reasons. First, it was during this time period that the relapse prevention model used for addiction was adapted to be used by treatment programs for sexual offenders (Pithers et al., 1983). Relapse prevention provided the theoretical framework needed to appropriately address the specific high risk situations and temptations sexual offenders would be confronted with once they found themselves reintegrated into society (Pithers et al., 1983). This model had the potential of providing clinicians with a more direct way of reducing recidivism rates in sexual offenders (Marshall & Laws, 2003). In 1995, cognitive behavioral therapy (CBT) paired with the relapse prevention model was the primary approach used by professionals (Freeman-Longo et al., 1995).

Second, research on other potential treatment targets, risk factors associated with recidivism, that could be included in treatment programs for sexual offenders in addition to PSIs, began to expand and gain momentum (Marshall & Laws, 2003). Treatment targets such as sexual

education, empathy, social skills, self-esteem, substances abuse, anger management were integrated into treatment for sexual offenders (Becker et al., 1988; Jenkins-Hall et al.,1989; Marshall et al., 1983). Third, the use of treatment approaches mentioned above gained popularity in the treatment of sexual offenders specifically (Marshall & Laws, 2003).

One of the first reviews examining treatment effectiveness was also published during this period (Furby et al.,1989). Studies examining recidivism rates in treated and untreated sexual offenders were reviewed, and overall it was concluded that there was no evidence of treatment effectiveness in reducing sexual recidivism. In addition, methodological limitations were found in all 42 studies reviewed, underlining the importance of constructing more methodologically sound studies (Furby et al., 1989).

1.2 Risk, Need, Responsivity Principles (RNR)

The following decade, 1990s, would mark an important expansion in the research on sexual offenders. Not only did treatment programs continue to be developed and updated based on the recent literature available, but the importance of risk prediction and classification was the main focus of research in this field. A multitude of treatment programs were created for sexual offenders, and research investigating best treatment practices continued. It was during this period that treatment based on the risk, need, responsivity (RNR) principles gained popularity (Bonta & Andrews, 2017; Olver & Wong, 2013). The RNR principles were proposed as essential ingredients for effective recidivism reduction programs and policies as well as a way to improve policies and programs that were not as effective (Andrews, Bonta, Gendreau, et al., 1990; Andrews, Bonta, & Hoge, 1990). The *risk* principle refers to matching treatment intensity to the offender's level of recidivism risk (Bonta & Andrews, 2017). Identifying an individual offender's level of risk involves assessing for the presence of different risk factors, which are

attributes and circumstances that are predictive of recidivism (Andrews, Bonta, Gendreau, et al., 1990; Andrews, Bonta, & Hoge, 1990; Bonta & Andrews, 2017*;* Olver & Wong 2011). The identified risk factors are used to classify individuals according to their level of risk (i.e., the likelihood of reoffending). The ability to classify these individuals based on risk level permits the appropriate attribution of services, with higher risk individuals receiving higher levels of services or more specialized services. The *need* principle refers to the criminogenic needs, or dynamic risk factors (DRFs), that should be prioritized as therapeutic targets that have been empirically associated with sexual recidivism (Andrews, Bonta, Gendreau, et al., 1990; Andrews, Bonta, & Hoge, 1990; Bonta & Andrews, 2017). Finally, the *responsivity* principle refers to the use of interventions and techniques that have been demonstrated to be the most effective with the population that is being treated (Bonta & Andrews 2017). These techniques should take into account individual characteristics that could enhance an individuals' capacity to benefit from treatment (e.g., personality traits, cognitive capacity, motivation; Bonta & Andrews 2017). The responsivity principle differs from the need principle in that its focus is on creating circumstances and addressing the specific attributes of a particular individual or group to create the proper foundations for treatment success (Andrews, Bonta, Gendreau, et al., 1990; Andrews, Bonta, & Hoge, 1990; Bonta & Andrews, 2017). These principles are based on four assumptions. First, risk can be evaluated accurately using risk assessment measures. Second, risk assessment measures can be used to match the intensity of the treatment programs to the individual's reoffending risk level. Third, criminogenic needs can be modified with treatment and reduce recidivism rates. Fourth, lower recidivism risk levels due to treatment result in lower recidivism rates (Bonta & Andrews, 2017; Olver & Wong, 2011).

Treatments based on these three principles have shown their effectiveness in reducing recidivism in the general forensic population, reducing reoffending up to 35% (Andrews & Bonta, 2006; Bonta & Andrews, 2017; Dowden & Andrews, 2000). There is now much research showing the effectiveness of RNR principles in reducing sexual recidivism when they are applied to treatment for sexual offenders (Gannon et al., 2019; Hanson et al., 2009). In fact, findings from a meta-analysis examining the effectiveness of the RNR principles in such treatment programs demonstrated that treatment programs adhering to all three RNR principles had the lowest sexual and general recidivism rates (Hanson et al., 2009).

1.3 Need Principle of RNR

The current thesis attempts to examine changes occurring in targeted criminogenic needs following a specialized treatment program for sexual offenders; therefore this section focuses entirely on the *need* principle of RNR and the empirical research on the needs that have been identified as important treatment targets. The *need* principle refers to the criminogenic needs, DRFs, that should be important therapeutic targets and that have been empirically associated with sexual recidivism (Andrews, Bonta, Gendreau et al., 1990; Andrews, Bonta, & Hoge, 1990; Bonta & Andrews, 2017; Hanson & Harris, 2001). Criminogenic needs are theoretically and empirically susceptible to change, have the potential to change through treatment, and that positive changes can reduce recidivism rates and risk (Bonta & Andrews, 2017). Research on sexual offender treatment has extensively investigated the DRFs most associated with sexual recidivism that meet this criteria in order to create treatment targets effective in reducing sexual recidivism.

Meta-analytic research over the past decades has identified the most relevant DRFs related to sexual offenders. Many different ways of categorizing them have been put forth by

different authors (e.g., Hanson & Bussière, 1998; Hanson & Harris, 2001; Hanson & Morton-Bourgon, 2005; Thornton, 2002). To facilitate the descriptive overview of the vast scientific literature on DRFs for this study, DRFs were separated into four distinct categories similar to those proposed by Thornton, (2002): sexual deviance, pro-offending sexual attitudes, socio affective functioning, and antisocial orientation. In addition, focus was put on DRFs that have been strongly related to sexual recidivism in the literature as opposed to those factors that are somewhat related (Mann et al., 2010).

1.3.1. Sexual Deviance

Sexual deviance has been identified as one of the strongest DRFs for sexual recidivism (Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2005; Hanson & Harris, 2000; Olver et al., 2007; McPhail et al., 2019). Sexual deviancy can be defined as a tendency to experience sexual arousal towards a deviant stimulus. Sexual preferences for children are usually included in this category and usually refer to children from 0 to 12 years of age because of the immature development of their bodies (e.g., lack of pubic hair, immature breast and genital development; Mann et al., 2010). Interest for sexualized violence is another factor related to sexual recidivism and it refers to a sexual preference for non-consenting sex and/or an interest for sadism (Mann et al., 2010). Finally, having multiple paraphilias is another strong risk factors, that is having two or more deviant sexual interests, such as exhibitionism or voyeurism (Mann et al., 2010).

Different approaches have been used to assess sexual deviance and thus PSIs, including self-reports, offense history, phallometric testing, and structured clinical ratings such as the VRS-SO and the Stable-2007 (Hanson & Bussière, 1998; Zappala et al., 2016). However, phallometric testing is generally considered the best method to evaluate PSIs in sexual offenders (Laws, 2003; Kalmus & Beech, 2005; McGrath et al., 2010). Phallometric testing is

psychophysiological measure that assesses changes in penile circumference while an individual is exposed to different stimuli depicting a variety of sexual activities (McPhail et al., 2019). A meta-analytic review assessed the validity of the different procedures used with regard to phallometric testing (McPhail et al, 2019). The authors compared 37 samples using a variety of phallometric procedures to examine PSI's in sexual offenders against children, and 16 samples examining the relationship between phallometric testing and sexual offending. Overall, many phallometric procedures were valid indicators of PSI related to children, for example slide (*ds* ranged from 0.35 - 0.37) or audio-plus-slide stimuli (*ds* ranged from 0.17- 0.60) and z-score based stimuli (*ds* ranged from -0.03 – 1.00). They also predicted sexual reoffending (*ds* ranged from 0.35 - 0.37; McPhail et al., 2019).

Another DRF in this category, although not as strongly related to sexual recidivism, is sexual preoccupation. Sexual preoccupation refers to the excessive role sex takes in the individual's life (Hanson & Bussière, 1998; Hanson & Morton-Bourgon 2005; Mann et al., 2010). These individuals often prioritise sex over other needs in a way that disrupts other areas of their lives and believe they have stronger sexual needs than others (Hanson and Harris, 1998), for example higher frequency of pornography consumption or masturbation use (Hanson & Harris, 2000). It is also often used as a coping mechanism to self-regulate negative emotions (Looman, 1995; McKibben et al., 1994; Proulx et al., 1996).

1.3.2 Pro-Offending Sexual Attitudes

Pro-offending sexual attitudes have often been included under the broader term of cognitive distortions, which have been identified as a DRF for sexual offending (Hanson & Harris, 2000; Helmus et al., 2013; Ward & Beech, 2006). Much research in the field has identified multiple DRFs that have been included under this term, some of which are related to

sexual recidivism others not. The contradicting findings related to cognitive distortions have often been attributed to the broad use of the term, in that it has been used to describe attitudes, beliefs, specific thoughts, justifications and excuses (Gannon, 2006; Helmus et al., 2013; Maruna & Mann, 2006; O'Ciardha & Gannon, 2011). Consequently, the use of pro-offending attitudes (i.e., beliefs related to the acceptability of sexually offending) is an effort to better operationalize and differentiate between those DRFs related to cognitive distortions that are and are not associated with sexual recidivism (Mann et al., 2007; Maruna & Mann, 2006). For example, denial, justifications, and excuses have been theorized to be healthy forms of coping (Marshall et al., 2011) and therefore different from pro-offending attitudes (Hanson & Morton-Bourgon, 2005; Maruna & Mann, 2006). They have in fact been repeatedly shown to not be related to sexual recidivism (Helmus et al., 2013; Maruna & Mann, 2006).

Although more research is needed to better understand the role pro-offending attitudes play in sexual offending, research has shown that possessing attitudes indicative of tolerance towards sexual offending is related to sexual offending (Hanson & Morton-Bourgon, 2005; Helmus et al., 2013). In the meta-analytic review by Hanson and Morton-Bourgon (2005) using 82 recidivism studies, important predictors of sexual recidivism were identified based on the current literature. Among the predictors examined, were those of attitudes tolerant of sexual crimes such as attitudes tolerating sexual relationships between adults and children and those indicative of a lack of sexual knowledge. The category was significantly related to sexual recidivism as a whole, but with small effects (d = 0.16; Hanson & Morton-Bourgon, 2005). However, there was significant variability within the category, for example, attitudes pertaining to child molester attitudes or low sex knowledge were non significantly related to recidivism, but those pertaining to emotional identification with children were (Hanson & Morton-Bourgon,

2005). Helmus et al. (2013) conducted a meta-analytic review using 46 samples, focusing specifically on the association between attitudes supporting sexual offending (e.g., pro rape and child offending attitudes, sexual entitlement) and sexual recidivism. Findings supported a small but stable predictive relationship between all pro-offending attitudes and sexual recidivism (average Cohen's *d* of .22).

1.3.3 Socioaffective Functioning

Socioaffective functioning contains all DRFs related to an individual's ability to interact with others and manage emotions arising from these interactions (Thornton, 2002). Thornton (2002) identified four factors that he included in this category of risk factors: inadequacy, aggressive thinking, lack of emotional intimacy, and emotional identification with children. Feelings of inadequacy refer to elements such as loneliness, low self-esteem, and poor locus of control (Thornton, 2002). Aggressive thinking refers to negative based emotions such as anger (Thornton, 2002). Lack of emotional intimacy refers to the individual's inability to keep healthy, long term, and committed relationships (Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2005; Thornton, 2002). This includes sexual offenders who desire intimate relationships but are unable to have them and those who don't desire adult intimate relationships (Mann et al., 2010). Finally, emotional identification with children refers to an exaggerated affective and cognitive connection with children that promotes sexual offending against children (McPhail et al., 2013). These individuals often find it easier to relate to children than to adults and believe that children understand them better than adults do (Hanson & Morton-Bourgon, 2005; Mann et al., 2010).

Negative social influences in a sexual offender's life are also an important DRF for sexual recidivism that can be included under this category. Negative influences pertain to individuals who are involved in or promote different types of criminal behaviors. For example, it

is widely known that being in contact with other individuals who have committed crimes greatly increases the chances that an offender will reoffend (Bonta & Andrews 2017; Hanson & Harris, 2001; Mann et al., 2010). Negative social influences can also include non-offending individuals in the sexual offender's life. For example, if they are surrounded by people that believe that they will not reoffend and therefore don't need treatment they can be encouraged to not follow treatment (Hanson & Harris, 2001).

1.3.4 Antisocial Orientation

DRFs included in this category were first identified as predictors of general and violent recidivism in general offenders (Bonta et al., 1998; Gendreau et al., 1996; Hanson & Bussière, 1998), and later as predictors of sexual recidivism (Hanson & Morton-Bourgon, 2005; Hanson & Bussière, 1998; Hanson & Harris, 2000). Multiple DRFs associated with sexual recidivism have been included in this category, such as substance abuse, hostility, lifestyle instability, and psychopathy and antisocial personality traits (Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2005). Individuals considered to possess characteristics falling in this category have also been known to have poor problem-solving skills, have difficulty self-regulating, and be impulsive (Bonta & Andrews, 2017). An individual with poor problem-solving skills has difficulties findings effective solutions to everyday problems. Sexual offenders often avoid problems or pick ineffective solutions to solve them (Mann et al., 2010). An individual who has difficulty self-regulating will be less efficient in inhibiting impulsive decisions. Lifestyle impulsiveness is often translated into low self-control, difficulty in maintaining stable employment or housing, irresponsible decision making, and the inability to establish realistic goals and attain them (Mann et al., 2010). Many of these DRFs are related to poor cooperation to supervision and rule breaking (Mann et al., 2010).

Overall, multiple DRFs have gained popularity as treatment targets such as controlling sexual arousal, improving emotional regulation, increasing family support networks, improving intimacy and relationship skills, increasing the sense of responsibility, decreasing distorted attitudes, improving problem solving skills, learning how to self-monitor, increasing social skills, and teaching victim empathy (McGrath et al., 2010). The DRFs mentioned above are amongst the most researched and are almost always included as treatment targets in specialized treatment programs for sexual offenders because of their empirical association to sexual recidivism. Importantly, they have also all demonstrated a potential for change when addressed in treatment programs.

1.4 Treatment Effectiveness in Reducing Recidivism

1.4.1 Individual Studies Examining Treatment Effectiveness

Multiple studies have examined treatment effectiveness among sexual offenders by comparing recidivism rates once released. An earlier review (Furby et al., 1989) compared sexual recidivism rates in treated and untreated sexual offenders in 42 studies. In this review recidivism was defined as a sexual re-offense (i.e., conviction). Treated sexual offenders had sexual recidivism rates above 12%, whereas untreated sexual offenders had rates under 12%. One of the main conclusions reached by the authors was that there was little evidence of treatment effectiveness. The authors postulated that this was due to the large variability between studies in multiple methodological areas that made comparisons challenging (i.e., sample size, type of sexual offense, recidivism data, treatment programs etc.). Later reviews on treatment effectiveness underlined similar methodological issues that were preventing the scientific community from drawing clear conclusions about treatment effectiveness (Harris et al., 1998; Polizzi et al., 1999). The majority of studies following these reviews attempted to address the

many methodological issues, in order to facilitate the comparison between studies and derive more accurate conclusions.

Quinsey et al. (1998) evaluated one of the oldest ran treatment programs for sexual offenders by the Canadian federal correctional system (i.e., Regional Treatment Centre Sex Offender Treatment Program*)* over a three to four-year follow-up period. The program included several modules covering a multitude of DRFs, such as sexual education, anger management, social skills training, and PSIs. Different groups were compared on recidivism rates once released from incarceration, including but not limited to those who completed treatment, those who after assessment were deemed not to require it, and those who refused treatment (Quinsey et al., 1998). Out of the numerous findings, one of the most notable was that treated sexual offenders were rearrested (15.5% vs. 4.9%) and convicted (11.7% vs. 3.3%) more frequently for sexual offenses than those who were deemed not to require treatment. In addition, those who refused treatment had higher rearrests for sexual crimes (32.6%), and reconviction rates (23.3%) than the treated and those deemed not to require treatment. Furthermore, treatment gains on clinical assessments were associated with higher recidivism rates once static risk factors were controlled for (Quinsey et al., 1998). These results changed significantly when the same sample of treated sexual offenders was compared to a matched sample of untreated individuals in another study (i.e., age at and date of index offense, and criminal history; Nicholaichuk et al., 2000). With a follow-up period of approximately six years, the treated group had sexual recidivism rates over two times lower than the untreated matched group (14.5% vs. 33.2%; Nicholaichuk et al., 2000). In addition, a greater number of individuals in the treated group remained out of prison than the untreated group (48% vs. 28.3%; Nicholaichuk et al., 2000). The first of the two studies was one of the first to examine the relationship between treatment and

recidivism rates but the findings were not conclusive (Quinsey et al., 1998). The second demonstrated the importance of having a matched comparison group when trying to establish treatment effectiveness and its possible effect on recidivism (Nicholaichuk et al., 2000).

McGrath et al. (1998) examined the effectiveness of specialized treatment for sexual offenders in reducing sexual recidivism using a five-year follow-up period. In this case, the specialized treatment program being evaluated was an outpatient CBT and relapse prevention based program for convicted sexual offenders in the United States (n = 122). The program included modules addressing responsibility for one's actions, cognitive distortions, victim empathy, social skills, relapse prevention skills, and PSIs. Individuals who underwent this program were compared to two groups: individuals who followed an unspecialized treatment program and those who did not participate in any treatment. The non-specialized treatment included mostly peer-group therapy and individual therapy using multiple different approaches, and did not include any treatment PSIs. Results showed significant reductions in sexual recidivism rates for those who participated in the specialized treatment program, compared to the two other groups (1.4% compared to 5% for the non-specialized group and 2% for non-treated group). Results were different for nonsexual-violent recidivism, where the non-treated group recidivated more than the specialized and non-specialized treatment groups (15.7% vs 1.4% and 3.1% respectively; McGrath et al., 1998). The same was found when comparing groups on nonviolent recidivism. It can be concluded from this study that specialized and non-specialized treatments can potentially play a role in the reduction of violent and general recidivism, but that specialized treatment programs have a greater effect in reducing sexual recidivism. A limitation of this study was the absence of the use of specific treatment variables that could have affected treatment effectiveness. In addition, low to moderate risk sexual offenders were included in this

study, but the approach used to assess risk (Vermont Assessment of Sex-offender Risk; McGrath & Hoke, 1995) was not validated and during this period validated standardized risk assessment measures were not yet available.

Ruddijd and Timmerman (2000) compared recidivism rates, using a varied follow-up period that went up to eight years, in first time sexual offenders who received treatment in an outpatient setting to a group that did not receive any treatment (n = 112). The treatment group followed the Foundation for Ambulatory Prevention Projects program in the Netherlands which included similar treatment targets to the programs evaluated in Quinsey's et al. (1998) and McGrath's et al. (1998) studies. In order to form an equivalent comparison group, individuals were matched on the same characteristics as those in Nicholaichuk et al. (2000) study as well as on victim information. Results did not indicate significant differences in general recidivism between both groups (5% in the treatment group vs. 2% in the comparison group; Ruddijd & Timmerman, 2000). Although, the small sample size and the very low recidivism rates were limitations of this study that could explain the higher levels of sexual recidivism in the treated group, the type of sexual offenders used could also potentially explain these findings. Most studies use a variety of sexual offenders, mostly moderate to high risk (Schmucker & Losel, 2015), whereas this study exclusively included first time offenders in their program, which would reduce their recidivism risk level (Hanson & Thornton, 2000). Being a first-time offender could be an important factor accounting for the results.

Hanson et al. (2004) evaluated an outpatient treatment program (i.e., Commmunity Sex Offender Program) designed for sexual offenders. The program was provided by psychologists in different regions of the United States. Though the orientations and approaches used to treat the sexual offenders varied, they all had to adhere to a specific list of criteria including but not

limited to: addressing criminogenic needs, adapting to the learning styles of the participants, and using methods proven to be effective with sexual offenders. This study on treatment effectiveness was an improvement on past studies for three main reasons. First, the sample size available was much larger (n = 403) compared to some previous studies (e.g., n = 296 and 56; Nicholaichuk et al., 2000; Ruddijd & Timmerman, 2000). Second, a longer follow-up period of 12 years was used, compared to the average of four to five years in other past studies (e.g., Quinsey et al., 1998; McGrath et al., 1998). Third, the data used permitted to control for several static risk factors from the Static-99 (Hanson & Thornton, 2000), a popular risk assessment measure. Results were not indicative of significant differences between treated and untreated sexual offenders for any of the three types of recidivism investigated, that is sexual (21.1% vs. 21.8%), nonsexual violent (42.9% vs. 44.5%), and general recidivism (56.6% vs. 60.4%). These findings remained consistent even after controlling for follow-up time and static risk (Hanson et al., 2004). Though the professionals were required to adhere to a specific list of criteria, an important limitation of this study was the varied orientations and approaches used to treat the sexual offenders. Consequently, another limitation was the inability of this study to examine the specific effects of the different interventions used. It is more than likely that results would have varied depending on the professionals' orientation and approach. That said, it was one of the first studies to control for follow-up time and static risk.

Zgoba and Simon (2005) compared recidivism rates over an eight-year follow-up period between sexual offenders who had been incarcerated in a sex-offender-specific prison and those who had received specialized treatment based on CBT and relapse prevention principles (i.e., Adult Diagnostic Treatment Center; n = 495*)* to those who had been incarcerated in a non-specialized prison and who did not receive treatment (n = 223). Sexual offenders who had

undergone treatment had lower nonsexual recidivism rates than the comparison group (12.3% vs. 26.8%), but the same was not found for sexual recidivism (9% vs. 8.2%).

Duwe and Goldman (2009) compared a large sample of sexual offenders (n = 2 040) who had participated in a CBT-based inpatient treatment program for sexual offenders that followed the RNR principles (i.e., Transitional Sex Offender Treatment Program). Different from other treatments, this program also included a component which focused on substance dependency. They examined treatment effectiveness by examining sexual, violent, and general recidivism after a nine-year follow-up period and compared these rates to a matched controlled group (n = 1 020) using a propensity score matching technique that uses using multiple covariates. This matching technique created an equivalent comparison group of 1,020 sexual offenders. Those who participated in treatment had lower recidivism rates for sexual (14.2% vs. 19.5%), violent (30.8%% vs. 34.1%), and general recidivism (56.6% vs. 58.1%; Duwe & Goldman, 2009). Other than examining treatment effectiveness, the authors other aim was to achieve this by addressing reoccurring limitations mentioned in prior individual studies on treatment effectiveness. A larger sample size and longer follow-up period were used, and a score matching technique was used to better match the comparison group.

Abracen et al. (2011) examined a sample of 64 sexual offenders who had been treated in an inpatient high-intensity treatment program (n = 64) for high risk sexual offenders by comparing them to a sample of untreated sexual offenders (n = 55) matched on age, index offense, type of offense, and total score on the Hare Psychopathy Checklist-Revised. The treatment program was a CBT and relapse prevention based program (i.e., Regional Treatment Centre [Ontario] Sex Offender Treatment Programme). Both groups had relatively low sexual recidivism rates and were non significantly different after a mean follow-up period of nine years

for the treated group and 11.2 years for comparison group (11.1% treated vs. 9.1% comparison group; Abracen et al., 2011).

Another more recent study also compared a sample of sexual offenders who had followed a CBT-based treatment program (i.e., Core Sex Offender Treatment Programme; Mews et al, 2017) to a matched control group of sexual offenders in order to evaluate its effectiveness on reoffending rates. This study had one of the largest sample sizes for an individual study (n = 2,562 for treatment group vs. n = 13,219 for the comparison group). Sexual and nonsexual recidivism rates were compared using an average follow-up period of eight years. Findings were indicative of a small but significant effect with the treatment group having higher sexual recidivism rates than the comparison group (10% vs. 8%). No significant differences were found in recidivism rates for nonsexual (24% vs. 23.7%), nonsexual violent (3.6% vs. 4.4%), and total recidivism (39.4% vs. 38.9%; Mews et al, 2017) between both groups.

Randomized controlled clinical trials are the golden standard for evaluating treatments in clinical groups. They are especially important when trying to establish treatment effectiveness. However, very few studies in the field of sexual offending have been able to design studies using this method. One such study compared recidivism rates after an eight-year follow-up period of sexual offenders treated in an inpatient CBT and relapse prevention based program (i.e., California's Sex Offender Treatment and Evaluation Project) to two untreated groups of sexual offenders: those who volunteered to be in the untreated comparison group and those who did not (Marques et al., 2005). This program was designed specifically to prevent relapse amongst sexual offenders and included similar modules to the studies already mentioned, such as increase sense of responsibility, control of PSIs, coping skills, identification of high risk situations. Results did not indicate significant differences in recidivism rates between the treated,

volunteered, and non-volunteered groups for sexual (22%, 20%, and 19.1% respectively) or nonsexual violent recidivism (16.2%, 11.6%, and 15% respectively). These results did not change when recidivism risk levels were controlled for or when sexual offenders were divided into those with child vs. adult victims (Marques et al., 2005).

The second randomized controlled clinical trial study involved a sample of juvenile offenders (n = 48), and examined the effectiveness of a Multisystemic Family Therapy Program by comparing recidivism rates to juvenile offenders who participated in routine community services (i.e., non-specialized services such as general CBT individual and group therapy offered through the juvenile courts; Borduin et al., 2009). Results indicated that the Multsystemic Family Therapy Program group were less likely to be rearrested for sexual (8% vs. 46%) and non-sexual crimes (29% vs. 58%; Borduin et al., 2009) than those who participated in the routine community services.

1.4.2 Meta-Analyses

The individual studies mentioned above are but a few of the many that have examined the effect of treatment on recidivism rates. The findings were mixed; some finding that treatment effectiveness was associated with lower recidivism rates (e.g., Borduin et al., 2009; Duwe & Goldman, 2009) and others finding effectiveness associated with higher recidivism rates (e.g., Abracen et al., 2001; Marques et al., 2005; Mews et al., 2017; Zgoba & Simon, 2005). In order to clarify the conflicting results obtained by these individual studies, multiple meta-analyses have been conducted comparing recidivism rates in sexual offenders having undergone treatment and various control groups. Hall (1995) conducted a meta-analysis including 12 studies examining effectiveness of treatments for sexual offenders. The meta-analysis included studies with different treatment modalities (e.g., behavioral, cognitive-behavioral, family treatment group

therapy). Recidivism rates of sexual offenders who had undergone treatment were compared to sexual offenders who had received a non-specialized treatment or no treatment at all. Overall, treatment had a significant effect on sexual recidivism rates (19% for the treatment group vs. 27% for the comparison group) with an overall small effect size (d = 0.12: Hall, 1995). However, there was great variability when treatment effect sizes were compared between individual studies (ds ranging from 0.14–1.32; Hall, 1995). Multiple explanations were put forth by the author to explain the heterogeneity found in treatment effect sizes. The first being the methodological differences between studies especially with regard to the type of comparison groups used in each study (i.e., no treatment vs. other treatment). In fact, the strongest treatment effects came from comparisons between treatment completers and dropouts. Another being the setting (inpatient vs. outpatient), and the type of treatment taking place (i.e., CBT, behavioral, hormonal).

Hanson et al. (2002) conducted a meta-analysis with the same purpose, examining treatment effects on recidivism. The meta-analysis exclusively examined 43 psychological-based treatment studies (N = 9, 454). To improve on past meta-analyses, attention was given to the different types of comparison groups being analyzed as well as the current relevance of the treatment programs. Variables were created to distinguish between different comparison groups based on the likelihood of preexisting group differences. For example, no significant group differences would be expected in random assignment, but significant group differences would be expected when comparing individuals who completed a treatment to individuals who dropped out of treatment. Another variable was created distinguishing between older and current treatment techniques (i.e., before vs. after the 1980s). Overall, sexual (12.3% vs. 16.8%) and general (27.9% vs. 39.9%) recidivism rates were lower in the treatment groups compared to the comparison groups (Hanson et al., 2002). Importantly, these effects were found in current

treatment programs but not in the older forms of treatment. There were no significant differences between treatment groups, but comparison groups that included drop outs had significantly higher recidivism rates than the other comparison groups. Finally, there was no difference between the inpatient and outpatient setting treatment programs in sexual recidivism rates (Hanson et al., 2002). This meta-analysis was larger than that by Hall (1995) study, and examined violent and general recidivism in addition to sexual recidivism. However, it held the same limitations as the Hall (1995), that is both underlined the need for studies using more rigorous methodological designs and studies able to make more specific distinctions between types of treatments and offenders.

Lösel and Schmucker (2005) conducted a meta-analysis of 69 studies comparing treated and untreated sexual offenders. The objective of this meta-analysis was to provide a clearer picture of treatment effectiveness in this field by comparing treated and untreated offenders on a multitude of different variables (80 comparisons) related to treatment, offender characteristics, and methodological characteristics, something that had not been done to this extent in past meta-analyses. Overall, results were indicative of treatment effects on sexual (11.1% vs. 17.5%), violent (6.6% vs. 11.8%), and general recidivism (22.4% vs. 32.5%). However, there was large heterogeneity between the different treatment effects and the other comparisons were used to make clearer sense of the results. Specifically, medical treatments (i.e., surgical castration and hormonal treatments) had the best results for lowering sexual, violent and general recidivism, followed by psychosocial treatments, specifically those that were CBT and behaviorally based. Another important finding, was the overall stronger effect of specialized treatment programs over other treatments. Finally, treatments conducted before the 1990s and outpatient treatments had greater effects on recidivism (Lösel & Schmucker, 2005). Differing from past meta-analyses,

the authors used the Maryland Scale of Scientific Rigor (Shermann et al., 1997) to evaluate methodological quality of the comparison groups used in individual studies. All studies that were considered uncontrolled were excluded.

Hanson et al. (2009) conducted a meta-analysis examining specifically whether treatments based on the RNR principles were as effective in reducing recidivism in sexual offenders as in the general offender population. This meta-analysis compared psychological treatment studies to untreated sexual offenders or sexual offenders who had received less intensive or non-specialized treatment. Results demonstrated that that treated sexual offenders had lower sexual (10.9% vs. 19.2%) and general (31.8% vs. 48.3%) recidivism rates compared to the comparison groups mentioned above. Furthermore, the more treatment programs adhered to the RNR principles the lower the recidivism rates were. Finally, consistent with their earlier study (Hanson et al., 2002), recent treatments had stronger treatment effects than older treatments. This was the first meta-analysis to examine the adherence to the three RNR principles and how this affected treatment effectiveness. This meta-analysis also attempted to use a more rigorous way of evaluating the methodological designs of studies in order to exclude those with poorer designs. In order to do this, the Collaborative Outcome Data Committee's study quality guidelines (CODC, 2007) were used. These guidelines include 21 items referring to different study features (e.g., sample size, attrition, outcome variables) that can either decrease or increase the level at which estimated treatment effectiveness can be said to be unbiased. After using these guidelines, 80% of the studies had to be excluded due to poor quality, and out of the studies that were included only five were considered "good quality" with the other 18 considered "weak".

A recent meta-analysis focused on the effectiveness of different types of offense-specific treatment programs and their association with sexual, violent, and general recidivism (Gannon et al., 2019). Out of the studies included, 44 pertained to sexual offender treatment programs and they were all CBT-based. Stable and significant effects were found overall for sexual recidivism (9.5% vs. 14.1%). Contrary to findings by Lösel and Schmucker (2005) and Schmucker and Lösel (2015), but consistent with those found in Hanson et al. (2002), outpatient and inpatient programs were comparable in their association to lower sexual recidivism rates.

When comparing meta-analyses to individual studies, findings from meta-analyses reach more consistent, promising conclusions with regards to treatment effectiveness in reducing recidivism rates. However, most authors in the field have reached a general consensus that the great variability between studies prevents any of the results from being conclusive (e.g. Dennis et al., 2012; Hanson et al., 2009; Schmucker & Lösel, 2015). The majority of meta-analysis have concluded that better research designs are needed, specifically randomized controlled clinical trials (Abracen et al., 2011; Gallagher et al., 1999; Hanson et al., 2002, Hanson et al., 2009; Ruddijs & Timmerman, 2000). Furthermore, the variability contained in the samples and measures being used have also been identified as contributing to the great variability found between studies (Hanson et al., 2002; Schmucker & Lösel, 2015). Hanson et al. (2009) underlined the complexity of the decision-making process in establishing which studies should be included in meta-analyses, and also underlined how the sole use of high quality studies in the field would severely limit any results that could potentially be obtained.

There has been an extensive amount of research examining treatment effectiveness in reducing sexual recidivism. However, there is little evidence that treatment change specifically is contributing to lower recidivism rates in sexual offenders undergoing treatment. There is a need

to identify what changes are occurring in DRFs targeted in these treatment programs and if these changes are contributing to the lower recidivism rates that are being observed in the litterature. Furthermore, the effects of the variability of measures being used to capture and evaluate treatment effectiveness have not been extensively investigated to date and could be a contributing factor to the variability of results being reported between studies. As stated by Schmucker and Lösel (2015), "there is clear need of more differentiated process and outcome evaluations that address the questions of what works with whom, in what contexts, under what conditions, with regard to what outcomes, and also why" (Schmucker & Lösel, 2015, p.598).

1.5 Treatment Change

When examining the overall findings from individual studies and meta-analyses examining treatment effectiveness on recidivism, there is an overall positive effect. However, these studies do not add to the literature on the specific changes occurring during treatment and which changes are contributing to lower recidivism rates. The examination of pre- to-posttreatment changes on DRFs allows for a more in debt evaluation of treatment effectiveness. Furthermore, the ability of different pre- and posttreatment measures to capture the specific treatment changes occurring is intrinsically related to evaluation of treatment effectiveness, and therefore warrants further investigation. For the purposes of this study, the results obtained from the literature examining treatment change in sexual offenders were divided into two categories: SRMs and risk assessment measures.

1.5.1 Treatment Change Using Self-Report Measures

Many studies have used SRMs to evaluate improvement in specific DRFs, but very few studies have examined the predictive value of treatment change in these methods of measurement on recidivism. Hudson et al. (2002) examined change scores on DRFs divided into

three categories (i.e., sexual attitudes and beliefs, emotional functioning, and interpersonal competency) using multiple SRMs. The sample included 237 sexual offenders against children who had completed an inpatient treatment program. Change scores on the SRMs were associated with general recidivism rates obtained after a two-year follow-up period. Findings were presented per DRFs category. Positive change scores on the SRMs measuring sexual attitudes were only significantly associated with lower recidivism rates for the questionnaire examining impersonal and sado-masochistic sexual fantasies (r = 23 and .18 respectively). Positive change scores on anger suppression (i.e., degree to which a person feels angry) and trait anger (i.e., degree to which some individual feels disposed to being angry) were the only change scores associated with lower recidivism rates in DRFs being measured in the emotional functioning category (r = .18 for both). Finally, change scores on one's discomfort level when asserting themselves, and on one's ability to identify with others empathically were the only DRFs being measured in the interpersonal category associated with lower rates of recidivism (r = .16 for both).

Beggs and Grace (2011) examined treatment change and its association to recidivism over a 12-year follow-up period. The sample included 218 sexual offenders against children who completed a CBT-based treatment program while incarcerated. The length of the treatment program was not mentioned. Beggs and Grace (2011) made the observation that the positive relationship between treatment change and lower rates of recidivism found in other studies (i.e., Olver et al., 2007) could be due to preexisting recidivism risk levels rather than treatment gain in itself. Therefore, in order to control for pretreatment differences in DRFs the authors created change scores accounting for this risk and they compared different methods of assessing treatment change using multiple self-reports including self-reports administered pre- and

posttreatment. The SRMs were divided into four DRFs categories: social inadequacy (e.g., Social Self-Esteem Inventory [Lawson et al., 1979] and Assertion Inventory [Gambrill & Richey, 1975]), sexual interests (i.e., Wilson Sexual Fantasy Questionnaire; Wilson, 1978), anger and hostility (i.e., State-Trait Anger Expression Inventory; Spielberger, 1983), and pro-offending attitudes (e.g., Abel-Becker Cognitions Scale [Abel et al., 1989] and Rape Myth Acceptance Scale [Burt, 1980]. Overall, the treatment change scores in these factors had effect sizes medium to large in magnitude. Treatment gains were especially apparent in variables pertaining to social inadequacy (*d* ranging from 0.29 to 0.76) and pro-offending attitudes (*d* ranging from 0.57 to 0.89). The largest effect sizes were found for cognitive distortions related to children and sexual behaviors (*d* = .89), depressive symptoms (*d* = 0.76), rape myth acceptance (*d* = 0.63), assertiveness (*d* = 0.58), internal locus of control (*d* = 0.57), and hostility towards women (*d* = .55). Furthermore, the predictive validity of these change scores for sexual recidivism were all significant, except for those pertaining to the pro-offending attitude category. Lastly, all predictive associations were related to lower sexual recidivism rates (AUCs ranging from to .62 to .66). The significance remained for the SRMs after controlling for static and dynamic pretreatment risk.

Wakeling et al. (2013) also examined treatment change as measured by SRMs and its association to recidivism after a two-year follow-up period. The sample in this study included 3774 sexual offenders against adults and children who had participated in a CBT-based treatment program for sexual offenders while incarcerated. Treatment change and its relationship to recidivism was examined for DRFs falling into four domains: sexual interests (i.e., Multiphasic Sexual Inventory; Nichols & Molinder, 1984), pro-offending attitudes (i.e., Entitlement Sex scale [Hanson et al., 1994], Sex with Children is Justifiable scale [Mann et al., 2007], socio-affective

problems (i.e., Locus of Control [Levenson, 1974], Revised Dissipation Rumination Scale [Caprara, 1986], Openness to Men and Women Scales [Underhill et al., 2008], Self-Esteem Scale [Webster et al., 2007], UCLA Loneliness Scale [Russell et al., 1980]) and self-regulation problems (i.e., Interpersonal Reactivity Index [Davis, 1980], Impulsivity Scale [Eysenck & Eysenck, 1978]). Different from past studies, treatment change was separated into two distinct categories clinical significance change and reliability of change. For clinical significance to be reached the posttreatments scores had to fall at least one standard deviation above the pretreatment score. For reliability of change, the reliability of change index was used. These two categories were then used to create four distinct categories: deteriorated, unchanged, improved, recovered, and "already ok". Results did not universally demonstrate associations with treatment gain and lower recidivism rates. Pre- to- posttreatment changes on the different DRFs were only reported as the proportion of the sample that fell into the categories mentioned above, which greatly limits the interpretation of treatment effectiveness in this regard. The percentage of individuals who were considered to have made a clinically significant change on the measures ranged from 49.9 % (i.e., Self-Esteem Scale) to 64.8 % (i.e., Sex with Children Scale), with those who were considered to have made a reliable change ranged from 7.3 % (i.e., Paraphilias subscale of the Multiphasic Sexual Inventory) to 37.4 % (i.e., Self-Esteem Scale). When examining the associations with recidivism, the four-category system mentioned above was used. Mainly the measures in the socio-affective domain had a significant association with lower recidivism rates. When the four different treatment categories were compared, those who were deemed improved in three out of the four domains were reconvicted at lower rates. More specifically, change in the sexual interests and self-regulation domain were significantly related to lower recidivism rates (e^B of 0.50 and 0.56 respectively) but not the pro-offending attitudes or

socioaffective problem domains rape (e^B of 0.91 to 0.74 respectively). However, the shorter follow-up time used (i.e., 2 years) resulted in low recidivism rates. Consequently, a combined category of sexual and violent recidivism was used as the outcome measure.

1.5.2 Treatment Change Using Risk Assessment Measures

Not only do dynamic risk assessment measures add to the prediction of recidivism risk (Hanson et al., 2007; Wong et al., 2003), they also have the potential to evaluate treatment changes in DRFs, potentially providing important information on treatment effectiveness (Hanson et al., 2007; Wong et al., 2003). Specifically, they could capture the positive or negative changes occurring during treatment and help evaluate which ones predict lower recidivism rates. The Stable-2007 (Hanson et al., 2007) and VRS-SO (Wong et al., 2003) are two of the most validated and widely-used dynamic risk assessment measures created specifically for sexual offenders and that have the potential to capture treatment change.

The VRS-SO is a rating scale designed to assess and predict sexual recidivism risk as well as measure and link treatment change to recidivism (Olver et al., 2007). The VRS-SO contains seven static and 17 DRFs that have been linked to sexual recidivism that can be combined or used separately. The 17 dynamic items can be divided into three dimensions: sexual deviance, criminality, and treatment responsivity. The dynamic items contain two levels of scoring, the first on a four-point scale, assesses the seriousness of the risk factor present. The second score is related to the risk factors that are deemed problematic in the first score and are rated based on where the individual finds himself in the stages of change for that particular item (i.e., contemplation to action). A level of change is assigned at baseline and modified at pretreatment depending on the extent of change that occurred. The level of positive change is assigned a value that is used to modify the original seriousness score of that particular risk factor

(Olver et al., 2007). The second most widely used dynamic risk assessment measure, the Stable-2007, (Hanson et al., 2007; Hanson et al., 2015) consists of 13 DRFs rated on three-point scale. Contrary to the VRS-SO, the Stable-2007 does not include a separate point evaluation system to account for change (i.e., pre- and posttreatment scores are evaluated the same way). Several studies have evaluated treatment change using these dynamic risk assessments, and the majority of these studies have examined treatment change using the VRS-SO (Beggs & Grace, 2011; Goodman-Delahunty & O'Brien, 2012; Olver et al., 2007, 2014, 2020; Olver & Wong, 2011; Sowden & Olver, 2017) with only one using the Stable-2007 (Sowden & Olver, 2017).

1.5.2.1 Treatment Change Using the VRS-SO. The first study examining treatment change on the VRS-SO and its association to recidivism had a primary goal of evaluating its reliability and validity (Olver et al., 2007). In order to do this, the VRS-SO psychometric properties were examined followed by the examination of the relationship between treatment gain and recidivism rates. The sample included 321 sexual offenders who had participated in a high intensity 6 to 8 month specialized inpatient treatment program for mixed sexual offenders (i.e., Clearwater Program), that included sexual offenders against children and adults. Results were indicative of significant pre- and posttreatment differences on two of the three dynamic risk dimensions (i.e., sexual deviance and criminality; Olver et al., 2007). The VRS-SO Static change score and total dynamic VRS-SO change score were significantly associated with sexual recidivism. The static score associated with higher sexual recidivism rates and the total dynamic change score to lower sexual recidivism ($e^B$of 1.23 and 0.90 respectively). When the VRS-SO pretreatment risk score was controlled for the total dynamic change score remained significantly predictive of lower rates of sexual recidivism ($e^B$of 0.90 for total dynamic change).

As mentioned earlier, the study by Beggs and Grace (2011) examined the relationship between positive treatment change and recidivism by comparing different methods of measurement in a sample of 218 sexual offenders with child victims who completed an inpatient treatment program. Pretreatment differences in DRFs were controlled for by creating residual change scores accounting for pretreatment risk. As well as examining change scores on SRMs, the VRS-SO was also examined. There were significant changes on the VRS-SO's total score and dimension scores pre- to- posttreatment, with the largest change occurring on the sexual deviance (M = 2.25) dimension followed by the treatment responsivity (M = -1.11) and criminality dimension (M = 0.26). When the predictive validity of these scores was analyzed positive changes on the total VRS-SO change score significantly predicted lower rates of sexual recidivisms (r = -.23), this was also true for sexual deviance (r =.25). The treatment responsivity dimension change score had a predictive relationship in the expected direction but was non significant. However, after controlling for pretreatment risk the VRS-SO total change score was no longer significantly related to lower rates of sexual recidivism. Although this study was one of the first to use residual change scores to account for pretreatment risk, this was only done for the SRMs and not the VRS-SO measure and its dimensions. In addition, the pre- to posttreatment differences and respective effect sizes on the VRS-SO and its dimensions and the relationship between these change scores and sexual recidivism were not reported as they were for the SRMs. Finally, the predictive relationships between the VRS-SO dimensions and sexual recidivism was not reported as it was for the SRMs. These limitations greatly impact the comparisons that can be made between the VRS-SO and SRMs on treatment change and their impact on recidivism.

A final study used a sample 532 mixed sexual offenders that had participated in a specialized high intensity treatment program based on the RNR principles (i.e., National Sex

Offender Program) to examine treatment change (Olver et al., 2020). The effects of treatment change on sexual, violent, and general recidivism were examined using an average 10-year follow-up period. In addition to treatment change being analyzed using the VRS-SO total dynamic score, its three individual dimensions were also examined (i.e., sexual deviance, criminality, and treatment responsivity). First raw change scores were examined followed by the standardized residual change scores. Overall, the findings for raw change scores were non significantly predictive of recidivism, only the sexual deviance dimension raw change scores were predictive of lower rates of violent recidivism and the criminality dimension raw change scores predictive of higher rates of general recidivism (*d* of -.33 and .31 respectively). However, when residual change scores were examined all residual change scores were significantly predictive of lower recidivism rates (*d* ranging from -.18 to -.61). Only the VRS-SO dynamic total residual change score did not have a significant relationship with general recidivism. Incremental validity was also analyzed for the VRS-SO total dynamic change scores. The total dynamic VRS-SO change scores significantly predicted sexual and violent recidivism after controlling for the Static-99R and VRS-SO dynamic pretreatment score ($e^B$of .88 and .94 respectively), but not general recidivism. This study was an updated version of the 2014 study by Olver et al., which found similar results but had a shorter recidivism follow-up period (i.e., four years). The Olver et al. (2020) study addressed previous limitations in that authors used standardized residual change scores for the total dynamic change scores and its dimensions. However, no other measurements were used as comparisons or additives to the results and the incremental validity of the different dimensions of the VRS-SO was not examined.

There are two studies examining the relationship between treatment change and recidivism on the VRS-SO that were unable to replicate the findings above. The first, a study

conducted by Goodman-Delahunty and O'Brien (2012), examined treatment change on the VRS-SO and recidivism. Recidivism rates were obtained after an average follow-up period of nine years using a sample 93 Australian intrafamilial sexual offenders who followed an outpatient based treatment program of two years. This group was compared to 120 sexual offenders who had declined treatment or who did not meet criteria for treatment. The VRS-SO treatment change scores did not predict sexual, violent or general recidivism (Goodman-Delahunty & O'Brien, 2012). However, the statistics for the cox regression analysis were not included in the article.

The second, study by Sowden and Olver (2017), examined the association between change scores on the VRS-SO and Stable-2007 in 180 mixed sexual offenders who had participated, but not necessarily completed, the same specialized inpatient treatment program as Olver et al. study (Clearwater program; 2007). The follow-up period used for recidivism was of approximately 10 years. Contrary to findings from Olver et al. (2007) and Beggs and Grace (2011), no significant associations were found between the VRS-SO total and dimension change scores and sexual recidivism. For general recidivism, only the sexual deviance dimension had a significant association with lower rates of general recidivism. However, for violent and nonsexual violent recidivism more significant associations were found, but changed depending on whether pretreatment scores were controlled for. For example, the sexual deviance change score dimension significantly predicted sexual and nonsexual violent recidivism but not after controlling for pretreatment score (r of .15 vs. -.03 and -.18 vs. -.14 respectively). When static risk and pretreatment risk was controlled for VRS-SO total change scores did not significantly predict lower rates of sexual recidivism, but did for violent and general recidivism ($e^B$of .90 and .94 respectively; Sowden & Olver, 2017). The following study compare scores to another

measurement the Stable-2007, but it did not examine the incremental validity of the different dimensions of the VRS-SO (Sowden & Olver, 2017).

1.5.2.2 Treatment Change Using the Stable-2007. Only the above-mentioned study by Sowden and Olver (2017) has examined the association between treatment change on the Stable-2007 and its associations to recidivism. Contrary to the VRS-SO, change scores on the Stable-2007 did not predict reductions in sexual, violent, or general recidivism in this study (Sowden & Olver, 2017).

1.5.2.3 Meta-Analysis Examining Treatment Change. One meta-analytic study has examined the predictive properties of dynamic risk assessment measures including the VRS-SO and Stable-2007 using 52 studies (N = 13 446; Van den Berg et al., 2018). Within the analyses, they examined the association between treatment change scores and recidivism. Findings indicated that change scores on the dynamic risk assessment measures predicted lower rates of sexual (d = .26), violent (d = .14) and general recidivism (d = .10; k = 23). Incremental predictive validity was also examined. Findings suggested that change scores on dynamic risk assessment instruments added to the prediction of sexual (e^B = 0.91), violent (e^B = 0.93), and general recidivism (e^B = 0.95), after controlling for static risk and baseline dynamic risk (k = 14). The effects were largest for associations with sexual recidivism. However, only a small part of the variability was explained by change scores for all recidivism rates (Van den Berg et al., 2018).

Research examining the relationship between treatment change in sexual offender related treatment programs and recidivism is still in its early stages of development. Multiple studies support the VRS-SO ability to capture treatment change (i.e., pre- to- posttreatment change) and their association with lower levels of recidivism (Beggs & Grace, 2011; Olver et al., 2007, 2014, 2020; Sowden & Olver, 2017). However, the same cannot be said for SRMs and the Stable-2007.

Few studies examine treatment change on SRMs and their predictive relationship with recidivism and there is only one study doing so for the Stable-2007 (Sowden & Olver, 2017). The extensive use of SRMs and the Stable-2007 in this field of research requires that more studies examine their ability to capture treatment change on individual DRFs, and have these changes be related to recidivism.

Taken together, there is little evidence comparing different types of measures in their ability to capture treatment change and have it predict lower recidivism rates. It is often assumed that offenders are deceitful in their self-reports, especially due to factors related to desirable responding (Hood et al., 2002; Tan & Grace, 2008). However, there is very little empirical evidence supporting this statement in the field of sexual offender treatment. In fact, multiple studies have demonstrated that self-reports are just as accurate in predicting recidivism as clinician-rated measurements which included risk assessment measures (Beggs & Grace, 2011; Loza & Loza-Fanous, 2001; Mills & Kroner, 2005). In fact, it has been suggested that the use of multiple types of measures in the same study could provide more in-depth understanding of treatment effectiveness (Beggs & Grace, 2011).

In sum, more research is needed evaluating changes occurring during treatment on DRFs and how these changes are contributing to lowering recidivism rates. There are few studies examining which specific DRFs are showing improvement, and which improvements are contributing most to lower recidivism rates in sexual offenders. These areas of research warrant further investigation in order to optimize effectiveness of the already existing specialized treatment programs in the field of sexual offending.

CHAPTER 2

TREATMENT PROGRAM

"Centre d'Étude et de Recherche de l'Université de Montréal (C.É.R.U.M)"

The treatment program being evaluated was offered by *"Centre d'Étude et de Recherche de l'Université de Montréal (CERUM)*'' between 1991 and 2015 and was specialized in the evaluation and treatment of sexual offenders. The CERUM program was designed to meet the specific needs of a population composed of sexual offenders released into the community in the Montreal area in the province of Quebec, Canada. The aim was to reduce sexual recidivism by enabling individuals to understand and control their sexual behavior. Development was based on the most recent scientific literature available at the time. In 2004, the treatment program was updated and modified to specifically target sexual offenders most at risk of sexual recidivism. The program targeted this specific population because of the greater risk they pose to society and because of the lack of availability of outpatient treatment programs specialized in treating higher risk sexual offenders. The updates were made following the recommendations set by a committee of experts that were academically based in the subject or who worked with Correctional Services Canada, and new measures were implemented to assure that the program's effectiveness could be accurately evaluated.

Although this treatment program was originally created in the early 1990s and updated in 2004, the rational for including many of the modules then are still relevant today. However, because the treatment program was updated in 2004, more recent literature on the different elements of each module are not included in the program description. CERUM was designed as a community-based program, because it was believed that this context would provide participants with the opportunity to apply the skills learnt during the course of treatment. Participants also had the opportunity to share their difficulties during treatment as they were occurring in their lives, giving clinicians the opportunity to provide adapted assistance. Furthermore, the treatment program was created using the risk, need, responsivity (RNR) principles because scientific

literature showed its effectiveness (Freeman-Longo et al., 1995; Marshall, 1996). In fact, the program was specifically tailored to address all three principles of RNR. Risk assessment measures were used (Static-99 and Stable-2000) to evaluate each participant's risk level, permitting the inclusion of those at a higher risk of reoffending and needing a more intensive specialized treatment program as the current one being described. This element was addressing the risk principle of RNR. The program was also designed to address a variety of dynamic risk factors (DRFs) associated with sexual recidivism, therefore targeting the needs principle of RNR. Finally, the program followed the cognitive behavioral therapy (CBT) model and was mainly group based, with individual sessions provided every month to address individual offenders' difficulties identified during the group sessions. This structure was implemented to assure that the responsivity principle of RNR was being met. The treatment program's design permitted the evaluation of changes occurring in different DRFs, which could then be associated with different types of recidivism.

For the purposes of the current study we will only describe the updated 2004 version of the program. There were 45 weekly group meetings lasting approximately two hours and individual meetings on average once a month, with the possibility of adding more if it was deemed necessary. All meetings occurred in the evening to facilitate societal reintegration. Groups were led by two clinically trained psychotherapists, one male and one female, to facilitate therapeutic alliance and participants' receptivity to the information being shared. Groups followed an open-format, that is new participants could be integrated into the group at the beginning of any module.

The program had three main treatment objectives: 1) increase control of paraphilic sexual interests (PSIs), 2) deepen the understanding of sexual behavior, therefore providing the

knowledge needed to manage it, and 3) improve and assist in social adjustment. The control of PSIs was separated into three modules: olfactory therapy, satiation therapy, and covert sensitization. The deepening of one's understanding of sexual behavior was separated into two modules: cognitive restructuring and relapse prevention. Finally, the improvement of social adjustment was also separated into two modules: sexual education and intimacy; and emotion management. The seven modules were organized in a way that participants could begin the program at the beginning of almost any module, increasing its accessibility and reducing the wait time between when participants were released from prison and the start of the program. Each module had its own set of objectives and standardized exercises that had to be completed by all participants. All modules lasted five weeks, except for the emotions management and relapse prevention modules, which lasted 10 weeks. In the next section, the rational for each objective will be explained and described as well as their respective modules.

2.1 Control of Paraphilic Sexual Interests

One of the main objectives of the treatment program was the control PSIs because they have repeatedly been demonstrated as one of the most important DRFs related to sexual recidivism (Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2005; Launay, 1994), and have therefore become one of the main treatment targets when examining treatment programs tailored to this population (Hanson & Morton-Bourgon, 2005). Therefore, different ways of eliminating, reducing, or controlling them have been included in different treatment programs. This program used three behavioral strategies to target paraphilic sexual behaviors with the hope that it would target the PSIs associated with them: olfactory therapy, covert sensitization, and satiation therapy (Rouleau et al., 2004).

2.1.1 Olfactory Therapy

The olfactory system is one of the oldest sensory systems of the brain, and as such has a direct pathway to the cerebral cortex (Bear et al., 1997; Price et al., 1991). The olfactory system plays an important role in the expression of emotions, motivations, and memories (Bear et al., 1997). Consequently, an odor associated with a particular memory can activate that memory and the specific emotions associated with it. Furthermore, a special link between the olfactory system and human sexuality was identified when the *Kallmann-Dumorsier syndrome* was discovered. This syndrome was based on the discovery that the low production of a certain hormone, which delays or prevents individuals from expriencing puberty, was specifically linked to an impaired sense of smell (Holley, 1999). Due to the olfactory system's link to memory and sexuality, clinicians and researchers used the olfactory system in aversion therapy to treat paraphilic sexual behaviors. As previously discussed, in aversion therapies the main objective is pairing a deviant sexual stimulus, or the sexual reaction associated with it, to an unconditioned aversive response (McConaghy, 1990; Proulx, 1993). Aversion therapy using the olfactory system has been successfully used to treat PSIs in sexual offenders in the past (Earls & Castonguay, 1989; Laws et al., 1978).

In this module of the CERUM treatment program, ammonia was paired with paraphilic sexual thoughts and/or mental images related to the individual's PSIs, usually events leading up to a potential sexual offense (Rouleau et al., 2004). The ultimate goal was to create a negative association between the paraphilic thoughts, images, and/or situations of a sexual offense and the smell of ammonia (Rouleau et al., 2004). Although the Association for the Treatment of Sexual Abusers (ATSA) have acknowledged that PSIs cannot be eliminated with such procedures, they

have postulated that it can increase an individual's control of their sexual interests (ATSA, 2001).

2.1.2 Covert Sensitization

Covert sensitization is a form of behavioral therapy in which undesirable behavior is paired with an unpleasant image in order to eliminate that behavior. Although originally developed to address compulsive behaviors, it was eventually adapted to treat PSIs (Barlow et al., 1969; Cautela, 1967; Maletzky 1991, 1998; Salter, 1988).

In this module, two different types of images were used for visualization: images depicting different behaviors leading up to a sexual offense and images depicting the positive consequences of engaging in acceptable behavior (Rouleau et al., 2001). During this procedure, individuals were confronted with the consequences they had experienced as a result of their behaviors with the intent of motivated them to want to make the appropriate changes in their lives (Rouleau et al., 2004). The first step consisted of using imagery techniques to pair scenes leading up to their sexual offenses with the negative consequences experienced by the individual due to the offense. The objective was to inhibit the attraction and sexual pleasure gained from these behaviors by making them less appealing (Rouleau et al., 2004). The second step involved using the same techniques but pairing positive behaviors with positive consequences. The objective of this second step was to generate positive consequences that the individual would not want to risk losing by recommitting a sexual offense (Rouleau et al., 2004).

2.1.3 Satiation therapy

Sexual fantasies can be defined as scenarios or mental images describing sexual situations. They have been considered a significant factor in the development and maintenance of aggressive sexual interests (Swaffer et al., 2000), and research has established a link between

sexual offenders and paraphilic sexual fantasies (McGuire et al., 1965). Although certain dimensions of sexual fantasies can be inherent, research in the sexual field has repeatedly demonstrated that sexual responses can be learnt (Rachman & Hodgson, 1968). Elements and images contained in sexual fantasies can acquire their erotic value through learnt behavior by means of classical or operant conditioning, or by vicarious learning (Beech et al., 1971; Rachman & Hodgson, 1968). It is therefore possible that the pairing of sexual arousal with an unconditioned stimulus can cause that stimulus to activate sexual arousal on its own, potentially explaining the diversity found in individuals' sexual fantasies (Proulx, 1993). The association between the erotic value of fantasies and learnt behavior, lead to the possibility of being able to diminish the erotic value by directly modifying the association between it and the targeted learnt behavior. The following module of the CERUM treatment program was based on this theory and used the satiation method to this effect.

Satiation is defined as the repetition of a behavior having the effect of diminishing the probability of that behavior recurring in the future (Dunlap, 1932; Yates, 1958). In this module, participants learnt to overexpose themselves to their paraphilic sexual fantasies so as to not be as physically aroused by them, and to gradually adopt fantasies that were not paraphilic in nature, but more appropriate. In this module orgasms were used as the positive reinforcer for non-paraphilic fantasies. The participants were asked to masturbate at home until ejaculation while recounting a previously chosen non-paraphilic sexual fantasy. Once ejaculation was achieved, they were asked to continue masturbating during the refractory period while this time recounting a paraphilic sexual fantasy (Abel & Anon, 1982, as cited in Laws & Marshall, 1991). The objective of satiation therapy was to eliminate the association between the sexual pleasure derived from an orgasm associated with PSIs, and replace it with an unpleasant association:

masturbating in the absence of sexual excitation (Proulx, 1993; Rouleau et al., 2004). Ideally, this new association would diminish the erotic value of the paraphilic sexual fantasy used in the exercise.

2.2 Deepening the Understanding of Sexual Behavior

Assisting sexual offenders in understanding their problematic sexual behaviors is an important element of treatment programs. Understanding their problematic sexual behaviors entails helping them identify the different elements that contributed to their sexual offenses as well as the different warning signs that are putting them at risk of reoffending. The cognitive distortions and pro-offending attitudes that underline and reinforce certain beliefs systems and promote their inappropriate sexual behaviors are an important element in understanding them (Mann et al., 2010). Learning how to modify and replace them with more appropriate attitudes potentially has the effect of increasing their control over such behaviors (Kim et al, 2016). Relapse prevention also has a similar effect; it helps sexual offenders recognise and regulate the external and internal factors that are contributing to their sexual offenses and again increases their control over such behaviors (Andrews & Bonta, 2016; Kim et al., 2016). For these reasons, modules based on cognitive restructuring and relapse prevention were added to the treatment program.

2.2.1 Cognitive Restructuring

Cognitive distortions are maladaptive patterns of thinking and ideas that can have important consequences on an individual's functioning (Beck, 1995). For over 30 years, research has explored the different cognitive distortions attached to PSIs found in sexual offenders. Such beliefs and attitudes serve to maintain these sexual interests and must therefore be addressed in treatment programs (Tierney & McCabe, 2001; Ward et al., 1997). As previously mentioned,

PSIs are still considered one of the most important DRFs linked to sexual recidivism (Helmus et al., 2013), and as such have become a main treatment target in sex offender programs (Arkowitz & Vess, 2003; Hanson & Harris, 2000; Tierny & McCabe, 2001; Ward et al., 1997; Ward & Siegert, 2002).

Cognitive distortions usually include attitudes and beliefs used by sexual offenders to excuse, rationalize, justify, and minimize their crimes (Arkowitz & Vess, 2003; Maruna & Mann, 2006). Multiple studies have identified common cognitions that excuse or justify sexual behaviors related to sexual offenses (Abel et al., 1989; Bumby, 1996; Stermac & Segal, 1989; Tierney & McCabe, 2001; Ward et al., 1997). For example, sexual offenders against children might perceive children to be sexually motivated and attractive in their behaviors and even minimise the harm that is done to them during sexual crimes (Hanson et al., 1994). They also tend to have beliefs of entitlement with regards to their sexual rights (Hanson et al., 1994). The presence of cognitive distortions in sexual offenders against adults has been linked to acceptance of rape myths, sexual stereotypes, and interpersonal violence (Ward et al., 1997) creating distorted perception and interpretation of victims and their actions. When the CERUM treatment program was created, there was already existing research demonstrating that treatment can be effective in modifying these types of cognitions. For example, Marshall (1994) demonstrated a positive effect of treatment on the level of minimization and denial of the participant's sexual crimes, and Crolley et al. (1998) demonstrated a positive treatment effect in dissimulation, justification of their offending behavior.

The objective of this module was to first help participants identify false beliefs or attitudes that lowered their inhibitions or served as excuses to justify their offenses and then have them learn how to restructure them (Rouleau et al., 2004). In this module education on cognitive

distortions and the role they played in sexual offenses was provided. The participants' own personalized misguided beliefs, thoughts, rationalizations and justifications were identified and confronted (Rouleau et al., 2004). Associations were made between their core beliefs and their resistance to change (Rouleau et al., 2004). The clinicians were also instructed to attempt to get participants to accurately reflect on the concept of consent in sexual offending situations in order to increase their understanding of the direct and indirect impacts their behaviors had on their victims (Rouleau et al., 2004).

2.2.3 Relapse prevention

The relapse prevention model used for this module was that created by Ward and Hudson (Hudson & Ward, 1997; Ward & Hudson, 2000; Ward et al., 1995). They postulated, based on their analysis of the behavioral patterns of sexual recidivists, that the perpetration of a new sexual offense was the result of the way individuals self-regulated their behavior in relation to their personal goals. They developed a nine-step, four pathways, self-regulation offense process.

The first stage consists of an event in the life of the individual that can trigger past memories and emotional scripts that affect how the individual will interpret and act in a certain situation. For example, if an individual feels resentment and distrust towards women and has an argument with his spouse, he may feel humiliated and angry. These feelings can then trigger behavioral scripts, pre- learnt behaviors or cognitions, designed to enhance his self-esteem. This can then lead to inappropriate ways of coping, such as the commission of sexual offense (Ward & Hudson, 2000). The second stage is characterized by the emergence of urges and affective states associated with these past experiences. Sexual fantasies are often associated with these urges, and act as cognitive reinforcers of the unwanted behavior. The third stage is where these urges lead to a goal concerning paraphilic sexual behavior. At this stage, the individual

determines whether his paraphilic urges are acceptable to him and what he should do about them. The ability to tolerate the emotional states involved in these urges is also considered and self-regulation becomes an important factor at this stage. Accordingly, some sexual offenders may have problems tolerating the emergence of negative emotions and therefore engage in avoidance behaviors every time they have such feelings. Others will feel stimulated and want to reinforce a more positive emotional state such as sexual arousal. If the individual decides that his urges are acceptable to him, he will make a choice to offend and start elaborating a plan to achieve such goals. If the behavior is judged unacceptable, the individual will try to resist by finding ways to avoid such behavior.

During the fourth stage, the individual begins to elaborate on ways to achieve his goal, which is not always conscious. According to Ward and Hudson (2000), four pathways lead to the new sexual offense. In the *passive-avoidant pathway,* the individual wants to avoid their paraphilic sexual behaviors, but is unable to implement strategies because they lack the knowledge to do so. Therefore, they manage their urges and negative emotions by denying them or by ineffectively distracting themselves. In the *active-avoidant pathway*, the individual tries to control paraphilic related thoughts, fantasies or emotional states that could lead them to engage in problematic paraphilic sexual behaviors. However, the strategies used are ineffective and even increase the likelihood that the they will engage in the unwanted behavior. The *automatic-approach pathway* involves the individual following a behavioral script that leads to the commission of a sexual offense. Therefore, to this individual the behavior appears to occur unexpectedly and impulsively with no forethought. The *approach-explicit pathway* involves a conscious decision and explicit planning. In this pathway, the individual had the ability to self-regulate and use coping skills, but uses these abilities to engage in inappropriate sexual behavior.

Individuals in this pathway are not trying to avoid negative emotions, but trying to enhance the positive ones associated with inappropriate sexual behaviors.

In the fifth stage, the individual confronts a high risk situation involving a potential victim, which results from the planning involved in the previous step. The sixth stage involves engaging in behaviors closely related to the sexual offense, such as sleeping with a child. At the seventh stage the individual has committed to the sexual offense. At the eighth stage, the individual evaluates the offense that has just occurred. During the ninth and final stages, the individual determines their expectations about their future sexual behavior.

These stages were the main focus in the relapse prevention module of the CERUM treatment program (Rouleau et al., 2004). Participants learnt to personalize and identify each stage of their own offense process by including specific situations, thoughts, and emotions present at each stage. They then learnt how to self-regulate more appropriately by learning different problem solving and coping skills (Rouleau et al., 2004). Once participants understood these different stages and able to personalize each step them to their own experiences, they were then taught the inner workings of the relapse process (Rouleau et al., 2004). First, an individual could interrupt the relapse process at any of the nine stages by using effective and appropriate coping strategies to assist them in self-regulating their inner experiences, such as their cognitions and emotions (Ward & Hudson, 2000). Second, the use of appropriate coping strategies will increase in difficulty as the individual advances through the stages, making it increasingly difficult to interrupt the relapse process (Ward & Hudson, 2000). Third, an individual can reverse or progress through the stages, but also remain at a specific stage for undetermined period of time (Ward & Hudson, 2000). Finally, they learnt how to organize their life in a way

that would put them in a better position to manage these situations if they occurred (Rouleau et al., 2004).

2.3 Social Adjustment

The scientific literature on sexual offending has demonstrated this population's difficulty in adjusting to societal standards and functioning appropriately within them. The difficulty in adjusting has been identified as important factor in the sexual offense cycle (Howells et al., 2004) as well as an important element in sexual reoffending (Hanson & Harris, 2000, 2001; Thornton, 2002). Much research has focused on identifying the different DRFs that could explain sexual offenders' difficulty in this area. Self-regulation, intimacy deficits, and lack of appropriate sexual knowledge are among those that have been identified as contributing to social adjustment. Multiple contemporary theories suggest that sexual offenders grow up in adverse family environments where they lack the appropriate support and guidance needed to develop the knowledge and skills necessary to function appropriately in society (Knight & Sims-Knight, 2003; Malamuth, 2003; Ward & Siegert, 2002). Due to their environment, they lack the appropriate knowledge on sexuality including what constitutes appropriate romantic and friendly relationships (Beech et al., 2003; Bumby & Hansen, 1997; Keenan & Ward, 2000; Marshall, 1994; Marshall et al., 1999). Furthermore, they do not learn how to self-regulate appropriately, especially in regard to their negative emotions (Marshall et al., 1999; Ward & Hudson 2000; Ward et al., 1997). The empirical evidence that societal functioning is in part affected by deficits in self-regulation, difficulties in forming appropriate relationships, and a lack of appropriate sexual education is the reason why modules based on these elements were included in the following program.

2.3.1 Sexual Education and Intimacy

Several studies have shown that sexual offenders lack or have incorrect basic knowledge regarding sexual education, intimacy, and social skills (Bumby & Hansen, 1997; Keenan & Ward, 2000; Marshall, 1994; Marshall et al., 1999; Segal & Marshall, 1985). Several authors have also pointed out significant deficiencies in the capacity of sexual offenders to initiate, develop and maintain emotional relationships (Aubut et al., 1998; Bumby & Hansen, 1997; Eldridge & Wyre, 1998; Hudson et al., 1998; McKibben, et al., 1994; Ward et al., 1997). The lack of knowledge also plays a role in many stages of the offense cycle and can promote the emergence and maintenance of PSIs (Rouleau et al., 2004). The lather can create fear and performance anxiety which affects the individual's ability to form healthy relationships with consenting adults and can also result in many cognitive distortions that facilitate the justifications of a sexual crime (Rouleau et al., 2004). By increasing the individual's knowledge in these domains, the goal was to promote healthier sexual behavior with consenting adults and reduce misconceptions about sexuality that could have played a role in their past sexual crimes (Rouleau et al., 2004). That said, this treatment program took into consideration that many of the individuals would have already taken part in some type of sexual education during their incarceration, therefore the focus was on the application of that knowledge to the real world situations they were being confronted with during their participation in the program (Rouleau et al., 2004).

The main goal of this module was to demystify the different misconceptions of sexually, increase their basic knowledge concerning sexual behavior and improve their ability to develop and maintain healthy emotional relationships (Rouleau et al., 2004). To do this, individuals reviewed their knowledge on female and male anatomy as well as on different sexually

transmitted diseases (Rouleau et al., 2004). They also reviewed the different types of sexual dysfunctions and their respective treatments. The different phases of the male and female sexual response were also discussed (Rouleau et al., 2004). They were then confronted on the different myths and beliefs about sexual behavior and encouraged to identify the characteristic they would want in a future partner (Rouleau et al., 2004). Finally, discussions about appropriate seduction skills took place as well as the importance of communication and emotional management in relationships (Rouleau et al., 2004).

2.3.2 Emotions Management

Research over the years has demonstrated the importance of emotions and their regulation in paraphilic sexual behaviors. Negative emotions play a particularly important role, specifically feelings of anger and hostility (Hanson & Harris, 2000, 2001). Research has shown that certain offenders have hostile reactions when experiencing negative emotions, and ruminate over negative events and feelings instead of managing them appropriately (Hanson & Harris, 2000, 2001). An older study on sexual offenders (Pithers et al., 1987) demonstrated that 89% of sexual offenders experienced intense emotions prior to their offense. More specifically, in men who sexually assaulted adult women, 98% reported feeling intense anger, usually related to an interpersonal conflict prior to the crime, and in men who sexually abused children, a third experienced anger prior to the crime. In fact, poor anger management was an important and recurring theme in sexual offenders (Aubut et al., 1998; Eldridge & Wyre, 1998; Hudson et al., 1998; McKibben et al., 1994; Proulx et al., 1996).

Negative emotions have also been shown to lead to impulsive behavior (Hanson & Harris, 2001*),* and have also been linked to paraphilic sexual fantasies because some sexual offenders often use sexuality as a coping mechanism to alleviate negative emotions (Hanson &

Harris, 2001). Poor social skills in sexual offenders have also been shown to be a source of many negative emotions, such as feelings of unfairness, frustration, resentment, and depression, all of which can precede a sexual offense (Eldridge & Wyre, 1998). Hence, it is important for individuals who want to change their paraphilic sexual behaviors to develop strategies for improving self-control and self-regulation.

In this module, participants were brought to identify the different emotions related to their sexual crimes, and the factors and situations that could have contributed to them (Rouleau et al., 2004). Not only was the goal to increase their understanding and control of potential dangerous situations or precursors to their crimes, but it permitted them to begin to identify their negative emotions and their potential sources (Rouleau et al., 2004). Next, they were taught cognitive, assertiveness, and social skills involved in emotional regulation and how to maintain these changes over time (Rouleau et al., 2004). Much focus was also put on the application of these skills in their everyday lives and the situations they were actively being confronted with that generated negative emotions (Rouleau et al., 2004).

CHAPTER 3

CURRENT STUDY

The empirical literature on change over the course of sexual offender treatment, the validity for methods of measuring treatment change, and whether treatment change reliably predicts recidivism has several notable limitations. The majority of studies examine treatment effectiveness by examining recidivism rates during the years following its completion, and by comparing offenders that have undergone treatment to those who have not (Vrieze & Grove, 2010; Zgoba & Simon, 2005). However, this area of research could use more studies focusing on the specific changes occurring in the dynamic risk factors (DRFs) included as treatment targets. Furthermore, the literature would benefit from understanding which improvements in treatment are contributing to recidivism, especially sexual recidivism. The latter methodology permits an examination of whether improvement on DRFs are occurring during treatment and links these changes to lower recidivism rates, improving the understanding of sexual offender treatment (Marshall & Burton, 2010; Lösel et al., 2012; Olver & Wong, 2013). Many authors have underlined the importance of examining which treatment targets are more susceptible to improvement and which improvements are contributing to the lower recidivism rates (e.g., Beggs, 2010; Douglas & Skeem, 2005; Grady et al., 2011). Gathering this information would add to and clarify the already existing knowledge on the strengths and weaknesses of risk, need, responsivity principles (RNR) based programs being used and help target the exact areas needing improvement.

In addition to the benefit of having more studies examining treatment change on DRFs and their association with recidivism, the field would also gain from understanding the capacity of different methods to capture changes occurring. The evidence supporting the Violence Risk Scale-Sexual Offender Version's (VRS-SO) ability in this matter surpasses the evidence available for other methods. The Stable-2007, which is a similar risk assessment to the VRS-SO

and designed for the same purpose, and self-report measures (SRMs) are examples of this discrepancy. More studies comparing the validity of the different methods available to measure treatment change would significantly contribute to the understanding of the changes occurring during treatment. The evidence obtained could potentially form a starting point for changes and modifications that need to be made in order to improve the validity and reliability of particular measures to assess treatment changes. For these reasons, continuing to build on the evidence base that examines treatment change and its association to recidivism is an important area of research.

3.1 Objectives

The current study aims to evaluate the changes occurring in a specialized community treatment program for moderate to high risk sexual offenders constructed based on the RNR principles. In order to best evaluate these changes and address the limitations mentioned above the study has three main objectives. The first objective is to examine pre- to- posttreatment changes on SRMs, a psychophysiological measure, and a risk assessment measure. The second objective is to examine whether changes occurring on these measures are related to recidivism (i.e., sexual, violent, and general). The third and final objective is to compare the effectiveness of the different measures on their ability to capture treatment change and predict recidivism with these changes.

The first objective will help identify which DRFs are showing changes after treatment, and potentially shed light on the usefulness of the different treatment modules included in the program being evaluated. The evidence gathered will add to the understanding of which DRFs are benefiting most from treatment. In order to do this, pre- to- posttreatment changes will be examined on the Stable-2007 and its three dimensions; on SRMs measuring cognitive distortions

and paraphilic sexual interests; and on phallometric testing measuring pedohebephilia and rape related sexual interests.

The second objective of this study will clarify which changes on DRFs are contributing to lower or higher recidivism rates. The evidence gathered here will add to the literature on treatment change and its association to recidivism. In addition to raw change scores being used for all the measures mentioned above, a second change score will be calculated controlling for individual differences obtained on the pretreatment scores. Finally, in order to analyze whether change scores add to the predictive validity of different types of recidivism, predictive associations will be examined before and after controlling for static-risk.

The third objective will add to the literature by comparing the ability of a risk assessment measure, SRMs, and phallometric testing to capture change and have it predict lower recidivism rates. The evidence here will add to the literature on the different methods available for measuring treatment change as well as to the literature examining their validity and reliability in doing so. In order to gain this information the results obtained from the previous two objectives will be compared and contrasted. Overall, these objectives will help ascertain whether changes were occurring in important DRFs during the Centre d'Étude et de Recherche de l'Université de Montréal (CERUM) treatment program, and whether or not these changes reduced recidivism, especially sexual recidivism.

3.2 Hypotheses

Based on the objectives mentioned above, the following hypotheses are proposed. (1) There will be pre- to- posttreatment differences on the Stable-2007's total change score and its three dimensions (i.e., antisociality, sexual deviance, and hypersexuality). More specifically, the Stable-2007 posttreatment scores will be lower than the Stable-2007 pretreatment scores. (2)

There will be pre- to- posttreatment differences on the SRMs and phallometric testing. More specifically posttreatment scores will be lower than pretreatment scores. (3) The Stable-2007's total change score will be predictive of lower recidivism rates in sexual, violent, and general recidivism. More specifically, the change scores on the antisocial dimension will be more predictive of lower violent and general recidivism rates, and the sexual deviancy and hypersexuality dimension change scores will be more predictive of lower sexual recidivism rates. (4) The SRMs and phallometric change scores will predict lower sexual recidivism rates more than violent and general recidivism rates. (5) The associations between change scores and recidivism will remain after controlling for pretreatment scores. (6) After controlling for static risk, change scores on the Stable-2007 and its dimensions will maintain their predictive validity for the different types of recidivism. (7) After controlling for static risk, change scores on the SRMs and phallometric measure will maintain their predictive validity to the different types of recidivism. (8) The Stable-2007 will show greater treatment gains than the SRMs and phallometric measure as well as greater predictive validity for lower rates of recidivism.

CHAPTER 4

METHOD

4.1 Participants

Participants were 105 adult males who had served a sentence for a sexual offense in federal prison in the province of Quebec, Canada, and who had completed a sexual offense-specific outpatient treatment program following their release from prison. In order to be included in the analyses for this study, participants had to successfully complete all seven modules of the treatment program. On average the participants of this study completed the seven modules in 11.1 months (*SD* = 3.1), and the delay between admission to the program and beginning the program was less than a month (*M* = 0.9, *SD* = 3.1). The average length of incarceration for the sexual offense prior to their participation in the program was 52.5 months (*SD* = 39.6). The mean age of the sample was 46.2 years (*SD* = 12.4). The majority of the sample identified as heterosexual (82.7%, *n* = 86), followed by men identifying as homosexual (8.7%, *n* = 9), bisexual (2.9%, *n* = 3), and those who were unable to categorize their sexuality (4.8%, *n* = 5). For participants' index offense, approximately half of these men were convicted of a sexual offense against one or more child victims (46.7 %, *n* = 49), 24.8% for sexual offenses against one or more adult victims (*n* = 26), 22.9% (*n* = 24) for sexual offenses against multiple types of victims (i.e., adult, adolescent, and child victims), three for sexual offenses against adolescent victims (2.9%), and three for which the index offense was missing (2.9%). As for prior convictions, 43.8 % had been convicted for general crimes (*n* = 59), 50.5% convicted for past violent crimes (*n* = 53), and the majority convicted for sexual crimes (95.2%, *n* = 100). In addition, 29.5% had never participated in a specialized treatment program for sexual offenders before the current one (*n* = 31), 32.4% had completed such a program (*n* = 34), 18.1% had participated in such a program, but did not complete it, and data was missing for 20% of the sample (*n* = 21).

4.2 Measures

4.2.1 Static-99R

Static-99R is a risk assessment tool constructed to measure risk for sexual recidivism (Hanson & Thornton, 2000; Helmus, Hanson, Thornton, et al., 2012; see Appendix A). All items have been empirically linked to sexual recidivism in the literature. Static-99R has 10 items including offense, offender, and victim characteristics for that particular individual. All the items but two are coded with a 0 or 1 depending on whether that particular characteristic is present or not. The age-related item is coded as 1, 0, –1, or –3 depending on their current age and the sexual offense history item is coded as 0, 1, 2, or 3 depending on the number of past convictions and charges for sexual offenses. Total scores can range from –3 to 12, with higher scores indicating greater risk of recidivism: 0-1 is low risk, 2-3 is moderate-low risk, 4-5 is moderate-high risk, and 6 and over is high risk. The items are scored by trained clinicians mainly based on consultation of offenders' criminal records. In a meta-analysis conducted by Helmus, Hanson, Thornton, et al. (2012), the Static-99R significantly predicted sexual recidivism with a moderate to large effect size (AUC = .71, k = 23, n = 8,106). In another meta-analysis, Brankley et al. (2019) reported a satisfactory inter-rater reliability (ICC's ranging from .91 and .98; k = 4). For the purposes of this study, all earlier versions of the Static-99R (i.e., Static-99) were converted into the Staitc-99R by the author.

4.2.2 Stable-2007

The Stable-2007 is a risk assessment that measures dynamic risk factors (DRFs) empirically linked to sexual recidivism, that is factors that are malleable and that are open to change over time. The Stable-2007's main purpose is to predict sexual recidivism and to provide therapeutic treatment targets (Hanson et al., 2007, 2015; see Appendix B). All 13 items are

coded from 0 to 2, 0 being not at all true, 1 being partially true, and 2 being completely true, with scores ranging from 0 to 26, with higher scores indicating greater risk of recidivism. The risk is categorized into three categories with higher scores being indicative of higher risk of sexual recidivism: 0-3 is low risk, 4-11 is moderate risk, 12 and above is high risk. The items are scored by trained clinicians by means of interviews, questionnaires, phallometric testing, and consultation of offender files and criminal records. The Stable-2007 has acceptable internal consistency (α = .80) and inter-rater reliability (ICC's = .88) and moderate predictive validity (AUC = .65 to .77; Hanson et al., 2007). Brankley et al. (2019) conducted a meta-analysis to review the psychometric properties of the Stable-2007. The inter-rater relatability yielded variable results (ICC's ranging from .38 and .98; k = 4) and moderate predictive validity for sexual recidivism (AUC = .67; k = 12; n = 6.845). To specify constructs being measured by the Stable-2007, the items were further subdivided into three distinct factors used by Etzher et al. (2020) for this study: antisociality, sexual deviance, and hypersexuality. For the purposes of this study, all items for the Stable-2000 were converted to the Stable-2007 by the author using the evaluation reports written by the trained clinicians who ran the program and did the pre- and posttreatment evaluations. The official evaluations reports contained non-numerical qualitative information. In order to minimize missing data, when not enough information was available to distinguish between a score of 1 and 2, a score of 1.5 was used.

4.2.3 Molest and Rape Scale

The Molest and Rape Scale are two self-report measures (SRMs) that measure cognitive distortions in males who sexually assault children and adult females (Bumby, 1996; see Appendix C and D). The Molest Scale contains 38 items and the Rape Scale contains 36 items that use a 4-point Likert scale, ranging from "totally disagree" (1) to "strongly agree" (4), with

higher scores representing a higher presence of cognitive distortions. These scales possess satisfactory internal consistency (α = .97 for the Molest Scale and α = .96 for the Rape Scale) and test-retest reliability (r = .84 for the Molest Scale, r = .86 for the Rape scale; Bumby, 1996). For the purposes of the study, those who had a history of victims who were predominantly children were given the Molest Scale and those with predominantly adult victims were given the Rape Scale. If individuals had both adult and child victims, the scale representing the majority of their victims was used.

4.2.4 Sexual Interest Cardsort Questionnaire

The Sexual Interest Cardsort Questionnaire (Abel & Becker, 1979; see Appendix F) contains 75 items that assess for 15 typical and atypical sexual behaviors and interests. Items include sexual behaviors and interests (e.g., "I'm lying on top of my son. I feel his hot body beneath mine as I kiss his back and feel his skin") rated on a 7-point Likert scale with response items ranging from "extreme sexual repulsion" (–3) to "extreme interest" (+3), with 0 indicating neither interest or repulsion. Concurrent validity between the Sexual Interest Cardsort Questionnaire and DSM related classification categories as measured by clinicians has been found to range between .32 and .77, and it has shown to have acceptable internal consistency (α = ranging from .71 to .96; Holland et al., 2000). For the purposes of this study, only items pertaining to the presence of atypical sexual interests were examined which included the following: voyeurism, exhibitionism, frotteurism, heterosexual and homosexual pedophilia, heterosexual and homosexual incest, rape, sadism, and masochism.

4.2.5 Phallometric Testing

Phallometric testing assesses for sexual interests by measuring changes in penile circumference during the presentation of audio and visual erotic stimuli depicting different

consenting and non-consenting sexual activities between an adult male and other individuals that vary in age and sex (Kalmus & Beech, 2005). A sexual interest is said to be present when there is an increase in penile tumescence to specific stimuli mentioned above (Kalmus & Beech, 2005). The usage, validity, and variation in phallometric procedures has been subject to debate, but a more recent meta-analysis (McPhail et al., 2019) replicated its ability to measure pedohebephilic interests and predict sexual recidivism as well as its ability to differentiate between sexual offenders against children, sexual offenders against adults, nonsexual offenders, and non-offenders. Furthermore, a second older meta-analysis examining phallometric testing's ability to differentiate between adult sexual offenders and nonsexual offenders found large significant effects (d = 0.82; Lalumière & Quinsey, 1994).

The phallometric testing used for this treatment program assessed different sexual interests, including pedohebephilic, sexual assault of adult female victims, and consenting relationships between adults. During phallometric testing at the treatment program site, different audio stimuli describing "neutral", "consenting", and "non-consenting" scenarios were presented to each individual. The stimuli presented were tailored as much as possible to the individual's sexual preference. That is, if the individual's typical victim was a female child, the non-consensual scenarios described included an adult male with a female child. If they identified as heterosexual, the individual was presented with audio stimuli that depicted consensual scenarios describing a female and male sexual relationship. Different vignettes, including the tailored stimuli, were presented to each individual. For stimuli including children, the vignettes described an incestuous sexual relationship, sexual assault with and without the use of coercion, and sexual assault with the use of excessive violence. All child victims described in the vignettes were aged between eight and twelve years old. For stimuli including adult victims, vignettes described rape,

and rape with humiliation. In addition to the victim specific vignettes, vignettes describing a consensual relationship between two adults, and nonsexual violence against an adult were also included as well as neutral scenarios describing nonsexual situations (e.g., two individuals eating at a restaurant). The vignettes were all narrated in the second person by an adult male in order to allow the participant to imagine himself as being the perpetrator of the story.

The phallometric data that was available for the study combined the results into three categories: “deviant”, “non-deviant”, and “invalid”. The overall sample included individuals with child and/or adult victims; paraphilic sexual interests (PSIs) included those who demonstrated pedohebephilic interests and interests for sexual assault against adult victims. The three categories were determined by taking the average of the highest results obtained from a scenario considered deviant, that is non-consensual, and dividing it by the highest results obtained from a scenario considered non-deviant, that is consensual. The clinical staff used the following scores as cut-offs to determine the type of profile: profiles falling between 0.00 and 0.79 were considered non-deviant, and those falling at 0.80 or higher were considered deviant (Marshall & Eccles, 1991). Only those falling in the deviant category were considered as deviant for the analyses. Invalid profiles occurred when no significant change occurred in penile tumescence for any of the stimuli described, that is a change not meeting the 3-mm requirement when compared to the neutral stimuli. For the purposes of the treatment change analyses, the profiles were divided into two groups, those that showed and did not show improvement pre- to-posttreatment. The improvement group included those who had a deviant profile pretreatment and a non-deviant or invalid profile posttreatment. The unimproved group included those that maintained a deviant profile pre- to- posttreatment.

4.3 Procedure

4.3.1 Treatment Program CERUM

The outpatient treatment program was offered by Centre d'Étude et de Recherche de l'Université de Montréal (CERUM) between 1991 and 2015, and was a cognitive behavioral therapy based program using the risk, need, responsivity principles. All participants had served a sentence for a sexual offense conviction and were referred by the Correctional Service of Canada (CSC). Inclusion criteria to participate in the treatment program included: not having successfully completed a treatment program in the past that touched on the same objectives, English or French speaking, presence of PSIs, sufficient intellectual ability to be able to follow the program, basic social skills to enable them to function adequately in a group setting, at least partially admitting to their past sexual convictions, and agreement to complete the program in the 11 months before the end of their parole. In addition, to be included in the program, participants had to be considered moderate to high risk of reoffending sexually according to the Static-99 or Static-99R, depending on the period in which the evaluation was done. However, because of the nature of the crimes, certain individuals who were deemed in need of the program but who fell in the below average risk categories were sometimes included as long as the average of each group remained in the average to high risk. All participants had served a sentence in a federal correctional facility for a sexual related crime, were under different levels of federal surveillance, and on conditional release (e.g., living in transitional housing, under surveillance, being supervised by a parole officer). Some offenders were assigned to special residences designed to support sexual offenders and help with their reintegration.

Before undergoing the pretreatment evaluation, written and informed consent was obtained, which included consenting for their records to be used for research purposes (see

Appendix G for copy of consent form). The evaluation was done in four steps. The first step consisted of a semi-structured interview going through their sexual and psychosocial history from childhood to adulthood. The second step consisted of completing SRMs that assessed for sexual and personal difficulties (listed in the above measures section). The third step was dedicated to the evaluation of PSIs by means of phallometric testing. During the final step, clinicians evaluated participant's sexual recidivism risk using the Static-99 or Static-99R and Stable-2000 or Stable-2007 depending on the year of the evaluations. Following completion of treatment, participants were required to complete this same evaluation process a second time.

In 2004, the program was modified to specifically address the needs of moderate to high risk sexual offenders and went from containing eight modules to seven modules. The program included 45 weekly two-hour group meetings and monthly individual meetings. All meetings occurred in the evening to facilitate societal reintegration and did not include more than eight individuals. The program had three main treatment objectives separated into seven distinct modules. The first objective was the increase of control of paraphilic sexual behaviors and interests. This objective was separated into three modules: olfactory therapy, satiation therapy, and covert sensitization. The second objective was the deepening of participants' understanding of their sexual offenses, and was separated into two modules: cognitive restructuring and relapse prevention. The final objective was to improve social adjustment, and it was separated into two modules: sexual education and intimacy, and emotion management. The program used an open group format, so that participants could join and leave the program at the beginning and end of any module. The open group format increased the program's accessibility by reducing the time individuals had to wait to join the program. Each module had its own set of objectives and standardized exercises that had to be completed by all participants. All modules lasted five

weeks, except for the relapse prevention and sexual education modules, which lasted 10 weeks. For the purposes of the present study, only the participants that completed all seven modules of the program between its modification in 2004 and its closure in January 2015 were included.

4.3.2 Recidivism Data

Recidivism data was obtained using the *Punitive register*, which contains all judicial records of civil, criminal, and penal matters in Quebec. Recidivism was operationalized as any new conviction that occurred after a participant started the treatment program. The recidivism data was retrieved during the month of December 2021 and coded by the author. Recidivism was coded into three categories: sexual, nonsexual violent, and general recidivism. General recidivism was defined as any new conviction for any type of nonsexual and nonviolent offense, including all technical breaches (i.e., all failures to comply or all breaches of conditions mandated by the courts), and excluded all violent and sexual-related convictions. Violent recidivism was defined as any new conviction for an offense against another individual that included attempted or threatened physical or psychological harm, excluding offenses that were sexual in nature. Sexual recidivism was defined as any new conviction for a sexually motivated offense, including contact (e.g., sexual assault) and non-contact offenses (e.g., indecent exposure).

4.3.3 Planned Analyses

All data entry errors were corrected for all measures. For each measure, if more than 10% of items were missing the whole measure was excluded for that participant. For all SRMs, when there was less than 10% of the items missing the average response for that item from all participants was obtained, and used to replace the missing score. This method was used for the Molest and Rape Scale and for the Sexual Interest Cardsort Questionnaire, and affected

approximately the responses of 10 participants for each measure. All other data from the SRMs and phallometric testing were either complete or missing entirely. If missing entirely they were removed from the analyses. There was no missing data for the Static-99R and two missing posttreatment Stable-2007 evaluations.

All analyses centered around the pre- and posttreatment measures; and their respective change and residual change scores. To obtain "change scores", the posttreatment scores were subtracted from the pretreatment scores. To obtain the "residual change scores", a regression analysis was used in order to retain the residual scores (i.e., predicted change score – actual change score), which resulted in a change score that controlled for the pretreatment score. First, changes over the course of treatment were examined using paired-sample *t*-tests and the McNemar test. The magnitude of treatment change was estimated with Cohen's *ds* for all continuous scores. As a general interpretive heuristic, Cohen's *d*s that are 0.20, 0.50, and 0.80 are considered to be small, moderate, and large effects respectively (Cohen, 1992). Two different methods were used to calculate treatment effects, the first using the standard deviation difference score as the denominator and the other using the pooled standard deviation. The first, because it would more accurately reflect the variance of the difference scores, and the second because it would reflect the full variance and range of scores, especially for those on the Stable-2007. For the pair-sample *t*-tests the following assumptions were examined and met. All dependent measures used in the pair-sample *t*-tests were on a continuous scale, the independence of variance of each measure was assured by the fact that each participant completed their own SRMs, and all other measures were obtained from a clinician's evaluation. Finally, the normality of the distribution was examined by converting all pre-and posttreatment scores into *z*-scores. All *z*-scores equal to or larger than 3.29 were replaced by next highest score on that measure. On

average, one outlier was modified per pre- and posttreatment measure. For evaluating change on dichotomous variables (i.e., phallometric testing), the McNemar test was used. The assumptions were met: two dichotomous variables were used, and the groups of the dependent variable were mutually exclusive.

Second, to examine the association of pretreatment, posttreatment, and raw and residual change scores with three types of recidivism, Area Under the Curve (AUC) analyses were conducted. The AUC values represent the probability that a random selected recidivist will have a higher scale score than a randomly selected non-recidivist. Given the variability in the dates in which the program was completed (i.e., between 2004 and 2015), a variable follow-up was used for these analyses; presence of recidivism was coded regardless of the time at which it occurred after completion of treatment. Given the relatively small sample available, although confidence intervals (CI) are typically examined and whether chance (.50) is included in the CI range, a conservative approach was used and only those AUCs that had probability values of less than .05 were interpreted as significant. To interpret the significant AUC values, recommendations made by Rice and Harris (2005) were used, that is .56, .64, and .71 representing small, medium and large effects respectively. The following assumptions were met in order to proceed with AUC analyses. All independent variables were continuous, except for phallometric testing, and the dependent variable (i.e., recidivism) was dichotomous. In addition, recidivism was relatively independent of the continuous measures. For phallometric testing, the AUC values were interpreted by comparing individuals who had a deviant and non-deviant profile for both pre- and posttreatment separately. For these results, higher scores were expected to yield higher recidivism rates, therefore larger and significant AUC scores.

Third, Cox regression survival analysis was used to examine the incremental predictive

validity of residual change scores for the three different types of recidivism while controlling for static risk. Survival analysis also permits controlling for different follow up times for each participant. The Cox regressions generate a hazard ratio (e^B) in representing the change in recidivism risk occurring for each unit change on the pre- and posttreatment measures with values above 1.0 indicating a positive association and those below 1.0 indicating negative changes. The cox regression model used residual change scores for all variables, except for phallometric testing where the raw score was used, and all models controlled for Static-99R scores. When evaluating these models, it was expected that static risk scores would be associated with an increase recidivism (i.e., $e^B > 1$), whereas change scores would be associated with a decrease in recidivism (i.e., $e^B < 1$). When interpreting the results from these analyses statistical significance were the focus. The assumptions were met making sure that the survival curves had hazard functions proportional over time and that the relationships between hazard functions and each covariate was linear.

CHAPTER 5

RESULTS

The participants' follow-up time, when they ended the program to when recidivism data was extracted, was on average 12.7 years (*SD* = 3.0), with 8.6*%* (*n* = 9 of 105) convicted for a new sexual offense, 7.6*%* (*n* = 8 of 105) convicted for a new violent nonsexual offense, and 24.8% (*n* = 26 of 105) convicted for a new general offense. As for sexual recidivism risk at the start of the treatment program, the average Static-99R score was 3.6 (*SD* = 2.6), putting the sample in the average risk category. When participants' risk levels on the Static-99R were examined by risk category, 3.8 % of the sample were in the very low risk (*n* = 4), 4.8% were in the below average risk (*n* = 5), 35.2% were in the average risk (*n* = 37), 32.4% were in the above average risk (*n* = 34), and 23.8% were in the well above average risk category (*n* = 25). On the Stable-2007, the average score was 11.09 (*SD* = 3.4), also placing the sample in the average risk category. When risk levels on the Stable-2007 were examined by risk category, 50.5% fell in the moderate risk (*n* = 53) and 49.5% fell in the high risk category (*n* = 52). The average combined score of the Static-99R and Stable-2007 pretreatment put the sample in the above average risk category. The participants' respective risk category for the combined scores were as follows: 2 % in the very low risk (*n* = 1), 4.8% in the below average risk (*n* = 5), 22.9% in the average risk (*n* = 24), 41 % in the above average risk (*n* = 43), and 30.5% in the well above average risk category (*n* = 32).

Table 1 reports the results for the pair-sample *t*-tests that examined pre- and posttreatment changes. These results permitted the identification of dynamic risk factors (DRFs) showing changes, addressing the first objective and first two hypotheses of this study. As shown here, there was a statistically significant decrease in all scores related to the Stable-2007, including its three dimensions, that is anitsociality, sexual deviance, and hypersexuality. In addition, the magnitude of the changes that occurred were large in size for the Stable-2007 total

score, Stable-2007 recidivism risk category, and hypersexuality dimension (*d*s ranged from 0.83–1.25), with the largest treatment effect being from the hypersexuality dimension. Both the antisociality and sexual deviance dimensions had mostly small effect sizes (*d*s ranged from 0.45–0.56).

As for the self-report measures (SRMs), there were no significant reductions in cognitive distortions related to adult or child victims. Finally, the sample showed significant decreases from pre- to- posttreatment for the following self-reported paraphilic sexual interests (PSIs), as measured by the Sexual Interest Cardsort Questionnaire: frotteurism, heterosexual and homosexual pedophilia, heterosexual and homosexual incest, rape, and masochism. That said, the magnitude of the decreases was small (*d*s ranged from 0.05 – 0.38). A significant reduction was also observed in PSIs as measured by phallometric testing (McNemar's test $p < .001$), with the decrease being large in magnitude (Cramer's $V = .533$). This suggests that there were significant changes in the proportion of participants who were deemed to have a deviant profile, that is pedohebephilic and rape related sexual interests, from pretreatment (41.6%) to posttreatment (29.9%).

Table 1

Pre-to- Posttreatment Differences on the Multiple Measures Examining Treatment Effectiveness

Measure	Pre-treatment	Post-treatment			Cohen's *d*	
	M (*SD*)	*M* (*SD*)	*t* [95% CI]	*p*	*dSD difference*	*dpooled SD*
			Stable-2007			
Total	11.1 (3.4)	7.5 (3.5)	10.69 [2.93, 4.27]	< .001***	1.06	1.04
Antisocial	5.5 (2.7)	4.2 (2.6)	4.87 [0.78, 1.85]	< .001***	0.48	0.49
Sexual deviance	2.4 (1.2)	1.9 (1.0)	6.11 [0.36, 0.70]	< .001***	0.56	0.45
Hypersexuality	2.2 (1.3)	0.7 (1.1)	9.75 [1.18, 1.79]	< .001***	1.00	1.25
Category	2.5 (0.5)	2.0 (0.5)	8.19 [0.35, 0.57]	< .001***	0.83	1.00
			Cognitive distortions			
Molest scale	56.5 (13.8)	53.6 (13.9)	1.41 [-1.27, 7.10]	.166	0.23	0.20
Rape scale	58.5 (18.7)	54.8 (14.8)	0.95 [-4.82, 12.16]	.362	0.28	0.26
			Self-report sexual interests			
Voyeurism	-0.0 (1.5)	-0.2 (1.5)	1.28 [-0.11, 0.50]	.207	0.18	0.14
Exhibitionism	-2.2 (1.1)	-2.4 (1.0)	1.85 [-0.02, 0.44]	.069	0.25	0.19
Frotteurism	-1.7 (0.9)	-1.9 (0.7)	2.15 [0.02, 0.51]	.036*	0.33	0.33
Heterosexual pedophilia	-1.9 (1.6)	-2.3 (1.3)	2.44 [0.08, 0.79]	.018*	0.29	0.29
Homosexual pedophilia	-2.0 (1.7)	-2.6 (2.0)	2.08 [0.02, 1.04]	.042*	0.26	0.29
Heterosexual incest	-2.5 (1.1)	-2.8 (0.7)	2.06 [0.01, 0.57]	.044*	0.27	0.33
Homosexual incest	-2.5 (1.1)	-2.7 (0.8)	2.04 [0.00, 0.36]	.046*	0.29	0.19
Rape	-2.6 (0.9)	-2.8 (0.7)	2.04 [0.00, 0.34]	.046*	0.33	0.24
Sadism	-2.7 (0.7)	-2.8 (0.6)	0.47 [-0.12, 0.19]	.642	0.05	0.05
Masochism	-2.5 (1.1)	-2.7 (0.5)	2.52 [0.06, 0.49]	.015*	0.38	0.38

Note. Measures *ns* as follows: all Stable-2007 measures except for Stable-2007 risk category n = 103, Stable-2007 risk category n = 105, Molest scale n = 36, Rape scale n = 12, Voyeurism n = 56, Exhibitionism and Sadism n = 55, Frotteurism n = 52. Heterosexual and Homosexual Pedophilia n = 58, Heterosexual and Homosexual Incest, Rape, and Masochism n = 57.

*p < .05. ***p < .001

Table 2 reports the associations between the different pre- and posttreatment scores and recidivism. The majority of associations were non significant in terms of predictive accuracy for all types of recidivism. The Static-99R significantly predicted general recidivism (AUC = .78). Out of the Stable-2007 related measures, only the pretreatment scores of the total Stable-2007 and antisocial dimension significantly predicted general recidivism with effects large in magnitude (AUCs of .71 and .74 respectively). These associations were in the expected direction, that is higher scores pretreatment predicted higher levels of recidivism. When examining posttreatment scores, none of the associations were significant.

With regard to the pre- and posttreatment scores related to cognitive distortions, only the pretreatment scores on cognitive distortions pertaining to child victims were significantly related to sexual recidivism. Contrary to what was expected however, lower scores pretreatment instead of higher scores significantly predicted higher levels of sexual recidivism (AUC = .20). None of the pre- or posttreatment scores on cognitive distortions related to adult victims were significant. Table 2 also included pre- and posttreatment associations between self-report and phallometric tested PSIs and recidivism. All scores were non significant in terms of predictive accuracy.

Table 2

Predictive Accuracy of Pre- and Posttreatment Measures for Sexual, Violent, and General Recidivism

Measures	Sexual		Violent		General	
	AUC	95% CI	AUC	95% CI	AUC	95%CI
Static-99R	.61	[0.44, 0.77]	.69	[0.47, 0.90]	.78***	[0.69, 0.87]
			Stable-2007			
Stable-2007 Pretreatment						
Total	.61	[0.43, 0.79]	.60	[0.38, 0.82]	.71***	[0.61, 0.81]
Antisocial	.66	[0.54, 0.79]	.62	[0.40, 0.83]	.74***	[0.65, 0.84]
Sexual deviance	.50	[0.30, 0.71]	.40	[0.20, 0.60]	.45	[0.34, 0.57]
Hypersexuality	.51	[0.30, 0.73]	.66	[0.50, 0.83]	.53	[0.42, 0.64]
Stable-2007 Posttreatment						
Total	.45	[0.29, 0.61]	.50	[0.29, 0.71]	.58	[0.48, 0.71]
Antisocial	.42	[0.25, 0.58]	.59	[0.35, 0.82]	.60	[0.49, 0.71]
Sexual deviance	.50	[0.34, 0.67]	.39	[0.21, 0.56]	.46	[0.35, 0.58]
Hypersexuality	.49	[0.28, 0.69]	.50	[0.29, 0.72]	.59	[0.47, 0.70]
			Cognitive distortions			
Molest pretreatment	.20*	[0.00, 0.48]	.30	[0.17, 0.43]	.49	[0.29, 0.69]
Molest posttreatment	.23	[0.03, 0.43]	.84	[0.73, 0.96]	.52	[0.32, 0.71)
Rape pretreatment	.26	[0.00, 0.53]	.58	[0.30, 0.87]	.54	[0.33, 0.75]
Rape posttreatment	-	-	-	-	.43	[0.07, 0.78]
			Self-report sexual interests			
Pretreatment						
Voyeurism	.56	[0.36, 0.76]	.36	[0.15, 0.56]	.41	[0.28, 0.53]
Exhibitionism	.64	[0.47, 0.82]	.37	[0.15, 0.60]	.57	[0.44, 0.69]
Frotteurism	.58	[0.36, 0.81]	.49	[0.28, 0.71]	.62	[0.49, 0.75]
Heterosexual pedophilia	.54	[0.31, 0.77]	.34	[0.14, 0.53]	.54	[0.40, 0.67]
Homosexual pedophilia	.45	[0.25, 0.64]	.41	[0.20, 0.62]	.54	[0.41, 0.67]
Heterosexual incest	.60	[0.39, 0.80]	.45	[0.22, 0.69]	.55	[0.42, 0.68]
Homosexual incest	.45	[0.26, 0.65]	.48	[0.25, 0.71]	.53	[0.40, 0.66]
Rape	.60	[0.36, 0.84]	.57	[0.30, 0.84]	.58	[0.44, 0.71]
Sadism	.39	[0.22, 0.57]	.67	[0.42, 0.93]	.54	[0.40, 0.67]
Masochism	.50	[0.30, 0.69]	.60	[0.36, 0.85]	.50	[0.37, 0.63]
Posttreatment						
Voyeurism	.50	[0.12, 0.87]	.53	[0.20, 0.85]	.35	[0.20, 0.50]
Exhibitionism	.60	[0.25, 0.94]	.66	[0.31, 1.00]	.51	[0.35, 0.67]

Measures	Sexual		Violent		General	
	AUC	95% CI	AUC	95% CI	AUC	95% CI
Frotteurism	.54	[0.18, 0.89]	.57	[0.24, 0.90]	.42	[0.25, 0.58]
Heterosexual pedophilia	.74	[0.45, 1.00]	.45	[0.16, 0.75]	.52	[0.36, 0.69]
Homosexual pedophilia	.43	[0.19, 0.67]	.33	[0.11, 0.56]	.52	[0.36, 0.69]
Heterosexual incest	.55	[0.23, 0.88]	.40	[0.12, 0.68]	.45	[0.30, 0.61]
Homosexual incest	.51	[0.21, 0.80]	.38	[0.11, 0.64]	.50	[0.34, 0.66]
Rape	.57	[0.25, 0.89]	.79	[0.46, 1.00]	.52	[0.36, 0.68]
Sadism	.51	[0.23, 0.79]	.79	[0.44, 1.00]	.55	[0.39, 0.71]
Masochism	.42	[0.18, 0.66]	.62	[0.34, 0.90]	.42	[0.28, 0.57]
			Phallometric testing			
Phallometric testing pretreatment	.46	[0.26, 0.66]	.50	[0.25, 0.74]	.60	[0.46, 0.73]
Phallometric testing posttreatment	.43	[0.22, 0.65]	.70	[0.34, 1.00]	.57	[0.42, 0.72]

Note. AUC = Area under the receiver operating curve; CI = confidence interval. Measures *ns* as follows: Static-99R $n = 105$, Stable-2007 related measures Pre $n = 105$ and Post $n = 103$, Molest Pre $n = 48$, Molest Post $n = 39$, Rape Pre $n = 31$, Rape Post $n = 13$, Measures *ns* as follows for pretreatment scores: Voyeurism, Homosexual Incest, and Rape $n = 83$, Exhibitionism $n = 81$, Heterosexual and Homosexual Pedophilia, Heterosexual Incest, and Masochism $n = 84$, Frotteurism $n = 78$, and Sadism $n = 82$. Measures *ns* as follows for posttreatment scores: Voyeurism, Heterosexual and Homosexual Pedophilia, Heterosexual Incest, Sadism, and Masochism $n = 63$, Exhibitionism, Homosexual Incest, and Rape $n = 64$. Frotteurism $n = 61$. Phallometric testing pretreatment $n = 67$ and posttreatment $n = 57$.

***$p < .001$

Table 3 reports the predictive relationships between raw and residual change scores and recidivism. These results are the first step in clarifying which changes on DRFs are contributing to lower or higher rates of recidivism, the second objective of the study. They also pertain to the third, fourth, and fifth hypotheses examining the associations between change and residual change scores and recidivism. As a reminder, larger raw and residual change scores represent an improvement from pre- to- posttreatment on the different measures. Therefore, for these results, smaller raw and residual change scores were expected to yield higher recidivism rates. Overall, the predictive accuracies for the majority of change scores were non significant. When examining the relationships between raw change scores on the Stable-2007 related measures and recidivism, only antisociality was significantly predictive of lower sexual and general recidivism rates with effects moderate in magnitude (AUCs of .28 and .34 respectively). When residual change scores were examined for the Stable-2007 related measures, only the residual change scores for the antisocial dimension significantly predicted lower rates of sexual recidivism with effects moderate in magnitude (AUC = .30). All other association were non significant for residual change scores.

As for the SRMs, both raw and residual change scores for cognitive distortions pertaining to adult and child victims were non significantly associated with any type of recidivism. Due to the lack of violent recidivism in this group no associations were reported for violent recidivism. When examining PSIs as measured by SRMs, all associations between raw and residual change scores and recidivism were non significant except for the association between raw change scores on masochism and violent recidivism (AUC of .13) This association was in the expected direction, that is positive change was associated with lower violent recidivism rates. However, the significance and relationship disappeared when residual change scores were used (AUC =

.51). The residual change scores for PSI's as measured by phallometric testing were unable to be calculated due to the categorical nature of the variable, therefore only the associations between raw change scores on phallometric testing and recidivism are depicted in Table 3. None of the associations between change scores on phallometric testing and recidivism were significant.

Table 3

Predictive Accuracy of Raw and Residual Change Scores for Sexual, Violent, and General Recidivism

Measures	Sexual		Violent		General	
	AUC	95% CI	AUC	95% CI	AUC	95%CI
			Raw change score			
Stable-2007						
Total	.36	[0.17, 0.54]	.37	[0.14, 0.60]	.40	[0.28, 0.52]
Antisocial	.28*	[0.10, 0.46]	.43	[0.20, 0.65]	.34**	[0.22, 0.45]
Sexual Deviance	.48	[0.26, 0.70]	.51	[0.31, 0.71]	.48	[0.36, 0.60]
Hypersexuality	.55	[0.37, 0.72]	.37	[0.20, 0.54]	.56	[0.44,0.68]
Cogntive distortions						
Molest scale	.75	[0.55, 0.95]	-	-	.43	[0.23, 0.64]
Rape scale	-	-	.36	[0.08, 0.65]	.29	[0.00, 0.59]
Self-report sexual interests						
Voyeurism	.27	[0.08, 0.46]	.57	[0.32, 0.82]	.47	[0.30, 0.64]
Exhibitionism	.43	[0.14, 0.71]	.61	[0.24, 0.98]	.48	[0.31, 0.65]
Frotteurism	.35	[0.07, 0.63]	.53	[0.37, 0.69]	.38	[0.22, 0.55]
Heterosexual pedophilia	.45	[0.19, 0.71]	.44	[0.18, 0.70]	.45	[0.29, 0.62]
Homosexual pedophilia	.41	[0.15, 0.68]	.38	[0.07, 0.68]	.37	[0.22, 0.53]
Heterosexual incest	.33	[0.07, 0.58]	.37	[0.05, 0.69]	.44	[0.28, 0.60]
Homosexual incest	.43	[0.14, 0.71]	.37	[0.03, 0.72]	.45	[0.29, 0.62]
Rape	.48	[0.20, 0.76]	.13	[0.04, 0.22]	.51	[0.35, 0.67]
Sadism	.62	[0.35, 0.88]	.20	[0.00, 0.49]	.55	[0.38, 0.72]
Masochism	.39	[0.17, 0.62]	.13*	[0.03, 0.23]	.48	[0.31, 0.65]
Phallometric change	.45	[0.22, 0.69]	.36	[0.09, 0.63]	.51	[0.34, 0.69]
			Residual change score			
Stable-2007						
Total	.36	[0.19, 0.53]	.43	[0.18, 0.68]	.48	[0.35, 0.60]
Antisocial	.30*	[0.12, 0.47]	.53	[0.29, 0.77]	.47	[0.35, 0.59]
Sexual Deviance	.44	[0.23, 0.64]	.54	[0.33, 0.74]	.39	[0.28, 0.50]
Hypersexuality	.53	[0.35, 0.72]	.46	[0.24, 0.67]	.58	[0.46, 0.70]
Cognitive distortions						
Molest scale	.58	[0.31, 0.85]	-	-	.44	[0.23, 0.65]
Rape scale	-	-	.82	[0.59, 1.00]	.29	[0.00, 0.63]

Measures	Sexual		Violent		General	
	AUC	95%CI	AUC	95%CI	AUC	95%CI
Self-report sexual interests						
Voyeurism	.34	[0.07, 0.61]	.50	[0.22, 0.79]	.42	[0.26, 0.59]
Exhibitionism	.55	[0.20, 0.91]	.71	[0.44, 0.97]	.53	[0.36, 0.70]
Frotteurism	.49	[0.13, 0.85]	.67	[0.44, 0.90]	.43	[0.25, 0.60]
Heterosexual pedophilia	.77	[0.58, 0.97]	.39	[0.20, 0.59]	.53	[0.35, 0.69]
Homosexual pedophilia	.36	[0.12, 0.60]	.33	[0.05, 0.60]	.54	[0.37, 0.71]
Heterosexual incest	.44	[0.07, 0.80]	.35	[0.04, 0.66]	.45	[0.28, 0.62]
Homosexual incest	.38	[0.13, 0.62]	.32	[0.01, 0.63]	.52	[0.35, 0.69]
Rape	.65	[0.38, 0.93]	.55	[0.00, 1.00]	.58	[0.42, 0.74]
Sadism	.56	[0.30, 0.82]	.64	[0.17, 1.00]	.60	[0.43, 0.77]
Masochism	.41	[0.15, 0.66]	.51	[0.13, 0.88]	.41	[0.25, 0.56]
Phallometric change	-	-	-	-	-	-

Note. AUC = Area under the receiver operating curve; CI = confidence interval. Measures *ns* as follows: Stables related Measures $n = 103$, Molest $n = 36$, Rape $n = 12$, Voyeurism $n = 56$, Exhibitionism and Sadism $n = 55$, Frotteurism $n = 52$, Heterosexual and Homosexual Pedophilia $n = 58$, Heterosexual and Homosexual Incest, Rape and Masochism $n = 57$, Phallometric Testing $n = 45$.
$^{*}p < .05$. $^{**}p < .01$.

Table 4, 5, 6, and 7 report the results of the Cox regression survival analysis examining the predictive validity of residual change scores after controlling for static risk using the Static-99R. These results are the final step in clarifying which changes on DRFs are contributing to lower or higher rates of recidivism, the second objective of the study. They also pertain to the sixth and seventh hypotheses examining the associations between residual change scores and recidivism after controlling for pretreatment risk. For residual change scores, a hazard ratio that was less than 1.0 was expected, indicating that as the change scores increased, recidivism rates decreased. Table 4 includes all models pertaining to sexual recidivism.

None of the residual change scores pertaining to the Static-99R scores or the Stable-2007 change scores significantly predicted recidivism rates. When examining SRMs of cognitive distortions, only those pertaining to child victims were calculated because of the absence of sexual recidivism in the adult victim cognitive distortion group. After controlling for static risk, residual change scores were non significantly predictive of sexual recidivism. As for PSIs as measured by self-report, none of the residual change scores significantly predicted sexual recidivism after controlling for static risk. The association between change scores on PSIs as measured by phallometric testing are depicted in Table 5. The association between change scores and sexual recidivism was non significant.

Table 4

Cox Regression Survival Analysis: Incremental Validity of Residual Change Scores for Sexual Recidivism Outcomes Controlling for Pretreatment Risk

Regression model (1-16)	*B*	*SE*	Wald	*p*	e^B	95% CI
			Stable-2007			
Model 1						
Static-99R	0.14	0.12	1.28	.258	1.15	[0.90, 1.47]
Total	0.48	0.34	1.96	.163	1.61	[0.83, 3.13]
Model 2						
Static-99R	0.13	0.12	1.10	.293	1.14	[0.89, 1.45]
Antisocial	0.66	0.40	2.74	.098	1.93	[0.89, 4.18]
Model 3						
Static-99R	0.14	0.13	1.19	.276	1.15	[0.90, 1.47]
Sexual deviance	0.14	0.35	0.17	.681	1.15	[0.59, 2.27]
Model 4						
Static-99R	0.14	0.14	1.11	.293	1.16	[0.89, 1.51]
Hypersexuality	0.05	0.35	0.02	.877	1.06	[0.54, 2.08]
			Cognitive distortions			
Model 5						
Static-99R	0.26	0.22	1.41	.234	1.29	[0.85, 1.97]
Molest	-0.15	0.60	0.06	.808	0.86	[0.27, 2.79]
Model 6						
Static-99R	-	-	-	-	-	-
Rape	-	-	-	-	-	-
			Self-report sexual interests			
Model 7						
Static-99R	0.19	0.19	0.96	.328	1.21	[0.83, 1.76]
Voyeurism	0.57	0.49	1.36	.243	1.77	[0.68, 4.60]
Model 8						
Static-99R	0.15	0.19	0.63	.429	1.17	[0.80, 1.70]
Exhibitionism	-0.29	0.44	0.44	.508	0.75	[0.32, 1.77]
Model 9						
Static-99R	0.17	0.20	0.75	.387	1.19	[0.80, 1.76]
Frotteurism	0.03	0.49	0.00	.953	1.03	[0.39, 2.71]
Model 10						
Static-99R	0.25	0.23	1.19	.275	1.28	[0.82, 1.99]
Heterosexual pedophilia	-0.78	0.45	3.01	.083	0.46	[0.19, 1.11]
Model 11						
Static-99R	0.20	0.20	0.97	.325	1.22	[0.82, 1.80]
Homosexual pedophilia	0.14	0.40	0.12	.725	1.15	[0.52, 2.55]
Model 12						
Static-99R	0.21	0.21	0.99	.320	1.23	[0.82, 1.85]
Heterosexual incest	-0.41	0.32	1.67	.197	0.67	[0.36, 1.23]
Model 13						
Static-99R	0.19	0.20	0.92	.338	1.21	[0.82, 1.77]
Homosexual incest	0.11	0.47	0.06	.815	1.12	[0.45, 2.80]

Regression model (1-16)	*B*	*SE*	Wald	*p*	e^B	95% CI
Model 14						
Static-99R	0.16	0.20	0.65	.421	1.17	[0.80, 1.72]
Rape	-0.45	0.36	1.53	.217	0.64	[0.32, 1.30]
Model 15						
Static-99R	0.19	0.21	0.85	.357	1.21	[0.80, 1.83]
Sadism	0.17	0.61	0.08	.782	1.18	[0.36, 3.90]
Model 16						
Static-99R	0.19	0.20	0.93	.335	1.21	[0.82, 1.78]
Masochism	0.31	0.48	0.40	.525	1.36	[0.53, 3.50]

Note. CI = confidence interval. Measures *ns* as follows: Stable-2007 and dimensions $n = 103$, Molest scale $n = 36$, Rape scale $n = 12$, Voyeurism $n = 56$, Exhibitionism and Sadism $n = 55$, Frotteurism $n = 52$, Heterosexual and Homosexual Pedophilia $n = 58$, Heterosexual and Homosexual Incest, Rape and Masochism $n = 57$.

Table 5

Cox Regression Survival Analysis: Incremental Validity of Improvement on Phallometric Testing for Sexual, Violent, and General Recidivism Outcomes, Controlling for Pretreatment Risk (n = 45)

Regression model (1-3)	*B*	*SE*	Wald	*p*	e^B	95% CI
				Sexual		
Model 1						
Static-99R	0.08	0.14	0.31	.580	1.08	[0.82, 1.41]
Phallometric change	-0.38	0.76	0.24	.622	0.69	[0.15, 3.07]
				Violent		
Model 2						
Static-99R	0.39	0.22	3.21	.073	1.48	[0.96, 2.28]
Phallometric change	-1.36	1.16	1.36	.244	0.26	[0.03, 2.53]
				General		
Model 3						
Static-99R	0.31	0.09	13.03	< .001***	1.37	[1.15, 1.62]
Phallometric change	-0.09	0.40	0.04	.833	0.92	[0.42, 2.02]

Note. AUC = Area under the receiver operating curve; CI = confidence interval
***$p < .001$.

Table 6 contains all Cox regression models pertaining to violent recidivism. Although all Static-99R scores were significantly and uniquely predictive of higher rates of violent recidivism for the Stable-2007 related measures (e^B of 1.34 and 1.41 respectively), none of the Stable-2007 related residual change scores were. As for SRMs measuring cognitive distortions related to both adult and child victims no results were obtained because of the low rates and/or absence of violent recidivism in these groups. When examining PSIs as measured by self-report, more than half of the Static-99R scores in the models were significantly and uniquely predictive of increases in violent recidivism rates (e^B ranging from 2.65 to 2.93). However, there were no significant hazard ratios for the residual change scores on any of the different PSIs. Finally, change scores for PSIs as measured by phallometric testing, depicted in Table 5, were non significant.

Table 6

Cox Regression Survival Analysis: Incremental Validity of Residual Change Scores for Violent Recidivism Outcomes Controlling for Pretreatment Risk

Regression model (1-16)	*B*	*SE*	Wald	*p*	e^B	95% CI
				Stable-2007		
Model 1						
Static-99R	0.30	0.14	4.55	.033*	1.34	[1.02, 1.76]
Total	0.26	0.33	0.60	.438	1.29	[0.68, 2.47]
Model 2						
Static-99R	0.29	0.14	4.34	.037*	1.34	[1.02, 1.77]
Antisocial	-0.18	0.32	0.31	.579	0.84	[0.45, 1.57]
Model 3						
Static-99R	0.29	0.14	4.37	.037*	1.34	[1.02, 1.76]
Sexual deviance	0.11	0.39	0.07	.786	1.11	[0.52, 2.39]
Model 4						
Static-99R	0.35	0.16	4.97	.026*	1.41	[1.04, 1.92]
Hypersexuality	0.31	0.37	0.73	.390	1.37	[0.67, 2.81]
				Cognitive distortions		
Model 5						
Static-99R	-	-	-	-	-	-
Molest scale	-	-	-	-	-	-
Model 6						
Static-99R	-	-	-	-	-	-
Rape scale	-	-	-	-	-	-
				Self-report sexual interests		
Model 7						
Static-99R	1.03	0.45	5.34	.021*	2.81	[1.17, 6.74]
Voyeurism	0.02	0.57	0.00	.978	1.02	[0.33, 3.09]
Model 8						
Static-99R	1.05	0.56	3.57	.059	2.86	[0.96, 8.48]
Exhibitionism	0.03	0.42	0.01	.943	1.03	[0.45, 2.36]
Model 9						
Static-99R	1.07	0.49	4.75	.029*	2.93	[1.11, 7.69]
Frotteurism	-0.27	0.53	0.27	.606	0.76	[0.27, 2.15]
Model 10						
Static-99R	1.05	0.44	5.63	.018*	2.85	[1.20, 6.78]
Heterosexual pedophilia	-0.10	0.59	0.03	.873	0.91	[0.28, 2.91]
Model 11						
Static-99R	1.07	0.46	5.52	.019*	2.92	[1.19, 7.12]
Homosexual pedophilia	0.57	0.76	0.56	.453	1.77	[0.40, 7.93]
Model 12						
Static-99R	0.97	0.45	4.66	.031*	2.65	[1.09, 6.42]
Heterosexual incest	0.50	0.90	0.30	.581	1.64	[0.28, 9.59]
Model 13						
Static-99R	1.08	0.46	5.44	.020*	2.93	[1.19, 7.24]
Homosexual incest	1.40	0.89	2.51	.113	4.07	[0.72, 23.07]

Regression model (1-16)	*B*	*SE*	Wald	*p*	e^B	95% CI
Model 14						
Static-99R	0.82	0.57	2.03	.115	2.27	[0.74, 6.98]
Rape	-0.21	0.60	0.12	.729	0.81	[0.25, 2.62]
Model 15						
Static-99R	1.15	0.70	2.75	.097	3.17	[0.81, 12.35]
Sadism	0.23	0.91	0.06	.801	1.26	[0.21, 7.54]
Model 16						
Static-99R	1.06	0.44	5.80	.016*	2.88	[1.22, 6.80]
Masochism	0.92	0.80	1.35	.246	2.52	[0.53, 11.98]

Note. CI = confidence interval. Measures *ns* as follows: Stable-2007 and dimensions *n* = 103, Molest scal *n* = 36, Rape scale *n* = 12, Voyeurism *n* = 56, Exhibitionism and Sadism *n* = 55, Frotteurism *n* = 52, Heterosexual and Homosexual Pedophilia *n* = 58, Heterosexual and Homosexual Incest, Rape and Masochism *n* = 57.

*$p < .05$.

Table 7 contains all Cox regression models pertaining to general recidivism. Almost all the Static-99R scores were significantly and uniquely predictive of higher rates of general recidivism (e^B ranging from 1.33 to 1.52). As for the Stable-2007 related measures, none of the hazard ratios were significant. When examining the SRMs pertaining to cognitive distortions none of the hazard ratios were significant. The majority of self-report PSIs residual change scores did not have significant hazard ratios. Masochism was the only PSI to have a significant hazard ratio after controlling for static risk but in the unexpected direction ($e^B = 1.88$), that is residual change scores predicting higher rates of general recidivism. Finally, change scores for PSIs as measured by phallometric testing, depicted in Table 5, were non significant.

In order to compare the ability of the Stable-2007, SRMs, and phallometric testing to capture change and have it predict lower recidivism rates (i.e., the third objective of the study) and address the final hypothesis, the results mentioned above were qualitatively compared using the tables above and subsequently discussed in the next section.

Table 7

Cox Regression Survival Analysis: Incremental Validity of Residual Change Scores for General Recidivism Outcomes Controlling for Pretreatment Risk

Regression model (1-16)	*B*	*SE*	Wald	*p*	e^B	95% CI
			Stable-2007			
Model 1						
Static-99R	0.33	0.07	21.39	< .001***	1.39	[1.21, 1.60]
Total	0.08	0.15	0.28	.600	1.08	[0.80, 1.46]
Model 2						
Static-99R	0.33	0.07	21.05	.001***	1.39	[1.21, 1.60]
Antisocial	0.05	0.16	0.09	.762	1.05	[0.77, 1.43]
Model 3						
Static-99R	0.33	0.07	21.04	< .001***	1.39	[1.21, 1.60]
Sexual deviance	0.14	0.18	0.57	.452	1.15	[0.81, 1.63]
Model 4						
Static-99R	0.30	0.08	16.22	< .001***	1.35	[1.17, 1.56]
Hypersexuality	-0.20	0.16	1.53	.216	0.82	[0.60, 1.12]
			Cognitive distortions			
Model 5						
Static-99R	0.42	0.14	8.99	.003***	1.52	[1.16, 2.00]
Molest scale	0.26	0.52	0.25	.614	1.30	[0.47, 3.56]
Model 6						
Static-99R	0.11	0.26	0.18	.669	1.12	[0.68, 1.84]
Rape scale	0.85	0.73	1.35	.246	2.34	[0.56, 9.86]
			Self-report sexual interests			
Model 7						
Static-99R	0.29	0.10	8.59	.003**	1.34	[1.10, 1.62]
Voyeurism	0.30	0.24	1.68	.195	1.36	[0.86, 2.15]
Model 8						
Static-99R	0.29	0.10	8.31	.004**	1.34	[1.10, 1.63]
Exhibitionism	-0.07	0.22	0.09	.767	0.94	[0.61, 1.44]
Model 9						
Static-99R	0.31	0.10	8.61	.003**	1.36	[1.11, 1.67]
Frotteurism	0.16	0.24	0.42	.518	1.17	[0.73, 1.88]
Model 10						
Static-99R	0.34	0.11	9.60	.002**	1.40	[1.13, 1.74]
Heterosexual pedophilia	-0.26	0.23	1.33	.250	0.77	[0.49, 1.20]
Model 11						
Static-99R	0.32	0.11	9.37	.002**	1.38	[1.12, 1.69]
Homosexual pedophilia	-0.47	0.48	0.95	.330	0.63	[0.25, 1.60]
Model 12						
Static-99R	0.34	0.11	9.47	.002**	1.40	[1.13, 1.73]
Heterosexual incest	-0.13	0.21	0.38	.536	0.88	[0.58, 1.33]
Model 13						
Static-99R	0.34	0.11	9.47	.002**	1.40	[1.13, 1.73]
Homosexual incest	-0.29	0.26	0.69	.406	0.79	[0.45, 1.38]

Regression model (1-16)	*B*	*SE*	Wald	*p*	e^B	95% CI
Model 14						
Static-99R	0.29	0.11	7.58	.006**	1.33	[1.09, 1.63]
Rape	-0.12	0.21	0.34	.558	0.88	[0.58, 1.34]
Model 15						
Static-99R	0.33	0.11	9.68	.003**	1.39	[1.13, 1.71]
Sadism	-0.14	0.27	0.28	.595	0.87	[0.51, 1.47]
Model 16						
Static-99R	0.32	0.10	10.40	.001**	1.37	[1.13, 1.66]
Masochism	0.63	0.29	4.76	.029*	1.88	[1.07, 3.31]

Note. CI = confidence interval. Measures *ns* as follows: Stable-2007 and dimensions $n = 103$, Molest scale $n = 36$, Rape scale $n = 12$, Voyeurism $n = 56$, Exhibitionism and Sadism $n = 55$, Frotteurism $n = 52$, Heterosexual and Homosexual Pedophilia $n = 58$, Heterosexual and Homosexual Incest, Rape and Masochism $n = 57$.
*$p < .05$. **$p < .01$. ***$p < .001$

CHAPTER 6

DISCUSSION

A review of the past literature established the importance of evaluating treatment effectiveness in programs designed to reduce recidivism rates in sexual offenders (e.g., Beggs & Grace, 2011; Harrison et al., 2020; Kim et al., 2016; Olver et al., 2020; Schmucker & Lösel, 2015; Soldino et al., 2017; Sowden & Olver, 2017). One way treatment effectiveness can be evaluated is via changes in dynamic risk factors (DRFs) from pre- to- posttreatment. Although there is a body of literature on DRFs and those most related to sexual recidivism (e.g., Beech et al., 2002; Hanson & Bussière, 1998; Hanson & Harris, 2000; Hanson & Morton-Bourgon, 2005; Helmus et al., 2013; Hudson et al., 2002; Mann et al., 2010; Thornton, 2002), research based on changes in DRFs occurring during treatment and its relationship with recidivism remains in its early stages. Moreover, the majority of these studies have focused on a single measure of DRFs: Violence Risk Scale-Sexual Offender Version (VRS-SO; Beggs & Grace, 2011; Olver et al., 2007, 2014, 2020; Sowden & Olver, 2017). Consequently, little is known about other methods of measuring DRFs and their capacity to evaluate these changes. To contribute and expand on the existing literature, the current study aimed to evaluate changes occurring during treatment by assessing treatment change in DRFs and its relationship to sexual, violent, and general recidivism rates. In this context, there were three main objectives. First, to examine pre- to-posttreatment changes on various DRFs (e.g., cognitive distortions and Paraphilic Sexual Interests [PSIs]). Second, to examine the relationship between treatment changes and posttreatment recidivism rates. Lastly, to compare findings from the first two objectives on different methods of measurement, including a dynamic risk assessment measure, self-report measures (SRMs), and phallometric testing. The specific study hypotheses are reviewed and discussed in the following section. The results relating to the Stable-2007 are discussed first followed by those pertaining to cognitive distortions and PSIs.

6.1 Stable-2007

6.1.1 Treatment Changes on the Stable-2007

Significant changes from pre- to- posttreatment on all three dimensions of the Stable-2007 were found. Specifically, there were large gains on the hypersexuality dimension, moderate gains on the sexual deviance dimension, and small gains for the antisocial dimension. Accordingly, the total Stable-2007 score had a large positive treatment effect. These results support the first hypothesis of this study. The changes observed on the total score are similar to the large positive changes observed in the only other study examining pre- to- posttreatment changes on the Stable-2007 (Sowden & Olver, 2017). Although there are no other studies examining pre- and posttreatment changes on the different Stable-2007 dimensions, there is literature focused on pre- to- posttreatment changes using the VRS-SO dimensions. Two of these dimensions (i.e., criminality and sexual deviance) bare some similarity to the antisociality and sexual deviance dimensions found on the Stable-2007. In the context of limited research on the Stable-2007, conservative comparisons between the Stable-2007 and VRS-SO were made. Similar to the current study, Sowden and Olver (2017) found significant but small decreases in the criminality dimension on the VRS-SO. The authors also found a small positive treatment effect for the sexual deviance dimension on the VRS-SO, which is in contrast to the current study which found a moderate positive treatment effect. One possible explanation for this discrepancy may be the content of the treatment programs. The current study evaluated the Centre d'Étude et de Recherche de l'Université de Montréal (CERUM) program, which included three modules dedicated to the control of PSIs. In contrast, the Clearwater program evaluated in the Sowden and Olver (2017) study had only one such module. Therefore, it is plausible that dedicating greater time and focus to the control of PSIs in programs for sexual offenders may

prove beneficial in creating positive changes in this important DRF. Overall, the findings seem to support the ability of Stable-2007 to capture treatment change occurring in multiple DRFs and suggest that the CERUM program was instrumental in these changes.

6.1.2 Associations of Pre- and Posttreatment Scores on the Stable-2007 with Recidivism

The findings examining the association between pre- and posttreatment scores individually on the Stable-2007 with different types of recidivism were mixed. Neither pre- or posttreatment scores on the Stable-2007 significantly predicted higher rates of sexual or violent recidivism in the current study. The significant moderate predictive relationships between higher pretreatment scores on the total Stable-2007 and antisocial dimension scores and general recidivism rates were the only significant associations found. This contradicts results obtained from the majority of past research examining the predictive relationship between total scores on the Stable-2007 and sexual and violent recidivism, which demonstrates a strong predictive relationship between higher scores on the Stable-2007 and sexual/violent recidivism (Hanson et al., 2007; Eher et al., 2012; Etzler et al., 2020). On the other hand, the significant relationship found with general recidivism is similar to past research (e.g., Hanson et al., 2007; Etzler et al., 2020; Sowden & Olver, 2017).

The only study to have examined the relationship between both pre- and posttreatment scores on the Stable-2007 and recidivism is the Sowden and Olver (2017) study. While positive associations between pre- and posttreatment scores on the Stable-2007 and nonsexual violent, violent and general recidivism were found, there was no significant relationship established between pre- and posttreatment scores and sexual recidivism (Sowden & Olver, 2017), which is somewhat consistent with the current results. However, Stable-2007 posttreatment scores did not have a predictive relationship with higher rates of general recidivism in the current study, which

contradicts findings in Sowden and Olver's (2017) study which demonstrated a positive predictive association between Stable-2007 posttreatment scores and general recidivism.

Only one study to date has examined the predictive validity of the three Stable-2007 dimensions on recidivism (Etzler et al., 2020). These scores were not obtained in the context of treatment, therefore will only be compared to the pretreatment scores of the current study. That said, given the lack of research and greater sample size in the Etzler et al. (2020) study compared to the current study, interpretations of the following results should be made with caution. Results from Etzler et al. (2020) indicated small to moderate predictive relationships between the antisocially and sexual deviance dimensions and higher rates of recidivism but for all types of recidivism (i.e., sexual, nonsexual violent and general recidivism), whereas the current study only found this association between antisociality and general recidivism. Similarly, neither the current study or the Etzler et al. (2020) study found a significant relationship between hypersexuality and recidivism.

For further comparison, there is another study that examined the predictive relationship of pre- and posttreatment scores with recidivism on the equivalent VRS-SO's dimensions (Sowden & Olver, 2017). In contradiction with the current findings examining pretreatment scores, the VRS-SO's criminality dimension pretreatment scores had significant moderate to large predictive relationships with all types of recidivism (i.e., sexual, nonsexual violent, and general; Sowden & Olver, 2017) not just with general recidivism. Furthermore, higher pretreatment scores on the sexual deviance dimension significantly predicted lower rates of nonsexual violent and general recidivism, with small to moderate relationships (Sowden & Olver, 2017).

None of the posttreatment scores of the three dimensions had significant predictive

relationships with the three types of recidivism in the current study. No studies to date have examined posttreatment scores on the Stable-2007 dimensions and posttreatment recidivism rates, therefore comparisons with the VRS-SO were made given that it is also a risk assessment measure and has similar dimensions as demonstrated earlier. In contradiction with the current findings examining the posttreatment scores, the VRS-SO's criminality dimension posttreatment score had significant moderate to large predictive relationships with all types of recidivism (i.e., sexual, nonsexual violent, and general; Sowden & Olver, 2017). Although the Eher et al. study (2012) used an incarcerated sample, the Stable-2007 was used while the sexual offenders were incarcerated. Their sample did not follow a treatment program upon release, and whether or not they followed a treatment program while incarcerated was not controlled for, potentially increasing the association between pretreatment scores and recidivism.

6.1.3 Predictive and Incremental Validity of Change Scores on the Stable-2007

It was hypothesized that the total change scores on the Stable-2007 would be predictive of lower rates of sexual, violent, and general recidivism. With regards to the individual dimensions, it was hypothesized that the antisocial dimension change score would predict lower violent and general recidivism to a greater extent than sexual recidivism, and that the sexual deviancy and hypersexuality change scores would predict lower sexual recidivism to a greater extent than violent and general recidivism. It was further hypothesized that these predictive associations would remain after controlling for pretreatment scores and that they would add incremental predictive value after controlling for static risk. It was also hypothesized that associations would remain once controlling for static risk and pretreatment scores. Overall, the results did not support the above hypotheses (as detailed below).

In terms of the total Stable-2007 change score, the raw and residual change scores did not

significantly predict lower recidivism rates. When examining incremental validity controlling for pretreatment risk, no associations between the Stable-2007 total residual score and recidivism were significant. These findings are similar to those obtained by Sowden and Olver (2017), with findings indicating that raw total change scores on the Stable-2007 do not predict lower rates of any type of recidivism after controlling for static risk. The pattern of results obtained for the Stable-2007 total change scores are not consistent with findings using the VRS-SO. Beggs and Grace (2011) demonstrated that the VRS-SO total dynamic change score alone significantly predicted lower levels of sexual recidivism after controlling for static and pretreatment risk. When comparing results to those found in the Olver et al. (2020) study, there was no predictive relationship between raw change scores and all types of recidivism similar to the current study. Different from the current results, when residual change scores were used almost all predictive associations were significant will all types of recidivism, and incremental validity demonstrated significant predictive validity between change scores on the VRS-SO total dynamic score and all recidivism except for general recidivism (Olver et al., 2020).

The raw and residual change scores of the antisocial dimension significantly predicted lower levels of sexual recidivism, and raw change scores lower levels of general recidivism, but no other associations with recidivism were significant. In addition, no significant associations were found between residual change scores on the Stable-2007 dimensions and recidivism when controlling for static risk. As previously mentioned, there is no past research examining change scores on the different Stable-2007 dimensions. Therefore, comparisons will once again be made between the current results and similar dimensions on the VRS-SO. Beggs and Grace (2011) examined the predictive validity of raw change scores on the VRS-SO's dimensions on sexual recidivism. Based on their results, it was the sexual deviance dimension, and not the criminality

dimension, that predicted lower rates of sexual recidivism. While this is in contrast with the current finding that positive changes in the antisocial dimension are associated with lower sexual recidivism rates, it is possible that this discrepancy is due to the use of raw versus residual change scores. Indeed, a later study examined the predictive validity of the three VRS-SO dimensions using raw and residual change scores, and all three of their dimensions were significantly related to lower sexual, violent, and general recidivism rates when residual scores were used (Olver et al., 2020). This is in contrast with the current findings as well as results from the Sowden and Olver study (2017) which also examined specific associations between the VRS-SO individual dimensions and the different types of recidivism. There are no studies examining incremental validity of the dimension scores of the Stable-2007 and VRS-SO to date, which limits our ability to draw comparisons and highlights an important gap in the literature.

6.1.4 Possible Explanations for Stable-2007 Results

The above findings highlight several important points that warrant further discussion. The first, is that the current findings provide the first preliminary evidence of the potential usefulness of the Stable-2007 dimensions in evaluating changes occurring during treatment. The majority of findings did not reach statistical significance. Furthermore, there were important differences in the findings between dimensions. Had dimensions not been used, important information on the treatment usefulness in addressing certain DRFs would have been lost. These findings highlight the importance of being able to more specifically evaluate the changes occurring in DRFs in treatment programs to maximize their effectiveness.

The second important, yet surprising, finding that warrants further discussion pertains to the sexual deviancy dimension. While significant, improvements were small from pre- to-posttreatment on this dimension, and it had no significant associations with recidivism. This

dimension had been hypothesized to be highly associated with lower sexual recidivism rates, especially because three of the treatment modules were directly targeting this DRF (i.e., olfactory therapy, covert sensitization, and satiation therapy). However, the current findings did not support this hypothesis. One possible explanation for this result may be related to the way sexual deviancy is measured on the Stable-2007. To score an improvement on the item pertaining to PSIs, the individual must have been in an appropriate consensual sexual relationship for a minimum of one year or have not exhibited behavioral indicators of PSIs for two years. For the first criteria, the individual would have had to have already been in an appropriate consensual relationship when beginning the treatment program and have maintained it during the whole length of treatment in order to show improvement. The chances of this occurring in this population and within these circumstances are low given the well-established research highlighting the difficulty sexual offenders have in forming and maintaining stable intimate relationships (Aubut et al., 1998; Bumby & Hansen, 1997; Hudson et al., 1998; McKibben et al., 1994; Ward et al, 1997). Moreover, the post evaluations occurred within a year of the pre-evaluations, making it impossible to meet the second criteria of the first item. The second item in this dimension, emotional identification with children, is only coded for individuals with child victims. A little less than half the current sample had adult victims, making this item inapplicable for these individuals. In sum, the results for the sexual deviancy dimension are likely a consequence of limitations in its measurement, and thus interpretations of these results should be made with caution.

It is important to also consider certain psychometric properties of the Stable-2007 that may have influenced other results, namely the discrepancy in the number of items comprising each dimension. Specifically, the antisociality dimension is comprised of seven items and the

sexual deviance and hypersexuality dimensions are comprised each of two items, thus increasing sensitivity to capturing treatment changes in the antisocial dimension. Moreover, the scoring of certain items may have also influenced the current results as discussed for the PSI related items as well as for other items. For example, scoring improvements on items related to significant social influences and capacity to maintain a stable relationship requires that the individual has time to build such relationships. It can be argued that sexual offenders would not have the time to develop such relationships or improve their current relationship in the year it took them to complete the current program, thus affecting the extent to which these items can capture change. The difficulty of certain items to capture change in the context of the CERUM treatment program could also explain the lack of significant results found.

Taken together, it seems that there are pre- to- posttreatment changes being captured by the Stable-2007, but that their ability to predict lower rates of recidivism is lacking, especially when controlling for pretreatment and static risk. As discussed, these findings may be partly related to issues with the measure itself. Nevertheless, it appears that the dimension scores, specifically the antisocial dimension, has more predictive potential than the total change scores on the Stable-2007. One possible explanation for this finding is that most of the modules of the CERUM program addressed the Stable-2007 items included in this dimension either directly or indirectly (e.g., modules pertaining to social adjustment). In addition, because the antisociality dimension is comprised of DRFs related to general criminality, there is a strong possibility the individuals following the program already had foundational knowledge about general criminality obtained from non-specialized services during their incarceration (e.g., support groups). As such, it could be inferred that the modules pertaining to cognitive restructuring, sexual education and intimacy, and emotional management, targeted the DRFs contained in the antisocial dimension.

Therefore, contributing to the changes found, and the relationship with lower rates of recidivism. The sexual deviance and hypersexuality dimensions both showed significant pre- to-posttreatment differences indicative of positive changes occurring during treatment. However, the changes did not predict recidivism. Again, this could be explained by the issues related to the Stable-2007 measure, but another possibility is that the positive changes occurring were not significant enough to predict lower rates of recidivism. Hence, modifications to the CERUM program might need to be made to foster greater changes in these dimensions.

When the current findings obtained on the Stable-2007 are compared to the literature on VRS-SO's ability in this regard, it may appear that the Stable-2007 is much less effective in predicting lower recidivism for all types of recidivism. However, it is important to note that not only are there more studies that use the VRS-SO in this area of research, but that those studies typically include larger samples of incarcerated individuals (Olver et al., 2007, 2020; Sowden & Olver, 2017), compared to the relatively smaller community sample used in the current study. The smaller sample of the current study evidently meant that there would be lower recidivism rates, especially for sexual recidivism because of its low base rate in general (Hanson, 2000; Hanson & Bussière, 1998). Consequently, the ability to detect predictive validity was limited.

Finally, the lack of significant predictions found between change scores and lower rates of recidivism could also be due to the community sample used in the current study. Beggs and Grace (2011), Olver et al. (2007; 2020), and Sowden and Olver (2017) used a sample of sexual offenders who had received treatment while incarcerated. Incarcerated offenders are not confronted with the external world when following treatment. The external world contains situations, factors, and cues that are associated with their criminal behaviors. Therefore, although pre- and posttreatment changes can be positive, they can be difficult to maintain once the support

and structured environment provided by a treatment program is no longer available. Hence when the program has ended it can be easier to fall back into old patterns, which is not an option when incarcerated. This is another potential explanation for the significant results found form pre- to-posttreatment but the lack of significant results found when examining associations between change scores and recidivism.

6.2 Cognitive Distortions

6.2.1 Treatment Changes on Cognitive Distortions

No positive changes were found in cognitive distortions as measured by the Bumby Rape and Molest Scale, which partly disconfirms the second hypothesis of the study. This result is surprising given a whole module was dedicated to addressing cognitive distortions in the CERUM program. Nevertheless, the current findings are both contradictory and consistent with the findings observed in the literature. Individual studies examining treatment effectiveness in reducing cognitive distortions or pro-offending attitudes related to sexual offending have found improvements using different SRMs including Abel-Becker Cognitions Scale (Abel et al., 1989), Adult Nowicki-Strickland Internal-External Control Scale (Nowicki & Duke, 1983), Entitlement to Sex scale (Hanson et al., 1994), Questionnaire on Attitudes Consistent with Sexual Offending (Lindsay et al., 2000), Rape Myth Acceptance Scale (Burt, 1980), Hostility Towards Women Scale (Check, 1985), Sex with Children is Justifiable Scale (Mann et al., 2007), and Victim Empathy Distortion Scale (Beckett & Fisher, 1994; Beggs & Grace, 2011; Keeling et al., 2006; Wakeling et al., 2013). However, a meta-analysis summarizing nine studies that examined pre-to- posttreatment changes in attitudes supportive of sexual offending found no significant pattern of treatment change (Helmus et al., 2013). Overall, the findings do not seem to support the ability of SRMs to capture positive treatment change on cognitive distortions. It also appears the

CERUM program was not effective in changing cognitive distortions related to sexual offending against adults and children, at least within the context of the measure used.

Indeed, one possible explanation for the lack of changes observed in this regard is the SRM used to measure cognitive distortions in the current study. The Molest and Rape Scale includes items that can be related to excuses and justifications, which are less consistently related to sexual recidivism in the research (Gannon, 2006; Helmus et al., 2013; Maruna & Mann, 2006; O' Ciardha & Gannon, 2011). In fact, some authors have identified the Molest and Rape Scale as problematic for this reason (Helmus et al., 2013). Specifically, results from a factor analysis on the Rape Scale found evidence of two factors: excusing and justifying rape (Hermann et al., 2012). This provides evidence that scales included in this measure, which were designed to capture a single construct, may include items that measure many factors, including justifications, excuses, and attitudes (Helmus et al., 2013). As such, the Molest and Rape Scale may be less sensitive to capturing the specific DRFs related to cognitive distortions that are most related to sexual recidivism (e.g., beliefs related to the acceptability of sexual offending; Maruna & Mann, 2006)

6.2.2 Associations of Pre- and Posttreatment Scores on Cognitive Distortions with Recidivism

When examining the predictive value of the pre- and posttreatment scores for cognitive distortions related to child victims on recidivism, only the pretreatment scores for the cognitive distortions related to children significantly predicted sexual recidivism, but not in the expected direction; lower levels of cognitive distortions on this scale were significantly associated with large increases in sexual recidivism. No other cognitive distortion scores, child or adult related, predicted recidivism. As a reminder, the study design did not permit the examination of predictive associations with sexual and violent recidivism for these cognitive distortions related

to adult victims at posttreatment. A possible explanation for the unexpected direction of the association between the pretreatment scores on cognitive distortions related to child victims and sexual recidivism, is the face validity of the Molest and Rape scale. The nature of the items on these scales makes it clear which answer is the correct answer. Therefore, it is highly possible that the cognitive distortions reported were not reflective of the true level of cognitive distortions and influenced by social desirability. The result being low presence of cognitive distortions predicting higher levels of sexual recidivism. This could also explain the lack of significance found in the other predictive associations between this DRFs and recidivism.

Two other studies examined the predictive validity of pre- and posttreatment scores separately on this DRF. The first, is the study by Wakeling et al. (2013). The author examined the predictive validity of multiple measures of pro-offending attitudes for sexual and violent recidivism combined. The majority of both pre- and posttreatment scores on the different SRMs used were non significant and had no or small predictive relationships with higher sexual/violent recidivism rates (Wakeling et al., 2013), which is somewhat different than the current results. A second study, when examining pre- and posttreatment scores, found that pro-offending attitudes significantly predicted sexual (d = .23) and general recidivism (d = .16), but not violent recidivism (d = .11; Helmus et al., 2013), which is significantly different from the current results. These are but two of the many studies that have had results that differ from those of the current study, that is associating higher levels of cognitive distortions to higher rates of sexual recidivism (e.g., Hanson & Harris, 2000; Ward & Beech, 2006). As previously mentioned, the inclusion of certain items related to constructs less related to sexual recidivism but still grouped under the cognitive distortion label (e.g., excuses and justifications) may partly explain the discrepancies in the results.

6.2.3 Predictive and Incremental Validity of Change Scores on Cognitive Distortions

It was hypothesized that improvements in cognitive distortions would predict lower recidivism rates, and that these treatment effects would remain after controlling for pretreatment and static risk. These hypotheses were not supported in the current study. No significant predictive relationships were found between cognitive distortions pertaining to child and adult victims with any kind of recidivism when using raw and residual change scores or when controlling for static-risk.

Although there are no studies specifically using the Molest and Rape Scale as a pre- to-posttreatment measure, there are mixed findings in studies that have examined the predictive validity of positive change in cognitive distortions and lower rates of recidivism using other measures. For example, Beggs and Grace (2011) used multiple measures of cognitive distortions when predicting sexual recidivism and found no predictive relationship when using raw or residual change scores. Olver et al. (2014) also examined cognitive distortions for adult victims using the Rape Myth Acceptance Scale (Burt, 1980). Although there were pre-and posttreatment gains, there were no noticeable associations with sexual and violent recidivism, which was similar to the results of the current study. For general recidivism, Hudson et al. (2002) examined positive change on sexual attitudes using three SRMs. Only the Abel-Becker Cognition Scale (Abel et al., 1989), a SRM measuring cognitive distortions supportive of sexual assault against children, indicated positive gains that were then associated with reductions in general recidivism. The current results were similar to these findings but only for cognitive distortions related to adult victims. It is important to note that, in contrast to the Hudson et al. study (2002), the current study's definition of general recidivism did not include violent or sexual recidivism, and may explain why the findings did not extend to child-related cognitive distortions.

6.2.4 Possible Explanations for Cognitive Distortions Results

Many explanations could account for the contradicting results between the current study and previous literature. First, the efficiency of SRMs used within this population has always been subject to criticism because of the benefits this population can gain from portraying themselves in a better light. In fact, social desirability is one of the main nuisances of SRMs reported by authors (Arkowitz & Vess, 2003; Gannon, 2006; Howitt & Sheldon, 2007). In fact, Arkowitz and Vess (2003) examined the Molest and Rape Scale and suggested that these types of SRMs were too susceptible to desirable responding. Second, SRMs assume that the individual has access to their inner schemas and cognitions which is not always the case (Maruna & Mann, 2006). Third, as previously mentioned, cognitive distortions seem to be used to describe multiple different constructs, such as attitudes, beliefs, denial, and minimization related to the offense, differences that are not necessarily captured by the Molest and Rape Scale. Finally, there was no way to verify the type of cognitive distortions that were addressed by the therapists giving the program, which potentially affected the results as well.

The third point has been of particular interest in the literature. Indeed, authors have underlined the need for further differentiation within this DRF to clarify which construct is most associated with recidivism, especially sexual recidivism. As previously mentioned, current research has proposed that rationalizations and justifications of crimes are just an excuse for committing a sexual offense or a way to avoid consequences, and that deeper-rooted attitudes and beliefs are what are related to sexual offending (Hanson & Morton-Bourgon 2005; Helmus et al., 2013; Marshall et al., 2011; Maruna & Mann, 2006; O'Ciardha & Gannon, 2011). In fact, as previously mentioned, the meta-analysis conducted by Helmus et al. (2013) found a small but consistent association between attitudes supportive of sexual offending and sexual recidivism.

These authors once again underlined how different constructs were being included under the term “cognitive distortions”. It seems that the lather term has become an umbrella term to encompass all types of different constructs. As such, further differentiation or better operationalization is needed. As previously discussed, the Molest and Rape Scale used in this study is one such measure that includes multiple different constructs and has been identified as problematic for this reason (Helmus et al., 2013). It therefore seems plausible that the current results are largely explained by issues with the measure being used in that it could be measuring constructs that are not related to recidivism, and therefore not directly addressed in the current program.

6.3 Paraphilic Sexual Interests

The final DRF to be evaluated for changes was PSIs. In contrast to the other DRFs, sexual interests were measured by two means, via self-report using the Sexual Interest Cardsort Questionnaire and phallometric testing. It is important to note that this sample mainly included individuals who had committed sexual offenses towards adults and/or children, with very few committing offenses such as voyeurism and exhibitionism. In addition, the stimuli used in phallometric testing did not include scenarios related to the latter. As such, the main focus of the discussion will be on PSIs related to rape and pedohebephilia to facilitate the comparison between both types of measurement.

6.3.1 Treatment Changes on PSIs

Changes for all pedohebephilic and rape related sexual interests as measured by SRM were significant but small in magnitude. Although no past studies have used the Sexual Interest Cardsort Questionnaire as a means to evaluate changes occurring during treatment, other studies have found significant pre- to- posttreatment differences on sexual interests using other SRMs

(e.g., Wilson Sex Fantasy questionnaire; Wilson, 1978). In these studies, improvements were found on exploratory, impersonal, and sadomasochistic related fantasies with small to moderate treatment effects (Bakker et al., 1998; Beggs & Grace, 2011). The current study also found similar but large pre- to- posttreatment changes on pedohebephilic and rape related sexual interests via phallometric testing. These results are consistent with the findings of previous individual studies examining treatment effectiveness in increasing control over PSIs in sexual offenders against children and adults using phallometric testing (e.g., Marques et al., 2005; Marshall & Barbaree, 1988).

The large effect of the pre- to- posttreatment change scores as measured by phallometric testing also potentially support the use of behavioral techniques in sexual offender treatment programs and coincides with the literature comparing the different ways of treating PSIs (Gannon et al., 2019; McPhail & Olver, 2020). A recent meta-analysis examining the effects of different interventions on pedohebephilic arousal found moderate to large treatments effects when examining pre-and posttreatment changes in individuals who underwent behavioral and pharmaceutical treatments, and small effects when individuals underwent more comprehensive treatments, that is including more than just behavioral techniques and more than one treatment target (McPhail & Olver, 2020).

6.3.2 Associations of Pre- and Posttreatment Scores on PSIs with Recidivism

All of the individual pre-and posttreatment score associations with recidivism for PSIs as measured by SRM were non significant. Similar results were found for associations between pre- and posttreatment PSIs as measured by phallometric testing, in that no relationships were significant. Past literature using phallometric testing to predict sexual recidivism has been contradictory with some studies finding a predictive relationship between pre- and posttreatment

scores and sexual recidivism (e.g., Rice et al., 1991), and others not (e.g., Marques et al., 2005).

6.3.3 Predictive and Incremental Validity of Change Scores on PSIs

It was hypothesized that the SRMs and phallometric change scores would predict lower sexual recidivism rates more than lower violent and general recidivism rates. It was also hypothesized that these predictive relationships would remain when pretreatment scores and static risk were controlled for. This hypothesis was not supported by the current results. The majority of associations between PSIs as measured by SRMs and phallometric testing were non significant. The only significant association occurred between raw change scores on masochism and lower violent recidivism rates. When incremental validity was examined only masochism had a significant predictive relationship with general recidivism, but in the unexpected direction. That is residual change scores predicted higher rates of general recidivism. None of the associations were significant for PSIs as measured by phallometric testing.

6.3.4 Possible Explanations for PSI Results

Comparison of the current results with previous studies is challenging for numerous reasons. First, most studies use phallometric testing to evaluate sexual interests in sexual offenders and not SRMs (Kalmus & Beech, 2005). Second, no studies seem to have used the Sexual Interest Cardsort Questionnaire as a pre- and posttreatment measurement, nor have they related change scores on this measure to recidivism. In fact, there are very few studies using SRMs to measure treatment change in rape and pedohebephillic interests and many seem to use SRMs designed to measure pro-offending attitudes and/or cognitive distortions (e.g., Anderson et al., 1995; Beech & Ford, 2006; Beech & Hamilton-Giachritsis, 2005).

The lack of significance in PSIs as measured by SRMs can partly be explained by the measure used. The Sexual Interest Cardsort Questionnaire is a measure containing many items

related to multiple PSIs with strong face validity (Holland et al., 2000), potentially making falsifying the results for social desirability purposes easier for the sexual offenders who completed the CERUM program. Anecdotally, it was the experience of the author that while entering the data, the majority of answers for the items fell in the "extreme sexual repulsion" option, the lowest available rating. This pattern of response severely limiting the range of possible scores on this measure, potentially explaining the lack of significance between change scores on this measure and recidivism.

The larger versus small to moderate effect sizes pertaining to PSIs as measured by phallometric testing and SRMs respectively could be explained simply by the heightened difficulty in faking results on psychophysiological measures as compared to the Sexual Interest Cardsort Questionnaire with its strong face validity. Phallometric testing is in fact considered a more objective estimate of sexual interests (Murphy & Barbaree, 1994). Moreover, PSIs as measured by phallometric testing have consistently been found to be one of the strongest predictors of sexual recidivism (Hanson & Bussière, 1998; McPhail et al., 2019). Overall, the findings seem to support the ability of SRMs and phallometric testing to capture treatment change on PSIs, but not their ability to have these changes predict recidivism. The results suggest that the CERUM program could have potentially been effective in reducing pedohebephillic and rape related interests, but that the changes were not large enough to predict lower rates of recidivism.

6.4 Comparisons Between Different Methods of Measurements

Finally, it was hypothesized that change scores on the Stable-2007 would be better predictors than the SRMs for all three types of recidivism. This hypothesis was examined qualitatively by comparing results from each. Overall, pre- to- posttreatment changes on the

Stable-2007 scores do not seem to be better predictors of lower recidivism rates than those on SRMs. These findings are consistent with the few research studies comparing different methods in measuring treatment change (Beggs & Grace, 2011; Helmus et al., 2013; Olver et al., 2009). Different explanations can be put forth to explain these findings. First, it can be argued that the DRFs measured by the SRMs used in this study are not measuring the same constructs as the Stable-2007. For example, whereas the Molest and Rape Scale measure cognitive distortions, the Stable-2007 has no items directly related to this particular DRF. Second, although the Sexual Interest Cardsort Questionnaire, phallometric testing, and the sexual deviance dimension of the Stable-2007 all measure sexual interests, the sexual deviance dimension is limited in its ability to capture changes in PSIs for the reasons mentioned earlier. Third, the use of SRMs has been criticized in the field on sexual offending because of the multiple incentives sexual offenders have to demonstrate improvement (Arkowitz & Vess, 2003; Beggs & Grace, 2011), therefore potentially explaining some of the positive changes found within the SRMs. That said, a counter argument to this final explanation is that participants in the current study had less incentive to exaggerate improvements compared to individuals being assessed or evaluated before being sentenced or while being incarcerated.

6.5 Treatment program

Another possible explanation for the lack of significant results and associations in unexpected directions, is the theoretical basis on which CERUM was created. Since 2004 there has been much development in the research on DRFs in sexual offending and the corresponding interventions that should be included in treatment programs. Therefore, the CERUM program is dated with regards to the literature upon which it was created. The following section highlights

aspects of the CERUM program that could potentially be problematic based on current research and that might require modifications.

6.5.1 Relapse Prevention

One such element is the inclusion of both relapse prevention and risk, need, responsivity principles (RNR) in CERUM. As previously discussed, relapse prevention paired with RNR and the use of cognitive behavioral therapy (CBT) have been demonstrated to be the most effective type of treatments to date (e.g., Andrews et al., 2006; Olver & Wong, 2013; McGrath et al., 2010). Some more recent meta-analyses have begun to examine treatment effectiveness using relapse prevention and RNR as distinct moderators is order to explore their specific effects on treatment. A first meta-analysis included 17 studies (N = 6,681) with the aim of examining treatment effectiveness in sexual offenders of all types, (i.e., adult and adolescent sexual offenders, sexual offenders with child and adult victims; Soldino & Carbonell-Vayá, 2017). The sexual offender treatment group either had to be compared to sexual offenders not receiving treatment or receiving non-specialized treatment (Soldino & Carbonell-Vayá, 2017). The studies' designs also needed to meet a certain level of quality. Therefore, each study was graded on the Collaborative Outcome Data Committee's study quality guidelines (CODC; CODC, 2007). As a reminder, these guidelines contain 21 items referring to different study features that once graded evaluate the degree to which estimated treatment effectiveness is unbiased (CODC, 2007). Out of the 17 studies included, one was considered having "strong" quality, seven were considered having "good" quality, and 10 considered having "weak" quality (Soldino & Carbonell-Vayá, 2017). One study was excluded for not meeting the minimum criteria for the "weak" quality group of the CODC guidelines (CODC, 2007). The authors used different moderators to examine their effect on treatment effectiveness. Treatment type was among the many moderators used and

it was divided into five categories: CBT, CBT with relapse prevention, Multisystemic Family Therapy, social support, and therapies combining different models and interventions (Soldino & Carbonell-Vayá, 2017).

Overall, treatment was effective in reducing sexual (*OR* = 0.69) and general (*OR* = 0.66) recidivism rates, but not violent recidivism (Soldino & Carbonell-Vayá, 2017). All treatment modalities, except for therapies combining a variety of models and interventions, were effective in reducing sexual recidivism. Multisystemic Family therapy had the largest effect size (*OR* = 0.23), followed by social support (*OR* = 0.27), CBT (*OR* = 0.47) and finally CBT with relapse prevention (*OR* = 0.70). Here the magnitude of effects was lowest for CBT and CBT with relapse prevention treatment modalities (Soldino & Carbonell-Vayá, 2017). The authors did mention that these results could have been due to the large difference in the number of studies included for each modality, two for CBT and seven for CBT with relapse prevention, as well as heterogeneity found between studies using CBT with relapse prevention. In addition, the effect of treatment according to the quality on recidivism rates was analyzed, based on the CODC guidelines. The "weak" quality not the "good" quality studies had significant treatments effects for sexual and violent recidivism (*OR*s of 0.57; Soldino & Carbonell-Vayá, 2017). These results underline how poor quality studies could be introducing bias when examining treatment effectiveness.

A second meta-analysis by Harrison et al. (2020) examined the relationship between recidivism and effectiveness of CBT-based treatment in adult sexual offenders. Selected studies had to utilize a CBT-based treatment, examine sexual recidivism rates and have a comparison group. In all, 25 studies were included (*N* = 9 000), converted into 42 effect sizes. Multiple moderators were used, including decade of implementation separated into three distinct categories: 1980s, 1990s, and 2000s. CBT-based treatments using relapse prevention (i.e., either

as a distinct module or as a framework) and using a combination of relapse prevention and RNR were also used as distinct moderators. Results indicated that treatment had a significant effect on lowering sexual (*OR* = 0.63) and violent (*OR* = 0.62) recidivism, but not general recidivism rates. For both sexual and violent recidivism, treatments implemented in 1990s were the most effective. More specifically, CBT treatments implemented in the 1990s were more effective than those in the 1980s and 2000s when examining sexual and violent recidivism. Finally, none of the other moderators had significant treatment effects. Although the overall treatment effect of CBT features on general recidivism was non significant, the nine studies using relapse prevention had significant effect sizes (*OR* = 0. 74), whereas the two studies using a combination of relapse prevention and RNR did not. While non significantly different the authors discussed the differences, and postulated that there could be differing benefits in treatment using relapse prevention and those using relapse prevention and RNR combined (Harrison et al., 2020).

These meta-analyses are the first to use relapse prevention and RNR as distinct moderators when examining treatment effectiveness. Results indicate some preliminary differences between programs using or not using relapse prevention and RNR. However, this could be due to the large discrepancy between the number of studies in each group. Soldino and Carbonell-Vayá (2017) had two studies using CBT-based treatments including relapse prevention and seven using CBT-based treatment without relapse prevention. Harrison et al. (2020) had nine studies using relapse prevention compared to two using a combination of relapse prevention and RNR. It is too early to ascertain what these results mean for the future of sexual offender treatment. However, this emphasizes the importance of researching the specific effectiveness of the different components included in these programs, as well as how the effectiveness of these components can differ depending on different sexual offender

characteristics such as risk level and offender type. The importance of tailoring programs to risk level has already been emphasized by the RNR principles (Bonta & Andrews, 2017) and much research has adhered to the idea that therapeutic programs need to be tailored to different types of sexual offenders (e.g. child victims, adult victims, internet sexual offending; Harrison et al., 2020; Lambie & Stewart, 2012; Middleton et al., 2009). The current study included sexual offenders with a variety of sexual offenses varying in severity. The CERUM program also used both relapse prevention and RNR. It is possible that the CERUM program, although specialized for moderate to high risk sexual offenders, lacked specificity within the sexual offender group, and that many interventions lost their effectiveness for this reason.

This research brings into question the inclusion of a therapeutic model that focuses almost solely on the avoidance of future sexual related crimes as in the relapse prevention approach. Although important, in the past decade research has begun to explore the potential benefit of treatment programs using a goal oriented approach, an approach where individuals' strengths are fostered to overcome the problems that led to their offending and then used to build their confidence in order to lead a crime free life (Marshall & Hollin, 2015). Mann et al. (2013) examined sexual offenders' reasons for refusing treatment. One of the reoccurring complaints was that the current programs focused solely on their sexual crimes, which made them feel continuously punished. In fact, the majority of sexual offenders in this study shared that they would been more motivated to participate in a program that focused on positive self-development in order to better their lives in the long-term (Mann et al., 2013).

The CERUM program was created prior to the move towards more strength-based approaches mentioned above (Marshall & Hollin, 2015). Consequently, the seven modules of the CERUM program focused on the individual's sexual crimes and how to avoid recidivating in the

future. Even in the modules dedicated to social adjustment, a large part of it was dedicated to giving psychoeducation on how deficits in this area have led to the individual' past sexual offenses. It is possible that the continued focus on this negative aspect of their lives reduces their motivation and hence their ability to retain and maintain skills that can promote self-expansion. This lack of motivation could possibility explain the lack of significant associations between the changes in DRFs and recidivism in this study. A more recent treatment program could create an equilibrium between aspects related to the sexual crimes and those related fostering individual strengths and tools to use in the future.

6.5.2 Cognitive Restructuring

Research on the role of cognitive distortions in sexual offending has continued to grow since the creation of the CERUM program. As has been previously mentioned, deeper attitudes and beliefs over basic rationalizations, justifications, and minimizations are now what are believed to be what's related to sexual recidivism. This shift in understanding has also been used as an explanation as to why the associations between cognitive distortions and sexual recidivism have been weak in past research (Hanson & Morton-Bourgon 2005; Helmus et al., 2013; Marshall et al., 2011; Maruna & Mann, 2006; O'Ciardha & Gannon, 2011). The cognitive restructuring module of the CERUM program was based on this earlier research which neglected the underlining nature of the attitudes and beliefs most related to sexual recidivism. In addition, cognitive distortions were challenged using cognitive restructuring as a therapeutic intervention, which would not necessarily address the cognitive maladaptive schemas behind the distortions that are theorized to be the basis for beliefs and attitudes most supportive of sexual offending (Ó Ciardha & Ward, 2013; Polaschek & Gannon, 2004; Ward & Keenan, 1999).

Currently, research has shifted to define offense supportive cognitions as beliefs or

attitudes that society rejects and that are associated with sexual offending and recidivism (Ó Ciardha & Ward, 2013). Ward and Keenan (1999) identified five core implicit theories that would be the basis for the pro-offending attitudes found in sexual offenders with child victims. They were classified under five themes; child as a sexual being, entitlement, nature of harm, dangerous world, and uncontrollability. More recent research has since confirmed the association between these themes and sexual offending against children (Paquette et al., 2014; Paquette & Fortin, 2021). Polaschek and Gannon (2004) proposed five theories underlining pro-offending attitudes but for sexual offenders against rapist: women are dangerous, women are sex objects, male sex drive is uncontrollable, entitlement, and dangerous world. Given that this research was in its infancy when the program was created these five themes were not a specific focus of the program. It is likely that this module in the CERUM program did not target the appropriate pro-offending attitudes related to recidivism, potentially explaining the lack of significance compared to the other DRFs found in this study.

6.5.3 Control of Paraphilic Sexual Interests

Three of the modules of the CERUM program focused on the control of PSIs using olfactory therapy, covert sensitization, and satiation therapy. A few studies have attempted to examine the effectiveness of these techniques on PSIs. Laws and Marshall (1991) reviewed 8 studies using masturbatory reconditioning for a multitude of PSIs, such as sexual assault of adult women, sexual interest in children aged 6 to 13 years, and different fetishisms (e.g., underwear fetish). Effectiveness was found in all studies, however the majority of studies reviewed were case studies and because the study was a review and not a meta-analysis there were no statistics available.

Gannon et al. (2019) conducted a meta-analysis including 70 studies (N = 55, 604) with the objective of determining whether different specialized psychological treatments for offenders reduced recidivism rates. Twenty-six of these studies pertained to treatments for sexual offenders. Among the many moderators examined, arousal reconditioning was one of them. Larger treatment effects were observed in studies that included some form of arousal reconditioning (OR = 0.57). However, the techniques used for arousal reconditioning in the studies included were not mentioned.

Finally, a meta-analytic review examining 23 within group designs studies and 18 single cases study (N = 1071) examined different treatment methods for pedohebephilic sexual interests in sexual offenders against children (McPhail & Olver, 2020). Results indicated that behavioral and pharmacological interventions were effective at reducing pedohebephilic sexual interests (g = 0.79 and 0.64 respectively) more so than treatment programs including multiple psychosocial treatment targets (g of 0.20; McPhail & Olver, 2020). Specifically, for pedohebephillic arousal, olfactory aversion showed large significant effects (g = 0.79), covert and vicarious sensitization (g = 0.65) and satiation showed moderate effects (g = 0.76). For pedophilic arousal, satiation had a large significant effect (g = 1.08) and the combined aversion and extinction interventions had significant small effects (g = 0.30). An important limitation of this meta-analysis, however, was that all studies used phallometric testing to measure pedohebephilic sexual interests and no studies measuring PSI's for sexual assault on adult women.

The results from the studies mentioned above suggest an overall effectiveness of arousal reconditioning techniques in the treatment of sexual offenders, which contradicts older research (Laws & Marshall, 1991). The lack of significance in the current study might be due to the low recidivism rates in general and a small sample size, and not to the efficiency of the techniques

used in the program. That said, more research is needed to ascertain whether these specific techniques used in the CERUM program are effective. The majority of meta-analyses on treatment effectiveness do not include arousal reconditioning techniques as moderators or treatment variables (Hall, 1995; Hanson et al., 2002; Hanson et al., 2009; Harrison et al., 2020; Kim et al., 2016; Koehler et al., 2013; Losel; Schmucker, 2005; Schmucker & Losel, 2015). In addition, the only study to our knowledge to examine the effectiveness of specific arousal reconditioning behavioral techniques is that of McPhail and Olver (2020) and this meta-analysis examined the effects on sexual offenders against children not against adults. There is clearly a gap in the literature on the effectiveness of specific behavioral techniques used for arousal reconditioning, such as the ones used in the CERUM program.

6.6 Subtypes of Sexual Offenders

Research in the field has demonstrated that different types of sexual offenders differ on the DRFs that will be the most related to recidivism. For example, Etzler et al. (2020), when exploring the different dimensions of the Stable-2007, examined the differences between types of sexual offenders. Sexual offenders against children had higher scores on the sexual deviance and hypersexuality dimensions than sexual offenders against adult females. However, the opposite was true for the antisociality dimension. Olver et al. (2007) found differences on the VRS-SO's scores on the different dimensions between the different types of sexual offenders. Scores on the sexual deviance dimension were significantly higher for sexual offenders against children compared to those against adult women, intrafamilial, and mixed sexual offenders (i.e., multiple types of victims). Scores on the criminality dimension were significantly higher for sexual offenders against adult women and mixed sexual offenders (Olver et al., 2007).

These results represent the possible inherent differences that can be present in different types of sexual offenders. Based on these results it is possible that different types of sexual offenders responded to different aspects of the CERUM program, which could have affected and nullified the results of the study. In addition, if certain needs were not being focused on enough for certain offenders some of the DRFs could have worsened, also explaining some of the unexpected directions found between the different scores and recidivism.

6.7 Implications

The findings of the current study have important scientific and clinical implications for the treatment of sexual offenders. A first implication involves the use of the Stable-2007 as a measure to capture treatment change in DRFs. The current findings support its ability to capture pre- to- posttreatment changes but not the capacity for these treatment change scores to then predict lower recidivism rates. Important issues were identified with regards to scoring changes on the Stable-2007 that may greatly limit its use clinically and in research when examining changes occurring in treatment. First, the scoring manual does not have instructions on how to score for treatment change. Specifically, it does not specify whether evaluators should only consider information obtained at the pre-evaluation or build on the individual's complete history. This is an important element to consider when scoring, as many of the items require an overview of the individual's history (e.g., the item on stable relationships and positive social influences). Focusing solely on the information obtained at pre-evaluation could therefore inflate or significantly reduce the changes being recorded. As previously discussed, the second issue identified in the scoring procedures are the scoring criteria for certain items that make it almost impossible for the individuals to demonstrate significant change after a year of treatment. In fact, most community programs have a similar duration to the 54-week CERUM program (Schmucker

& Lösel, 2015). Moreover, these limitations are likely to be even more problematic if used in an inpatient treatment setting, where patients have even less of an opportunity to integrate therapeutic knowledge in their daily functioning to effect significant change in DRFs.

These issues have significant impact for future use of the Stable-2007. It could be that the Stable-2007, in its current state, captures more lasting changes or, in the context of treatment, effects that occur in the long-term. If this is the case, the Stable-2007 would be a more useful tool if coded at multiple time points after treatment, giving individuals more time to integrate what they have learnt. This procedure could more accurately demonstrate the changes occurring and increase the Stable-2007's ability to demonstrating that these positive changes are predicting lower recidivism rates. Given longer follow-up periods are not always feasible, an alternate solution could be to revise the current scoring instructions to be more suitable for shorter time periods.

The second implication involves the use of SRMs in evaluating changes occurring in treatment, which has been criticized in the literature. The current findings somewhat support their effectiveness in capturing change. As such, SRMs could be used in conjunction to dynamic risk assessment measures to more precisely examine changes that are occurring in DRFs, and therefore further nuance changes being capture by risk assessment measures. In addition, the availability of different SRMs and their easy use facilitates their inclusion in various study designs.

The third implication involves the importance of controlling for static and pretreatment risk (i.e., residual change scores) when evaluating treatment change. The current study provides evidence that controlling for pretreatment and static risk can impact the significance and magnitude of the effects observed. Only recently have studies used residual change scores to

examine change and its relationships to recidivism as well as controlling for static risk. In fact, Beggs and Grace (2011) were the first authors to examine residual change scores for sexual offender treatment, and Olver et al. (2014, 2020) and Sowden and Olver (2017) are some of the only authors to date to examine treatment change and recidivism while controlling for pretreatment and static risk in their analyses.

In terms of clinical implications, the current findings inform program development for sexual offenders by providing preliminary support for the inclusion of certain modules in treatment interventions. In the current study, PSIs as measured by phallometric testing showed improvement with the largest effects pre- to- posttreatment. Although preliminary, these results add to the limited literature evaluating the relevance of arousal reconditioning based modules in treatment programs. Furthermore, the lack of positive treatment change on cognitive distortions in the current study and new scientific literature on the subject, underlines the importance of structuring modules targeting pro-offending attitudes as opposed to strictly targeting justifications and excuses for sexual offense. According to O'Ciardha and Gannon (2011), the focus should not simply be on cognitive restructuring of offense-specific justifications but instead on identifying and restructuring the underlining cognitive structures that are driving offense-specific justifications. With that said, the literature highlights the importance of continuing to investigate offense-supportive cognitions as treatment targets.

6.8 Study Limitations

Certain limitations of this study must be recognized. The first limitation addresses the lack of an equivalent control group for comparison. As such, the control of individual differences was not fully accounted for in the current study. The difficulty in creating and having access to such a control group in the field of sexual offending has been mentioned by many authors (e.g.,

Hanson & Bussière, 1998; Lösel & Schmucker, 2005; Schmucker & Lösel, 2015). Randomized controlled clinical trials are considered the gold standard in program evaluation (Marques et al., 2005). However, the nature of this population's crimes adds to the difficulty of creating such study designs in that there are important ethical considerations, notably the potential victims of reoffending sexual offenders who are not assigned to a treatment group. Many studies have used matched controlled groups as a compromise to this dilemma (e.g., Abracen et al., 2011; Duwe & Goldman, 2009; Nicholaichuk et al., 2000; Mews et al., 2017). However, these studies were unable to compare groups on different methods of measurements because the majority of the comparison groups had not undergone pre- and posttreatment evaluations. A lack of random assignment or a control group limits the generalizability of the results in the current study.

The second limitation is the study's small sample size. Sample sizes are especially sensitive in studies examining sexual recidivism because of the relatively low bases rates of sexual recidivism (Hanson, 2000; Hanson & Bussière, 1998). Consequently, as the sample decreases, so does the chance of having the level of recidivism needed for the majority of analyses conducted in the current study. In fact, several authors have underlined the role of low recidivism base rates in the lack of statistically significant findings in this field (Barbaree, 1997; Hanson 2000) and the importance of including large sample sizes (Hanson, 2000). As such, small sample size may explain the lack of statistical significance found throughout the many analyses in this study. Combining findings from individual studies, such as the current study, into a meta-analysis may be one way in overcoming the issue of small sample size.

In addition to statistical significance, the small sample size also prevented comparisons between different types of sexual offenders. For example, multiple studies in the field have compared sexual offenders against children to those against adult women, and found differences

between the two (e.g., Bumby, 1996; Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2005; Kelmus & Beech, 2005; Mann et al., 2010). Other studies have examined differences between different types of sexual offenders against children (e.g., intrafamilial vs. extrafamilial; Goodman-Delahunty & O'Brien, 2012; McPhail et al., 2013; McPhail & Olver, 2020; Muschang et al., 2005; Rice et al., 1999). The size and heterogeneity of the current sample made it difficult to examine such differences statistically.

A third limitation addresses the varying length of follow-up that was used when conducting the AUC analyses instead of using the recommended fixed follow-up. This decision was made given the small sample size and the known low rates of recidivism, as mentioned above. As such, participants with longer follow-up periods had higher chances of recidivating than those with smaller follow-up periods. The varying length of follow-up potentially affected the results by lowering the magnitude and significance of the associations between residual change scores and recidivism rates, decreasing the chances that residual change scores would predict lower rates of recidivism. In addition, the varying length of follow-up did not permit the control of individual differences that could explain why some individuals would recidivate soon after completion of the treatment program and why others would recidivate many years later, therefore biasing the current results.

The fourth limitation worth mentioning is the operationalization of recidivism use in the study. A variety of different recidivism variables are used in the field of sexual offending. For the purposes of the current study three distinct categories were created where an offense was never included in more than one category. However, the majority of studies in this field create overlapping categories (e.g., Eher et al., 2012; Etzler et al., 2020). For example, Olver et al. (2014, 2020) and Brankley et al. (2019) included sexual offenses that met criteria for being

violent in their violent recidivism category, and included all offenses, violent and sexual, in their general recidivism category. Furthermore, the definition of what constitutes a reoffending offense can differ across studies. The current study used only convictions, whereas other studies sometimes include new charges and accusations as well as sexual offenses that have been adjudicated as nonsexual offenses (Olver et al., 2020; 2014). Both the type of recidivism categories created and the sole use of convictions as recidivism in the study likely affected the frequency of recidivism rates that were available for the analyses, hence limiting the accuracy of comparisons that can be made with other studies.

The fifth limitation pertains to the Stable-2007 dimensions used in the analyses. The dimensions were created by Etzler et al. (2020) and have not been used or replicated in other studies to date. Consequently, there was no literature available using these dimensions as treatment change measurements to assist in the interpretation of the results. Comparisons were limited to the use of similar dimensions found on the VRS-SO, that although similar do not include the same DRFs. Furthermore, the number of Stable-2007 items contained in each dimension varied significantly. The difference in the number of items constituting each dimension inadvertently created unevenness in their ability to capture change. Finally, when these dimensions were created, the items regarding significant social influences and cooperation in supervision were left out due to practical and statistical reasons. All these elements potentially affected the results obtained and the interpretations that can be drawn from them. More extensive research using these dimensions is required to better understand their relationship to recidivism and treatment change.

The sixth limitation concerns the use of phallometric testing to measure sexual interests. Phallometric testing variables used in research are mostly based on the arousal scores obtained

from the presentation of different stimuli (McPhail et al., 2019). Arousal scores were not available for the current study, prompting the creation of a categorical variable based on what had been considered a deviant versus non-deviant profile. The categorical variable created greatly limits the conclusions that can be drawn from the results because it prevents the identification of specific changes in sexual interests that could be occurring during treatment. Furthermore, PSIs as a categorical variable contain less variance than a continuous variable, further limiting the results and conclusions that can be drawn.

The seventh limitation of this study is related to the inferences that can be made regarding the specific effectiveness of each module of the CERUM treatment program. Specifically, it is difficult to ascertain whether the skills taught in a specific module contributed to the change in a certain DRF. For example, positive changes in PSIs most likely occurred due to olfactory therapy, covert sensitization and satiation therapy modules. However, there is no way to confirm this association in the current study. This is an important limitation in that it does not permit us to establish a causal relationship between the changes observed and the treatment program. Consequently, it is impossible to draw any conclusions about the treatment programs true effectiveness in producing these changes and reducing recidivism rates. The evaluation of true treatment effectiveness and all integral parts of a treatment program represents an element that has yet to be examined in the literature.

The eighth limitation is related to the responsivity principle of RNR. Although there has been much research examining the risk principle of RNR and some research examining the need principle, as is discussed in the current study, research examining the role of the responsivity principle in treatment is limited. CERUM did use a CBT-based program and provide individual sessions to address any individual characteristics that could have potentially impacted the

individual's ability to benefit from treatment. However, no procedure was put in place to measure the potential impact of these responsivity factors on treatment effectiveness.

The final limitation pertains to the period of time in which the CERUM program was created (i.e. 1991 – 2004). As was explained in detail in the discussion, multiple aspects of the program no longer represent the current research on treatment of sexual offenders or have little research validating them as affective treatment interventions with this population. Recent literature is beginning to question the effects of combining both RNR and relapse prevention in treatment programs. In addition, research is now exploring the underling theories of pro-offending attitudes. For sexual offenders against children, child as a sexual being, entitlement, nature of harm, dangerous world, and uncontrollability were identified as the important themes (Ó Ciardha & Ward, 2013; Ward & Keenan, 1999). For sexual offenders against adult females, women are dangerous, women are sex objects, male sex drive is uncontrollable, entitlement, and dangerous world were the themes identified (Polaschek & Gannon, 2004). Finally, there is a lack of literature on the effectiveness of the methods used to control PSIs (i.e., olfactory Therapy, covert sensitization satiation therapy) in sexual offenders.

6.9 Future Directions

Future research would benefit from evaluating specific elements of treatment programs, such as relapse prevention, in order to add to the literature on useful treatment implementation; maximizing the resources to target the most important DRFs that are most likely to change with treatment and reduce recidivism rates. In addition, it would be beneficial to have a way to monitor treatment progress in each module being included in a treatment program. This would allow for better quantification of each modules' contribution to treatment effectiveness. Including procedures that permit the monitoring and measurement of individual characteristics

that are known to affect an individual's ability to benefit from treatment, are another important additive to the evaluation of treatment effectiveness. These types of procedures have not been the main focus in the development and evaluation of treatment programs thus far.

Despite being a challenging endeavor in the current field, future studies should make attempts to utilize more robust study designs, namely a randomized controlled clinical trial in order to establish a true causal relationship between changes occurring, recidivism rates, and completed treatment programs. Including larger sample sizes, multiple methods of measurements of DRFs (e.g., SRMs and dynamic risk assessment measures), and similar recidivism follow-up times (i.e.,12 years) across studies may also prove beneficial for reasons previously discussed. Furthermore, selecting specific SRMs and dynamic risk assessment measures based on the treatment targets being addressed in the treatment program would provide the added opportunity to evaluate the effectiveness of specific treatment modules, a current gap in the literature. Finally, creating a protocol where the measures used to examine treatment effectiveness are scored at multiple times points after treatment completion would help establish if the observed changes are true changes or due to measurement error. Multiple time points would also provide information on the stability of the changes occurring as well as provide additional time for the changes to take effect and be integrated into the individual's life.

In addition, to these methodological suggestions, more research is needed specifically examining the Stable-2007's ability to measure treatment change, especially considering its popular use in the evaluation of recidivism risk for sexual offenders. Having the Stable-2007 coded at different time points, as to give individuals more time to integrate what they have learnt, could increase the Stable-2007's ability to capture changes and its ability to predict lower rates of recidivism with these changes. For example, passing the Stable-2007 at pre-and posttreatment

but also at different follow-up times after treatment completion. If positive treatment changes after longer periods of time are being related to lower recidivism rates, the Stable-2007 in its current state, could be a measure best used to capture permanent changes or changes that take longer to show their effects in an individual's life. If not, then revisiting the scoring structure of the Stable-2007 when it is being used to measure treatment change could be a possible solution.

CONCLUSION

The overarching aim of the present thesis was to evaluate changes occurring during the Centre d'Étude et de Recherche de l'Université de Montréal (CERUM) program, a specialized community treatment program for sexual offenders recently released from incarceration. This study is among the few studies to examine treatment change using different methods of measurement and relating these changes to recidivism as well as comparing the effectiveness of these measures. More specifically, it is only the second study using the Stable-2007 to examine treatment change in dynamic risk factors (DRFs).

Overall, the findings were indicative of positive changes in DRFs in sexual offenders who had completed the CERUM program. It is possible that the modules pertaining to the control of paraphilic sexual interests (PSIs; olfactory therapy, satiation therapy, and covert sensitization) were the most effective in produce changes (PSIs) because of the large effect sizes of these changes and the moderate effect sizes of the sexual deviance dimension on the Stable-2007. Moreover, the module pertaining to cognitive restructuring potentially had the least effect in producing positive changes because cognitive distortions were the only DRFs to not have significant pre- to- posttreatment changes. Finally, all other modules could have potentially had a positive effect on DRFs included in the antisociality dimension of the Stable-2007. These are mere inferences however, because the study design did not permit the analysis of the predictive association between changes on DRFs and specific modules. Finally, none of significant pre- to-posttreatment changes were significant predictors of lower recidivism rates.

Although many criticisms have been put forth regarding self-report measures (SRMs), and many advantages put forth regarding dynamic risk assessment measures, the current findings do not support the superiority of dynamic risk assessments in measuring changes occurring during treatment. More studies examining treatment change on the Stable-2007 and their ability

to predict recidivism are needed to clarify the current results and establish more comprehensive conclusions. Creating a study where the Stable-2007 is scored at different posttreatment follow-up times in addition to pre-and posttreatment would be ideal. This could inform us on whether the Stable-2007 is in fact able to capture treatment change efficiently and in what circumstances. It is possible that compared to the Violence Risk Scale-Sexual Offender Version, the Stable-2007 is a better measure of dynamic change after changes have had the time to be fully integrated into the individual's life. Taken together, the current findings also raise important questions regarding the measurement methods used to capture treatment change in this area of research, specifically, with regard to the current scoring procedures on the Stable-2007, and the variability in SRMs measuring the different constructs that are considered cognitive distortions. Understanding and establishing the limitations of these measurements in the context of treatment change and the exact changes that are being captured by these measures may lead to better predictive power for recidivism rates.

Finally, these findings provide important information that can be used to advance the evaluation and development of treatment programs for sexual offenders. The literature has consistently demonstrated the positive effect of treatment programs following the risk, need, responsivity principles but the way in which they do remains unclear. As highlighted in this thesis, gaining a better understanding of the specific modules that affect treatment change may prove beneficial in this regard. As McGrath et al. (2010) pointed out, treatment programs directed towards sexual offenders direct a lot of their resources to variables that have little or no relationships to sexual recidivism (e.g., offense responsibility, victim awareness, and empathy). Therefore, including and evaluating the most malleable and important DRFs related to sexual recidivism in treatment programs is important as well as making sure we have the appropriate

tools to do such an evaluation. Doing so will result in the creation of effective treatment programs that significantly reduce sexual recidivism rates, therefore providing sexual offenders with the opportunity to reintegrate society as active members, and protecting individuals from becoming victims of sexual offenses.

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APPENDICES

Appendix A

Static-99R Scoring Sheet

Feuille de cotation - Statique-99R

Nom de la personne évaluée: _____ **Lieu de l'évaluation:** _____

Date de remise en liberté utilisée pour les fins de la cotation : _____

Item n°	Facteur de risque	Critères	Score
1	Âge à la remise en liberté	Âgé de 18 à 34,9 ans Âgé de 35 à 39,9 ans Âgé de 40 à 59,9 ans Âgé de 60 ans ou plus	1 0 -1 -3
2	Cohabitation	Le délinquant a-t-il cohabité avec un amant (homme ou femme) pendant au moins deux ans? Oui Non	 0 1
3	Infractions répertoriées avec violence non sexuelle Condamnations?	Non Oui	0 1
4	Infractions antérieures avec violence non sexuelle Condamnations?	Non Oui	0 1
5	Infractions sexuelles antérieures	Accusations / Condamnations: 0 / 0 1, 2 / 1 3-5 / 2, 3 6+ / 4+	 0 1 2 3
6	Prononcés de peine antérieurs (sauf l'infraction répertoriée)	3 ou moins 4 ou plus	0 1
7	Condamnations pour infractions sexuelles sans contact	Non Oui	0 1
8	Au moins une victime sans lien de parenté avec le délinquant	Non Oui	0 1
9	Au moins une victime qui était un inconnu	Non Oui	0 1
10	Au moins une victime de sexe masculin	Non Oui	0 1
	Score total	**Faire la somme des scores obtenus pour les différents facteurs de risque**	

Catégories nominales de niveaux de risque (version 2016)	Score total	Niveaux de risque
	-3 , -2	I - Risque très faible
	-1, 0	II – Risque sous la moyenne
	1, 2, ,3	III – Risque dans la moyenne
	4, 5	IVa – Risque au-dessus de la moyenne
	6 et plus	IVb – Risque bien au-dessus de la moyenne

Il (y avait / il n'y avait pas) suffisamment d'information disponible pour compléter la Statique-99R conformément au manuel de cotation (version 2016). Je crois que ce score (représente adéquatement / ne représente pas adéquatement) le risque présenté par monsieur _____ *à ce moment.*
Commentaires/Explications : _____

Évaluateur: _____ **Signature :** _____ **Date:** _____

Appendix B

Stable-2007 Scoring Sheet

STABLE-2007 – FEUILLE DE COTATION

Nom du délinquant : _____ Lieu de l'évaluation : _____

Date de l'évaluation : _____ Nom de l'évaluateur : _____

Aspect évalué	Remarques	Score
Influences sociales importantes		
Capacité d'avoir une relation stable		
Identification émotive aux enfants	(ne coter cet item que pour les agresseurs d'enfants)	
Hostilité envers les femmes		
Rejet social et solitude		
Manque d'intérêt à l'égard d'autrui		
Gestes impulsifs		
Faibles aptitudes pour la résolution de problèmes		
Émotions négatives		
Préoccupations sexuelles/libido		
Relations sexuelles comme mécanisme d'adaptation		
Intérêts sexuels déviants		
Intérêts sexuels déviants, et possibilité rémission. Un délinquant qui obtient un « 2 » d'après ces antécédents peut voir son score lié aux intérêts sexuels déviants réduit d'un point si la situation correspond à ce qui suit : Le délinquant vit une relation sexuelle consensuelle, satisfaisante et appropriée sur le plan de l'âge depuis au moins un an pendant qu'il est « à risque » dans la collectivité, et son comportement n'indique aucun intérêt sexuel déviant pendant deux ans. Si une telle relation est confirmée par une personne-ressource crédible, indépendante et culturelle et que la condition mentionnée s'applique, vous pouvez indiquer un « -1 » dans la case ci-dessus, ce qui réduit le résultat global du délinquant d'un point.		
Coopération dans le cadre de la surveillance		
Résultat final (sur 24 pour les délinquants qui n'ont pas agressé d'enfants – voir la page 45 de l'onglet 5 pour connaître la définition d'un « mineur »)		26

Échelle d'interprétation : De 0 à 3 = faible, de 4 à 11 = moyen, 12 et + = élevé

CE DOCUMENT NE DEVRAIT ÊTRE UTILISÉ QUE PAR LES PERSONNES AYANT REÇU LA FORMATION SUR CET INSTRUMENT

Appendix C

Molest Scale

(Bumby, 1996; translated by Barsetti, 1998)

196

Nom: _____ Date : _____

ÉCHELLE COGNITIVE BUMBY:
ÉCHELLE M
(K. Bumby, 1995)

Lisez attentivement chacun des énoncés ci-dessous et encerclez le chiffre indiquant le mieux votre opinion. Ce questionnaire s'intéresse à ce que VOUS croyez réellement, pour cette raison, évitez de répondre comme vous croyez que d'autres voudraient que vous répondiez.

l. Totalement en désaccord
2. Désaccord
3. En accord
4. Totalement en accord

		Totalement en désaccord			Totalement d'accord
1.	Je crois que la sexualité avec les enfants peut amener l'enfant à se sentir plus proche des adultes.	1	2	3	4
2.	Étant donné que certaines victimes disent à l'abuseur qu'elles se sentent bien quand il les touche, l'enfant y prend probablement plaisir et ne sera pas très affecté par cela.	1	2	3	4
3.	Plusieurs enfants qui ont été abusés sexuellement n'éprouvent pas beaucoup de problèmes majeurs venant des abus.	1	2	3	4
4.	Toucher un enfant sexuellement est parfois une façon de lui montrer de l'amour et de l'affection.	1	2	3	4
5.	Parfois les enfants ne disent pas non aux activités sexuelles parce qu'ils sont curieux au sujet de la sexualité et qu'ils y prennent plaisir.	1	2	3	4
6.	Quand les enfants ne disent pas qu'ils ont été impliqués dans des activités sexuelles avec un adulte, c'est probablement parce qu'ils ont aimé ça et que cela ne les a pas dérangés.	1	2	3	4
7.	Avoir des pensées et des fantaisies sexuelles concernant un enfant n'est pas si mauvais que ça parce qu'au moins ça ne fait pas de mal à l'enfant.	1	2	3	4

Traduction Ian Barsetti, 1998

		Totalement en désaccord			Totalement d'accord
8.	Si une personne n'utilise pas la force pour avoir une activité sexuelle avec un enfant, ça ne fera pas autant de mal à l'enfant.	1	2	3	4
9.	Certaines personnes ne sont pas des "vrais" abuseurs d'enfants - ils sont seulement hors contrôle et ils ont fait une erreur.	1	2	3	4
10.	Faire seulement des attouchements à un enfant n'est pas aussi mal que de le pénétrer et cela n'affectera probablement pas autant l'enfant.	1	2	3	4
11.	Certaines relations avec des enfants, qui incluent de la sexualité, ressemblent beaucoup aux relations qu'on peut avoir avec un adulte.	1	2	3	4
12.	Les activités sexuelles avec un enfant peuvent aider l'enfant à apprendre au sujet de la sexualité.	1	2	3	4
13.	Je crois que les abuseurs d'enfants reçoivent souvent des sentences plus longues que ce qu'ils devraient.	1	2	3	4
14.	Les enfants qui se font abuser par plus d'une personne font probablement quelque chose pour attirer les adultes à eux.	1	2	3	4
15.	La société voit les contacts sexuels avec les enfants d'une façon bien pire qu'ils ne le sont vraiment.	1	2	3	4
16.	Parfois ce sont les abuseurs qui souffrent le plus, perdent le plus et sont le plus blessés suite à un abus sexuel avec un enfant. Ils sont plus blessés ou souffrent plus que l'enfant.	1	2	3	4
17.	Il est mieux d'avoir des contacts sexuels avec son enfant que de tromper sa femme.	1	2	3	4
18.	Dans plusieurs abus sexuels sur des enfants il n'y a pas de vraies manipulations ou menaces qui sont utilisées.	1	2	3	4
19.	Certains enfants aiment les contacts sexuels avec les adultes parce que cela les fait se sentir désirés et aimés.	1	2	3	4
20.	Certains hommes ont abusé sexuellement d'enfants parce qu'ils croyaient vraiment que les enfants aimeraient comment ils allaient se sentir.	1	2	3	4

		Totalement en désaccord			Totalement d'accord
21.	Certains enfants désirent vraiment avoir des activités sexuelles avec des adultes.	1	2	3	4
22.	Pendant les contacts sexuels, certains hommes demandent à leurs victimes si elles aiment ça parce qu'ils veulent vraiment faire plaisir à l'enfant et qu'il se sente bien.	1	2	3	4
23.	Les enfants qui ont été impliqués dans des contacts sexuels avec des adultes font finir par passer par-dessus ça et poursuivre normalement leur vie.	1	2	3	4
24.	Certains enfants peuvent agir de façon séductrice.	1	2	3	4
25.	Tenter de rester éloigné des enfants est probablement une façon suffisante pour un abuseur de s'empêcher d'abuser de nouveau.	1	2	3	4
26.	Très souvent les abus sexuels sur les enfants ne sont pas planifiés, ... ils arrivent sans être prévus.	1	2	3	4
27.	Plusieurs hommes abusent sexuellement d'enfants à cause du stress et parce qu'abuser les aidaient à se sentir moins stressés.	1	2	3	4
28.	Il arrive souvent que les enfants inventent des histoires que quelqu'un les abuse parce qu'ils veulent avoir de l'attention.	1	2	3	4
29.	Si une personne se dit que jamais elle n'abusera de nouveau, alors elle ne le refera probablement jamais.	1	2	3	4
30.	Si un enfant regarde les organes génitaux d'un adulte, il est probablement intéressé à la sexualité.	1	2	3	4
31.	Parfois ce sont les victimes qui débutent les activités sexuelles.	1	2	3	4
32.	Certaines personnes se tournent vers les contacts sexuels avec des enfants parce qu'elles ont été privées de sexe par les femmes adultes.	1	2	3	4
33.	Certains enfants sont beaucoup plus adultes que d'autres.	1	2	3	4

		Totalement en désaccord			Totalement d'accord
34.	Les enfants qui vont dans la salle de bain quand un adulte est en train de se déshabiller ou est à la toilette font probablement ça juste pour essayer de voir les organes génitaux de l'adulte.	1	2	3	4
35.	Les enfants peuvent donner aux adultes plus d'acceptation et d'amour que les autres adultes.	1	2	3	4
36.	Certains hommes qui abusent sexuellement d'enfants n'aiment vraiment pas abuser d'enfant.	1	2	3	4
37.	Je crois que la principale chose qui fait que les activités sexuelles avec les enfants ne peuvent pas être tolérées est que c'est contre la loi.	1	2	3	4
38.	Si la plupart des abuseurs d'enfants n'avaient pas été eux-mêmes abusés sexuellement comme enfant, alors ils n'auraient probablement jamais abusé d'un enfant.	1	2	3	4

Veuillez relire chaque question et placer un "X" au-dessus des réponses correspondant à ce que vous auriez répondu avant que d'autres personnes (famille, amis, policiers) connaissent vos comportements sexuels déviants.

Appendix D

Rape Scale

(Bumby, 1995; translated by Barsetti, 1998)

201

Nom: _____ Date : _____

ÉCHELLE COGNITIVE BUMBY:
ÉCHELLE R
(K. Bumby, 1995)

Lisez attentivement chacun des énoncés ci-dessous et encerclez le chiffre indiquant le mieux votre opinion. Ce questionnaire s'intéresse à ce que VOUS croyez réellement, pour cette raison, évitez de répondre comme vous croyez que d'autres voudraient que vous répondiez.

l. Totalement en désaccord
2. Désaccord
3. En accord
4. Totalement en accord

		Totalement en désaccord			**Totalement d'accord**
1.	Les hommes qui commettent des viols réagissent sans doute à de nombreux stress dans leur vie et violer les aide à réduire ces stress.	1	2	3	4
2.	Les femmes qui se font violer le méritent probablement.	1	2	3	4
3.	Les femmes veulent généralement du sexe, peu importe comment elles peuvent l'obtenir.	1	2	3	4
4.	Étant donné que les prostituées vendent leur corps pour de l'argent de toute façon, ce n'est pas si mal si quelqu'un les force sexuellement.	1	2	3	4
5.	Si une femme ne résiste pas fortement à des avances sexuelles c'est qu'elle veut probablement avoir des relations sexuelles.	1	2	3	4
6.	Les femmes accusent souvent les hommes faussement de viol.	1	2	3	4
7.	Plusieurs femmes qui se font violer avaient déjà une mauvaise réputation avant.	1	2	3	4
8.	Si les femmes ne couchaient pas avec autant de monde, elles auraient moins de chance de se faire violer.	1	2	3	4
9.	Si une femme se saoule à un party, c'est de sa faute si quelqu'un prend avantage d'elle sexuellement.	1	2	3	4
10.	Quand des femmes portent des vêtements serrés, des jupes courtes et pas de soutien-gorge ou de sous-vêtements, elles cherchent à avoir du sexe.	1	2	3	4

Traduction Ian Barsetti, 1998

		Totalement en désaccord			Totalement d'accord
11.	Plusieurs femmes disent avoir été violées simplement parce qu'elles veulent de l'attention.	1	2	3	4
12.	Les victimes de viol sont généralement un peu à blâmer pour ce qui est arrivé.	1	2	3	4
13.	Si un homme a déjà eu des relations sexuelles avec une femme femme avant, il devrait pouvoir avoir du sexe avec elle quand il le veut.	1	2	3	4
14.	Seulement avoir des fantaisies de forcer quelqu'un sexuellement n'est pas si mal que ça parce que ça ne fait pas vraiment de mal à quelqu'un.	1	2	3	4
15.	Les femmes qui vont beaucoup dans les bars sont principalement à la recherche de sexe.	1	2	3	4
16.	Souvent, quand une femme dit "non", c'est juste qu'elle veut pas avoir l'air facile. En réalité elle veut dire "oui".	1	2	3	4
17.	Une partie des devoirs d'une femme est de satisfaire son mari sexuellement quand il le veut, que ça lui tente ou pas.	1	2	3	4
18.	Souvent une femme rapporte un viol longtemps après les Faits parce qu'elle est fâchée après l'homme avec qui elle a eu du sexe et qu'elle veut se venger.	1	2	3	4
19.	Tant qu'un homme ne frappe pas une femme à coups de poing ou en la giflant, il n'est pas aussi mal de la forcer à avoir des relations sexuelles.	1	2	3	4
20.	Quand une femme se fait violer plus qu'une fois, elle fait probablement quelque chose pour causer ça.	1	2	3	4
21.	Les femmes qui se sont faites violer vont finir par passer par-dessus ça et poursuivre normalement leur vie.	1	2	3	4
22.	Lors d'une sortie, quand un homme dépense beaucoup d'argent pour une femme, en retour la femme devrait au moins lui donner quelque chose sexuellement.	1	2	3	4
23.	Je crois que si une femme laisse un homme l'embrasser et la toucher sexuellement, elle devrait vouloir avoir des relations sexuelles complètes.	1	2	3	4

		Totalement en désaccord			Totalement d'accord
24.	Quand des femmes se comportent comme si elles étaient trop bonnes pour les hommes, la plupart des hommes pensent probablement à les violer juste pour les remettre à leur place.	1	2	3	4
25.	Je crois que la société et les tribunaux sont trop sévères avec les violeurs.	1	2	3	4
26.	La plupart des femmes sont des salopes et elles méritent ce qui leur arrivent.	1	2	3	4
27.	Avant que la police enquête sur une plainte de viol faite par une femme, c'est une bonne idée de trouver comment elle était habillée, si elle a bu et quelle sorte de personne elle est.	1	2	3	4
28.	Généralement, un viol n'est pas planifié - la plupart du temps ça arrive juste comme ça.	1	2	3	4
29.	Si une personne se dit que jamais elle ne violera de nouveau, alors elle ne le refera probablement jamais.	1	2	3	4
30.	Beaucoup d'hommes qui violent le font parce qu'ils manquent de sexe.	1	2	3	4
31.	La raison pour laquelle beaucoup de femmes disent "non" à des relations sexuelles est qu'elles ne veulent pas avoir l'air facile.	1	2	3	4
32.	Si une femme va à la maison d'un homme lors d'un premier rendez-vous, elle veut probablement avoir des relations sexuelles avec lui.	1	2	3	4
33.	Beaucoup de femmes ont un désir secret d'être forcée à avoir des relations sexuelles.	1	2	3	4
34.	La plupart des hommes qui commettent des viols ont des désirs sexuels plus forts que ceux des autres hommes.	1	2	3	4
35.	Je crois que n'importe quelle femme peut prévenir de se faire violer si elle le veut vraiment.	1	2	3	4
36.	La plupart du temps, la seule raison pour laquelle un homme commet un viol est parce qu'il a été abusé sexuellement quand il était enfant.	1	2	3	4

Veuillez relire chaque question et placer un "X" au-dessus des réponses correspondant à ce que vous auriez répondu avant que d'autres personnes (famille, amis, policiers) connaissent vos comportements sexuels déviants.

Appendix E

Sexual Interest Cardsort Questionnaire

(Abel & Becker, 1979)

APPENDIX

The Sexual Interest Cardsort Questionnaire*

1. **A 25-year-old man and I are lying side by side, naked, touching each other all over.**
2. **I'm peering through a girl's window. She's an attractive brunette with a great figure; she's taking a shower.**
3. I have an erection. My penis is between an eight-year-old girl's legs.
4. **I'm looking through the partially drawn window shades. I'm watching a woman sleeping. The covers have fallen off of her nude body.**
5. A beautiful woman is stroking my dick and balls as she lies beside me. We are both getting excited.
6. I'm standing next to a woman I've just beaten up. She's bruised and bleeding. She can't move any more.
7. **I'm lying on top of my son. I feel his hot body beneath mine as I kiss his back and feel his skin.**
8. **A 10-year-old girl and I are lying on the couch. I'm rubbing her soft skin, all over her body. I'm feeling her body. I'm feeling her breasts.**
9. The subway train is extremely packed. I've got a really stiff hard-on. I'm face to face with a young woman, pushing my dick right up against her. She's trying to move away but she can't.
10. I'm pleading with a tall woman to stop hitting me with her belt. The pain is tremendous.
11. I'm lying back naked on the bed with my daughter sitting on top of me. I'm stroking her naked body with my hands and pushing my fingers into her cunt.
12. I'm pinching a 25-year-old woman's breasts with pliers. She's beginning to bleed. She's crying.
13. **I see two good-looking 22-year-old girls walking down the street. I drive slowly by with no clothes on, rubbing my penis. I get excited as they look at me with disbelief.**
14. I followed a 20-year-old blonde girl into the parking lot at the public library. I take out my dick and begin to beat it as she sees me and looks tense.
15. **I'm holding a burning cigarette butt against the big tits of a 30-year-old brunette. She's screaming for me to stop.**
16. **It's packed in the train and I've pinned a woman up against the people in front of her. I'm rubbing her ass with my hands. She tells me to stop. She can't get away from me. I just keep rubbing her.**
17. **It's very crowded in the subway train. I'm facing a beautiful girl. I'm rubbing her tits and crotch. She has a blank expression on her face.**

*Bold indicates items retained on the SIS.

18. **I'm unbuttoning my daughters blouse. I'm feeling her small tits. She likes it.**
19. **I've pulled an attractive woman to the ground. I've pulled her panties off. I'm forcing my penis in her. She is screaming.**
20. **I'm kneeling beside my son, holding him close to me. I'm kissing his forehead and getting an erection.**
21. I'm pulling down my little daughter's shorts and underwear. I'm going to finger-fuck her.
22. **I've forced my way into an apartment. I've forced a brunette to take off her clothes. I'm raping her.**
23. **I'm lying on a deserted beach with a real handsome guy. He has wrapped his arms and legs around me. He really enjoys making love with me.**
24. I have a hard on. My dick is between the legs of a young boy.
25. **I would like to be a wife.**
26. We're in the 69 position with me on top. I'm sucking a young guy's dick as he sucks mine. I'm starting to come.
27. A 12-year-old girl is sucking my cock. I'm starting to come.
28. I'm thinking about putting on some sheet nylon tights with no crotch. I'm feeling them in my hands.
29. I would like to have a good physique.
30. **I have a woman spread eagled on the floor. I'm torturing her, burning her fingertips.**
31. **An attractive woman looks surprised as I tell her I'm going to rape her. I make her undress and put my dick between her legs as I hold her down.**
32. I would like to be a mother.
33. **I can feel myself getting turned on as my daughter hugs me. I want to screw her.**
34. I would like to be a husband.
35. **I've broken into a house. No one is home. I've found some woman's underclothes and I'm pulling on some cotton panties.**
36. I would like to wear beautiful, feminine clothes.
37. I go by the girl's locker room at a college and look through the dressing room. I can see several girls there, all partly undressed.
38. **I have a hard-on. My dick is between my daughter's legs as I'm ejaculating.**
39. **I feel my partner on top of me, with her knees holding my hips. She is moving up and down on my dick.**
40. **My son is curled up beside me in bed. I'm gently rubbing his small penis; he is getting an erection.**
41. I've fucked a 25-year-old woman. She has come again and again. She thinks that I'm really great in bed.

42. I've gotten my son to rub my cock. I'm getting hard.
43. A beautiful woman is pinching my skin with pliers. I'm afraid she's going to pinch my balls with it, too.
44. I'm in my sister's bedroom alone. I'm pulling on a pair of beige, nylon panties.
45. I'm forcing a well-stacked girl to hold still as I push my dick into her. She cries out as I rape her.
46. **My hands and legs are tied up. The ropes are biting into my skin. A woman in high heeled, black boots is coming towards me, snapping a whip in her hands.**
47. **I would like to be a woman.**
48. **I would like to have male genitals.**
49. A 12-year-old boy is sucking my cock. I'm about to come.
50. **I'm following a woman off the subway train. I move in right behind her as she waits for the next train. The crowd moves forward onto the next train. I start to rub her ass from behind.**
51. **I'm chained to a wall. A woman in tall, black boots is holding a burning cigarette butt close to my nipples. She smiles as she brings the cigarette closer.**
52. **I'm lying face down on the ground. An attractive woman is sitting on my ass, slashing my back with a razor blade. I'm pleading with her to stop. The blood is gushing out.**
53. **A good-looking man is pressing against me as we kiss very tenderly. We hold each other close.**
54. **I am following a nicely built blonde, 18-year-old girl down the stairs at school. I take my dick out, holding my books in front of it and begin to beat it. As I follow her, I feel it get hard.**
55. A handsome man is lying on top of me in bed. He has his tongue in my ear and his hand on my dick. I'm really excited.
56. **I'm wearing a matching bra, panties and slip, all lacy. I'm touching and feeling the underclothes against my body.**
57. **I'm standing naked beside the car. A 20-year-old girl in a bikini is coming from the swimming pool. I feel my hard penis in my hand as she sees me and looks shocked.**
58. **I've gotten a young boy to rub my cock. I feel it getting hard.**
59. I'm sucking my young son's small dick. He seems to like it.
60. **A lovely little boy is curled up beside me in bed. I'm gently rubbing his small penis.**
61. **I've lured a nine-year-old girl into the house. She is really good looking. I'm pulling down her shorts and underwear.**
62. **I'm lying on top of my partner. She is digging her hands into my back, lifting her ass up. She is really excited.**

63. I would like to have female genitals.
64. I would like to wear masculine clothes.
65. A 10-year-old girl with long blond hair is holding my dick. She seems to be fascinated by it.
66. I've got a young woman tied down in the woods. I'm sticking needles into her vagina. She is screaming with terror.
67. A girl in the women's bathroom has taken her clothes off. I've pinned her down. I'm starting to rape her.
68. I'm lying on a couch, wearing only my feminine underclothes, bright red panties, large-cupped bra, sheer hose, and a see-through slip.
69. At an apartment complex, a 25-year-old girl is dressed in her panties. I'm looking at her through the window.
70. I'm looking from my upstairs window down into the apartment across the way. I can see a woman with big tits reading with a see-through negligee on.
71. I've walked out of the field house shower so a young girl can see me. The 13-year-old is surprised as she looks at my penis.
72. My partner and I are in the bathtub. She is sitting between my legs, leaning her back against me. I'm playing with her tits.
73. I would like to be a man.
74. There are very few people on the subway train. I sit down next to an attractive woman and let my hand fall down into her crotch. I start to rub her.
75. A 10-year-old boy with soft dark hair is holding my dick. He seems to be fascinated by it.

Appendix F

Consent Form

FORMULAIRE DE CONSENTEMENT DES PARTICIPANTS

C.É.R.U.M.

Centre d'Étude et de Recherche de l'Université de Montréal

CONSENTEMENT À LA PROCÉDURE D'ÉVALUATION DES PROBLÉMATIQUES SEXUELLES

À la personne évaluée au CÉRUM :

Cette procédure d'évaluation fut élaborée par Docteur Joanne-Lucine Rouleau, psychologue, professeur agrégé au Département de Psychologie de l'Université de Montréal et a reçu l'accréditation d'un comité d'experts internationaux dans le domaine de l'évaluation des problématiques sexuelles.

L'évaluation faite au CERUM a pour but d'évaluer si une personne présente une problématique sexuelle, le cas échéant, de déterminer des avenues de traitement et finalement de mesurer les impacts de ce traitement.

La procédure d'évaluation comprend quatre parties : une étude de dossier, une entrevue, quelques questionnaires psychologiques et une évaluation en laboratoire.

Présentement sous surveillance fédérale, vous êtes référés pour cette évaluation par le Service correctionnel du Canada qui nous a transmis votre dossier afin que nous puissions prendre connaissance d'aspects importants de votre vie incluant les présents délits, l'histoire délictuelle, le développement sexuel, l'histoire familiale, l'utilisation de drogue et d'alcool, les rapports psychologiques et psychiatriques et les implications antérieures dans des programmes de traitement. Cette partie de la procédure d'évaluation est faite préalablement à la journée où a lieu l'entrevue, la passation des questionnaires et l'évaluation en laboratoire. Cette étude du dossier permet une présélection des personnes pouvant bénéficier de la procédure d'évaluation.

L'évaluation des problématiques sexuelles du CERUM débute par une entrevue standardisée visant à évaluer l'historique de vie sexuelle. Afin de mieux vous comprendre, l'évaluateur qui est un psychologue spécialisé dans le domaine de la délinquance sexuelle et membre de l'Ordre des Psychologues du Québec vous posera alors des questions sur l'histoire de votre vie sexuelle et sentimentale de votre enfance jusqu'à aujourd'hui en incluant les abus sexuels pour lesquels vous avez été condamnés. Quelques autres questions pourront également porter sur d'autres aspeCts de votre vie. Il est possible que le fait de relater votre histoire sexuelle vous amène à ressentir des sentiments désagréables. Si cela se produit, n'hésitez pas à en parler avec l'évaluateur, il pourra vous offrir un support thérapeutique lors de "évaluation ou suite à celle-ci si vous en éprouvez le besoin.

Ensuite vous aurez à remplir quatre questionnaires psychologiques visant à mieux vous connaître. Ils portent sur divers aspects de votre fonctionnement et deux d'entre eux s'adressent plus particulièrement à vos attitudes, croyances et intérêts face à la sexualité.

L'évaluation des attirances sexuelles est une partie importante de l'évaluation complète des problématiques d'abus sexuels. Cet aspect de l'évaluation a pour but d'avoir un profil de vos intérêts sexuels. Ce profil sert à déterminer, si nécessaire, des objectifs de traitement et à mesurer l'impact de ce traitement.

Lors de la séance d'évaluation psychophysiologique, votre degré d'excitation sexuelle sera mesuré à l'aide d'un extensomètre au mercure constitué d'une courroie de caoutchouc contenant du mercure que vous installerez, en privé, autour de votre pénis. Cet appareil s'appelle une "jauge". Vous serez appelé à installer la jauge vous-même dans une pièce où vous serez seul. La jauge que vous aurez à utiliser aura été désinfectée, afin de réduire votre risque de contracter des maladies transmises sexuellement. Aucun cas d'infection causée par ,'utilisation de ces jauges n'a été signalé depuis le début de leur utilisation au CERUM en 1990.

L'évaluation psychophysiologique se déroulera dans un laboratoire constitué de deux pièces adjacentes, soit la pièce où vous serez installé et celle du technicien servant de lieu d'enregistrement physiologique. La communication entre vous et l'évaluateur se fera à l'aide d'un système d'interphone. Il n'y a pas de caméra dans le laboratoire.

Les stimuli sexuels utilisés seront constitués par des bandes vidéos présentées à l'aide d'un magnétoscope et d'un téléviseur, par des diapositives qui seront projetées sur un mur et de bandes sonores que vous écouterez avec des écouteurs.

Les stimuli seront constitués d'images d'enfants, de femmes et d'hommes nus. Dépendamment du problème qui vous a amené à être référé au CERUM, les bandes sonores que vous entendrez pourront décrire des interactions sexuelles entre un homme et des femmes adultes selon différentes modalités dont certaines peuvent être violentes. Les stimuli peuvent également comporter des descriptions de contacts sexuels avec des enfants, certaines des interactions décrites peuvent être sexuellement explicites et violentes.

La séance d'évaluation psychophysiologique dure généralement de 90 à 120 minutes. Si, lors de l'évaluation psychophysiologique vous ressentez le besoin de quitter la pièce pour vous rendre à la *toilette,* nous vous demandons, s'il vous plaît d'en informer l'évaluateur avant de vous désinstaller.

Vous recevrez des explications concernant vos réactions dans le laboratoire par l'équipe d'intervenants dès que cela sera possible.

Les données recueillies lors de cette procédure d'évaluation pourront être utilisées par la directrice du programme dans le but d'évaluer le programme de traitement, de développer des instruments d'évaluation et de conduire des

recherches sur la nature et les causes des agressions sexuelles. En plus de vous aider à *mieux* vous *connaître,* vous participation à cette évaluation permettra l'avancement de la connaissance. Toutes ces recherches seront confidentielles, c'est-à- dire qu'aucun participant n'y sera identifié. Un numéro de code sera attribué à chaque dossier et, conséquemment, aucune information permettant de vous identifier d'une manière ou d'une autre ne sera publiée. Seul le chercheur principal et la personne déléguée par lui auront accès à la liste de participants et aux résultats obtenus lors la procédure d'évaluation.

Si, à n'importe quel moment vous avez des difficultés, des problèmes, des inquiétudes ou des questions au sujet de votre évaluation en laboratoire, n'hésitez pas à nous en faire part.

L'évaluation psychophysiologique des attirances sexuelles est une condition requise et un outil habituel au programme du CERUM.

L'entrevue, la passation de questionnaires et l'évaluation psychophysiologique des intérêts sexuels se déroulent au cours d'une même journée. Nous sommes en semi-confidentialité avec l'agent de libération conditionnelle du Service Correctionnel du Canada qui vous a référé, ce qui implique que dans les 10 jours ouvrables suivant notre rencûntie, un rapport d;évaluation sera produit et envoyé à cette personne. Ce rapport sera mis à votre disposition.

on consentement écrit implique que je comprends que ma participation à l'évaluation est volontaire et que je suis libre de cesser celle-ci à tout moment. Si je décide de quitter la procédure, aucun des résultats recueillis ne serviront à la recherche.

Je, (nom et S.E.D.) reconnais avoir lu la description de la procédure d'évaluation ou qu'elle m'a été lue. J'ai compris tout ce qui m'a été mentionné ci-haut et on a répondu de façon satisfaisante à toutes mes questions concernant ma participation à l'évaluation.

Date: _____ Signature: _____

(nom de l'évaluateur) reconnais avoir expliqué le but, la nature, les avantages, les risques et les inconvénients de l'évaluation et avoir répondu au mieux de mes

connaissances aux questions posées.

Date: _____ Signature: _____

Pour toute question concernant cette évaluation ou pour vous retirer de cette évaluation, vous pouvez communiquer avec le Docteur Joanne- Lucine Rouleau, psychologue au (514) 343-5603 ou au (514) 283-8960.