

**SEX OFFENDER TREATMENT:
AN EVALUATION OF THE STAVE LAKE
CORRECTIONAL CENTRE PROGRAM**

by

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ABSTRACT

Research on the efficacy of sex offender treatment is controversial. Though many studies have shown positive treatment effects, problems such as unequal comparison groups have made results difficult to interpret. This study compared 224 sex offenders referred to the Stave Lake Correctional Centre treatment program to a group of 43 sex offenders that did not receive treatment. Static variables associated with sexual recidivism were measured for each offender using the Static-99 (Hanson & Thornton, 1999). At 5.5 year follow-up, recidivism rates for individuals referred to treatment versus the comparison group was 7% vs. 14% for sexual offending, 10% vs. 23% for violent offending, and 9% vs. 19% for general offending. Survival analyses were conducted for several offence outcomes using treatment and Static-99 total scores as covariates. Results indicated that after controlling for static risk, being referred to treatment did not offer statistically significant predictive value of a new sexual or general offence. However, treatment did predict reduced violent recidivism. The Static-99 accounted for considerable variance in each recidivism category.

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INTRODUCTION

In recent decades the number of programs established to provide treatment to individuals who have sexually offended has grown significantly (McGrath, Cumming, & Burchard, 2003). At the same time, the field has developed increasingly sophisticated theories, classification systems, and specialized treatment interventions to understand and treat these individuals (see Laws & Marshall, 2003 and Marshall & Laws, 2003 for a comprehensive review). Despite this growth, research on the efficacy of sex offender treatment programs has been slow to mature and results have been contradictory (e.g., Hanson et al., 2002; Rice and Harris, 2003a). Accordingly, the perceived efficacy and value of these programs among the legal and political community has been mixed, and financial support and views on how best to manage individuals who have sexually offended has been inconsistent (Gordon & Hover, 1998).

Research Examining the Efficacy of Treatment

Three approaches to evaluating sex offender treatment programs have been suggested, each with different strengths and weaknesses (Hanson, 1997a). The first approach has been to employ large, well-controlled single site studies; the second approach has involved pooling together smaller studies and analysing with meta-analytic procedures; and the third approach has been to measure within-subject change on dynamic variables believed to be related to recidivism.

Large-Scale Randomized Clinical Trials

Large-scale longitudinal studies that use random assignment are compelling; but they are expensive and time consuming, and they require exceptional political will. As a result, they are very rare. In 1981, the California State Legislation provided a unique research opportunity by requiring the Department of Mental Health to experimentally evaluate the effectiveness of sex offender treatment (Marques, Day, Nelson, Miner & West, 1991). In response, a longitudinal research program called the Sex Offender Treatment and Evaluation Project (SOTEP) was launched at Atascadero State Hospital. Over the course of a 10 year period (1985-1995) volunteer sexual offenders were matched on age, criminal history and offence type, and then randomly assigned to treatment or no-treatment groups. An additional matched group of non-volunteers was also compared. Treatment consisted of intensive cognitive behavioural therapy that followed a relapse prevention model. Upon release, treated offenders received an additional year of community treatment. Preliminary results failed to find statistically significant treatment effects, though it has been argued that non-significant results are not unexpected given the short follow-up time (most participants were at risk for less than five years) (Marques, 1999).

Meta-analyses

Furby, Weinrott, and Blackshaw (1989) were among the first researchers to summarize the existing sex offender treatment studies, and their findings highlight the field's humble research beginnings. Initially, Furby et al. intended to conduct a meta-analysis of a diverse collection of 42 studies. However, they concluded that extensive methodological problems across the studies prevented a meaningful quantitative

summary of the research. For example, they observed that most studies they reviewed had short follow-up periods (e.g., more than half had a follow-up period of less than three years), which was related with lower recidivism rates and low statistical power. They also found evidence for differences in the rates of recidivism among different types of offenders. Furby et al. concluded that there did not yet exist evidence that treatment was associated with reduced sexual recidivism. They explained that this statement was not a claim that treatment was ineffective, but that much of the existing research was methodologically flawed and thus unable to support the conclusion that treatment is effective. This review drew attention to the lack of empirical support for sex offender treatment programs, and reflected a growing awareness of the complexities in this area of research. It also served as an early call for methodologically sophisticated research.

In 1995, Hall conducted a meta-analysis of 12 sex-offender treatment studies published since Furby et al. (1989). These studies represented a heterogeneous group of programs; treating different types of sexual offenders, using different treatment orientations, and providing treatment in different settings. Hall found a small but statistically significant effect size ($r = .12$) for individuals who completed treatment. Programs with longer follow-up periods (greater than five years, compared with shorter periods), community based programs (compared with institutionally based programs), and cognitive-behavioural and hormonal treatments (compared to behavioural treatments) were more likely to show reduced rates of sexual re-offending. However, it was noted that across studies there were large differences in treatment effect size, and the small number of studies made any conclusions tentative. Hall also observed that, on average, treatment programs screened out approximately one-third of potential candidates (typically the most pathological), preventing generalizations about the

efficacy of these treatments to all sex offenders. Some researchers have since challenged Hall's conclusions about the value of certain treatment orientations over others due to concerns related to comparison groups used in the studies (Quinsey, Harris, Rice, & Cormier, 1998) as well as Hall's classification of treatment programs into theoretical orientation categories (Hanson, 1997a). Hall's selection of only published studies (thought to over-represent positive outcomes) in the analysis also raised questions about possible bias in favour of treatment (Gallagher, Wilson, Hirshfield, Coggeshall, & MacKenzie, 1999). Nonetheless, the studies reviewed in Hall's meta-analysis provided some indication that studies had become more methodologically sophisticated allowing for clearer conclusions to be drawn from their results.

Alexander (1999) conducted a meta-analysis of a larger number of sex offender treatment outcome studies ($k = 79$) than Hall (1995). However, Alexander's inclusion criteria were less rigorous. The author argued this approach was appropriate since the goal of the study was to identify trends that could direct future research and that a smaller set of cases would reduce statistical power. Studies were classified according to offender subtype, and then further classified into different program related categories (e.g., recidivism rate, type of intervention, and treatment location). Recidivism was calculated for each category cell by dividing the number of re-arrests by the number of cases in the cell. Alexander devised a confidence scheme wherein results were judged to be stronger if the recidivism rate for a given cell was less than 11%, if there were at least 100 subjects in each cell, and if there was a 10% gap in the rates between treated and untreated. Results indicated that, overall, treated offenders had lower rates of offending (13.0%) than untreated offenders (18.0%), though none of the cells met all three strength criteria. Unfortunately, offenders in the treated and untreated groups often

came from different studies, making it difficult to attribute differences between cells to treatment as opposed to other factors such as unequal follow-up time, offender type, or different recidivism measures (Hanson et al., 2002). Alexander also did not include treatment dropouts/non-completers in the review, thus findings are restricted to treatment completers versus untreated offenders.

A meta-analysis from Gallagher et al. (1999) attempted to improve upon Hall's work (1995) by reviewing a more comprehensive selection of outcome studies ($k = 25$) by including research completed before 1989 as well as unpublished studies. While Gallagher et al. included more studies than Hall, only methodologically strong reviews were selected, which was different than Alexander (1999). For each study, the researchers calculated effect sizes and classified them according to different study features (e.g., program and offender type). Findings indicated that treated offenders had lower rates of sexual recidivism than untreated offenders, showing an average effect size ($d = .43$) considered to be in the medium range. Similar to Hall, Gallagher et al. found cognitive behavioural approaches to be associated with reduced sexual recidivism, but they differed from Hall by not finding support for hormonal approaches. The largest treatment effect was found for surgical castration, but this finding was from a single study. Despite finding overall positive effects for psychological treatment, there was significant effect size variability. Gallagher et al. concluded that more research was needed to clarify the differential effects among treatments.

An ongoing research project, entitled the Collaborative Outcome Data Research Project, was initiated in 1997 by members of the Association for the Treatment of Sexual Abusers (ATSA). In the first report of this meta-analysis project, Hanson et al. (2002) examined 43 published and unpublished outcome studies representing different offender

populations, treatment settings, and jurisdictions. Individual studies were categorized according to the quality of their research design (e.g., random assignment vs. incidental assignment) and closely examined the characteristics of the comparison groups. For example, the researchers determined if the comparison groups consisted of treatment refusers (individuals that declined an offered treatment), treatment dropouts (individuals that began treatment but failed to complete), and individuals that received an alternative treatment. Also coded was whether the treatment under review was current or non-current. Current was defined as cognitive-behavioural treatments offered after 1980, or any other treatment still being offered. Results showed that studies using comparison groups with treatment dropouts consistently found treatment effects, suggesting results were more a function of study design than from the effects of treatment. Of the 15 studies with random and incidental assignment (with more equivalent comparisons), and current treatments, sexual recidivism among treated offenders was significantly lower (9.9%) than the untreated group (17.3%). Non-current treatments were not associated with treatment effects on sexual recidivism. Similar statistically significant treatment effects were found when either new sexual or non-sexual recidivism was used as the outcome measure (32% vs. 51%), except with treatment refusers who were more likely to re-offend than those who attended any treatment. While these findings were encouraging, even among the studies that used credible designs, there was significant variability. The authors highlighted the effect differing qualities of participant assignment had on recidivism rates. Similar to other major meta-analysis studies in this field (e.g., Hall, 1995) the methodology and conclusions contained in the report have been scrutinized and critiqued by other researchers. For example, Rice and Harris (2003a) and Rice and Harris (2003b) note that the collection of studies cited by Hanson et al. as

providing evidence of positive treatment results used incidental assignment designs. They argued that many of these studies did not have credible comparison groups, thus preventing conclusions to be drawn about treatment. They highlighted that typically the treatment groups contained treatment completers and did not contain treatment refusers or dropouts. Yet, these treatment groups were compared to groups of offenders that included an unknown number of offenders who would have refused or dropped out had they been offered treatment. Rice and Harris (2003b) conclude that given the lack of high-quality studies, meta-analysis is not a dependable method to summarize this area of research.

Within Treatment Change

In the past decade our understanding of the static variables (e.g., number of previous convictions) associated with sexual recidivism has become increasingly clear (Hanson & Bussière, 1998). For example, age of offender, single marital status, total number of prior sex offences, and victimization of strangers have all been linked with higher rates of sexual re-offending. Regarding variables believed to be amenable to treatment, recent meta-analytic research (Hanson & Morton-Bourgon, 2004) has shown deviant sexual interest (e.g., interest in children) to be related to sexual recidivism, and anti-social orientation (e.g., reckless, impulsive behaviour) to be related to both sexual and non-sexual violent recidivism. Other dynamic variables less strongly related to recidivism include intimacy deficits and sexual attitudes.

As part of the SOTEP research program, Marques, Nelson, West, and Day (1994) measured within treatment change among a sample of child molesters. Results indicated significant improvements on two measures of personal responsibility and

significant reductions on all but one measure of deviant arousal. Clinicians also rated participant understanding of relapse prevention concepts and skills prior to release. In terms of these measures predicting reoffence, results were preliminary and complicated. Measures of personal responsibility were not related to new sexual offences, and only one measure was related to violent offending. Some measures of deviant arousal were associated with new sex offences, although some non-deviant responses were as well. The researchers indicated that high levels of arousal overall were more predictive of sexual recidivism, but the opposite for violent offending. Offenders that “mastered” relapse prevention concepts and skills exhibited reduced potential for sexual recidivism, but did not for violent offences. More recent follow-ups of the relapse prevention variables have only shown a link with chronic offenders, or those with extensive sex offence histories, and not with less chronic offenders (Marques, Nelson, Alarcon, & Day, 2000). These seemingly conflicting results indicate that within treatment change variables need to be explored more extensively.

Research Summary

There have been more than 35 review papers released after 1990 that have examined the effectiveness of sex offender treatment (Hanson et al., 2002). These studies have significant methodological and statistical challenges. While there is some evidence that treatment is associated with reduced recidivism, the insufficient number of high-quality studies prevents definitive conclusions (e.g., Gallagher et al., 1999; Hanson, 2000).

Research Challenges and Considerations

Challenges Associated with Comparison Groups

As indicated by Hanson et al. (2002), the method of participant assignment can dramatically impact results and the credibility given to the findings. From a research perspective, the ideal evaluation design consists of random assignment of offenders to either a treatment or no treatment (or alternative treatment) condition. Unfortunately, alternative treatment and/or no treatment controls are rarely available and well-controlled studies require significant investments of time and money, thus limiting the opportunities for this type of research (Marques, 1999). There also exist ethical problems associated with failing to provide treatment to individuals at risk to re-offend (Marshall & Barbaree, 1988; Marshall, Eccles & Barbaree, 1991). However, some researchers have suggested that withholding a treatment from a control group could be defensible since the currently administered treatments have not been empirically validated (Hanson, 2000; Quinsey, Harris, Rice, & Lalumière, 1993). Also, in many jurisdictions most if not all sexual offenders receive some sort of treatment; therefore, it may be difficult to identify a true control group of untreated sexual offenders.

In the absence of random assignment, many studies have used incidental assignment, which involves the selection of groups where pre-treatment group differences would not be expected. Some researchers have taken advantage of “natural experiments,” such as a change in public policy that mandates treatment following a period where no treatment was offered (e.g., Hanson, Broom, & Stephenson, 2004). With such a design, it could be argued that there are no reasons to believe a group of

offenders incarcerated before the policy change are different than those incarcerated after. Another possibility could involve comparing treated offenders to a group of offenders on a waitlist for treatment.

In addition, researchers have suggested that coding empirically validated static risk variables can account for a significant amount of recidivism variance (Hanson et al., 2004). For example, established sex offender risk assessment measures, such as the Static-99 (Hanson & Thornton, 1999), require the collection of information that is readily available in most correctional files. Using this information to statistically control for pre-existing group differences allows for easier identification of treatment effects and increases confidence in the findings.

Selection and Attrition, and Group Contrasts

Researchers need to carefully consider how to address offenders that refuse treatment, are excluded from treatment, and those that fail to complete treatment. Hall's (1995) meta-analysis of treatment programs illustrates the extent of this concern. Across the studies reviewed, it was estimated that more than one-third of the initially available participants were excluded from attending treatment or did not complete treatment programs. Participants were said to have been excluded for reasons including, "extensive offence history, psychotic, organic brain syndrome, denied offences, management problem in prison, withdrew from treatment program" (p. 803). Hall observed that for some treatment programs (i.e., hormonal treatments requiring intramuscular injections) one to two thirds of potential participants refused treatment. Further, of those who began hormonal treatment, 50% discontinued prior to completion.

Understanding of the research implications of selection and attrition is mixed and evolving. Some groups, such as treatment dropouts, have consistently been shown to have higher rates of offending compared to treatment completers (e.g., Hanson & Bussière, 1998). Offenders who deny committing a sexual offence for which they have been convicted have historically been screened from treatment and believed to be at higher risk to re-offend. This widely held belief among treatment providers has not been supported by research (Hanson & Bussière), although some researchers have suggested the issue of denial is still unresolved (Lund, 2000). Other clinical presentation variables such as low victim empathy and low motivation for treatment have not been shown to relate in a significant manner to recidivism (Hanson & Morton-Bourgon, 2004). Also, treatment refusers do not have increased rates of sexual offending, but they do have higher rates of general offending compared to those who do not refuse treatment (Hanson, et al., 2002). Overall, these findings suggest that decisions as to whom to include in the treatment groups are important.

Restrictive approaches toward grouping might define treatment groups as including only those offenders who passed the treatment screening and completed the entire treatment program. However, interpretation of results from these studies is problematic. For example, it could be argued that the treatment group reduced risk by eliminating those likely to re-offend, and group differences would be expected, but would be independent of treatment (Rice & Harris, 2003b).

A more inclusive approach towards grouping could have all individuals referred for treatment considered together as the treatment group, regardless of their attendance or performance in treatment. A grouping of this nature could include those who received the entire course of treatment, as well as dropouts, those in treatment for a short time,

and those deemed not suitable for treatment at intake. This approach towards grouping ensures that the treatment group does not become a low-risk subgroup of offenders referred to treatment, which is then compared to a no longer equivalent comparison. However, proponents of treatment might argue that including individuals deemed unsuitable for treatment and treatment dropouts within the treatment group is biased against treatment, given that many were offenders were not fully exposed to the treatment, if at all.

Researchers have not yet come to a consensus on how to address inclusion and exclusion issues, and outcome studies have typically not described how they dealt with these grouping issues (Hanson, 2000). Program evaluators have been encouraged to describe their samples as well as possible (e.g., dropouts, nature and frequency of previous offending and demographic variables such as age and marital status, etc.) to help in the identification of possible confounds (Marques, 1999) and to help understand the fairness of the group comparisons.

The Measure of Recidivism

The main goal of sex offender treatment is to prevent new sexual offences. However, the absence of other offences might also be considered a desired outcome. Some of these include breaches of probation (especially if directly related to an offence cycle such as loitering in a playground), violence towards others (e.g., assault), and general offences that are neither sexual nor violent in nature (e.g., impaired driving). It has been argued that any form of violent recidivism (sexual and non-sexual violent offences) should be considered because of the serious public concern related to these types of offences and because sexual offences are often pled down to nonsexual

convictions (Quinsey et al., 1993). While agreeing with this argument, Hanson (1997b) has suggested that violent and sexual offending be considered separately. Hanson reasoned that different processes might be related to each form of offending, requiring different interventions, and thus making the distinction between violent and sexual recidivism important.

Sources of Recidivism Information

There are several possible sources from which to obtain recidivism data, each method associated with a different degree of sensitivity to new offences, and thus different detection rates. Researchers commonly use police databases to obtain officially recorded arrests and convictions. The advantage of this method is that they are a relatively efficient source of information in terms of time and financial resources. However, official counts have been described as “noisy,” meaning that they can be influenced by factors such as an offender’s luck in evading detection as well as the resources a given police force has to pursue these offences (Quinsey & Marshall, 1983). Some researchers have found that the use of unofficial sources, such as victim support groups, can provide better recidivism estimates. For example, Marshall and Barbaree (1988) used information obtained from the Children’s Aid Society and detected approximately two and one-half times the number of victims and failures (treatment participants who re-offended) compared to official records. Similarly, some researchers have found that self-reports of recidivism by offenders yield higher rates of re-offending than official records (Abel et al., 1987), while others have not observed this pattern (Marshall & Barbaree, 1988). Generally, official reports are believed to be an underestimate of the “real” or absolute recidivism rate. Unofficial sources may provide a

better estimate, but also tend to be more time consuming, expensive, and complicated (Barbaree, 1997).

Statistical Power, Low Base Rates, Treatment Effects, and Sample Size

The ability of a given evaluation to detect treatment effects is a function of the magnitude of the treatment effect, base rates of offending, and sample size. With respect to base rates, which are the proportion of offenders that re-offend, most studies report sexual re-offending rates in the range of 10 - 15% at a five year follow-up (Hanson & Bussière, 1998). The implication of having low to moderate base rates of re-offending is that statistically significant treatment effects are difficult to detect without large sample sizes and/or large treatment effects (Hanson, 2000). Indeed, Hanson suggested that, “under normal circumstances, statistically significant treatment effects are not to be expected” (Hanson, 2000). He illustrated this point by showing that a treatment program that reduced recidivism by 40%, and has 200 treated and 200 controls has only a 50% chance of finding a treatment effect when the base rate is .15. Since that the vast majority of studies in this area do not have samples as large as that, the difficulty finding statistically significant treatment effects is not surprising.

The obvious remedy for researchers is to raise statistical power by increasing sample size and/or base rates (Barbaree, 1997). The drawback to larger sample sizes is that it often means increasing the treatment period under review, which increases costs and the likelihood that the program will have changed over time. The other possibility is to increase the detection rate by using unofficial or informal measures of recidivism. The disadvantages of these options include problems such as it is more time consuming, requires the cooperation of more agencies, and is expensive (Barbaree, 1997).

Moreover, when considering the differences between groups, detection strategies really only become important if it can be expected that the recidivism/outcome rates would occur differentially between or across groups.

Changing Nature of Programs and Treatment Integrity

When considering the treatment effect of a given program, it is generally assumed that all members of the treated group received the same type and quality of treatment. However, within a program, it is possible that different therapists may provide different treatment and that over time entire programs evolve with new knowledge about best practices. Further, some offenders might have special needs (e.g., cognitive difficulties and illiteracy) that require treatment to be modified. The danger in not having confidence that treatment was offered as intended is that the interpretation of the results can be obscured (Kazdin, 2002). Some researchers (e.g., Marques, Day, Nelson, & West, 1994) have attempted to standardize their treatment by following treatment manuals, though this approach is amenable to some treatments more than others. Overall, it is often difficult to assess if a consistent form of the program was provided to all offenders over the course of study.

Importance of Further Research

Program evaluators are faced with many challenges, yet efforts to evaluate sex offender treatment programs remain important. Treatment providers have an ethical responsibility to provide responsible caring and to ensure they do no harm (CPA, 2000). Evaluation studies provide feedback to “keep our intuition from drifting into irrelevance” (Hanson, 2000, p. 495) and inform how treatment can be improved. For example,

Marques (1999) described how results from the on-going SOTEP evaluation led to discussion among the treatment providers on how their program might be improved. While individual outcome evaluations often lack statistical power to find treatment effects, which can be discouraging, small methodologically sound studies can collectively contribute to a useful database from which consensus statements can be made (Hanson, 2000; Hanson et al., 2002). Ideally, this information can inform the legal system about sentencing options that will be most beneficial to the rehabilitation of offenders (Peebles, 1999).

Stave Lake Correctional Centre Treatment Program

Stave Lake Correctional Centre (SLCC) was a minimum-security correctional facility that could accommodate a maximum of 60 sexual offenders at a given time. Its mandate, as described in its program description, was to provide a “high quality program of assessment, treatment, and case management intended to reduce the risk of sexual re-offending” (SLCC et al., 1998, p. 1). Similar to other sex-offender programs, offenders were required to meet certain admission criteria. Included were some degree of acceptance of responsibility, the absence of psychological problems that would place the offender or others at risk, a limited history of violent or aggressive behaviour, and a willingness to participate in treatment programs (see Appendix A for a complete list of admission criteria). Since SLCC was a minimum-security institution, individuals assessed as high risk for escape were also excluded from the treatment. The program description stated that offenders should have 10 -12 months remaining in their sentence, although inmates with shorter sentences could also be accepted (SLCC et al., 1998).

Formalized treatment began in the mid 1980s and evolved over time. Although aspects of the program have changed over the years, consultation with a senior SLCC therapist (B. Etches, personal communication, June 22, 2001) indicated that the program had been structurally consistent since 1994. Registered psychologists and psychology graduate students administered the sex offender therapy program. Upon arrival at SLCC, all offenders completed a battery of psychological tests (assessing cognitive and personality functioning) and participated in an intake interview with a psychologist to assess their suitability for treatment.

Group Therapy

Most treated offenders attended a weekly therapy group (2.5 hour sessions) throughout their incarceration at SLCC. Therapy groups consisted of approximately 10 offenders and two therapist facilitators (one psychologist and one psychology graduate student). In the course of the group therapy sessions, each offender was expected to: provided a complete disclosure and accept full responsibility for his offending, recognize the nature of his problem, develop empathy and awareness of feelings, improve communication skills, identify and change maladaptive interpersonal problems, and learn about his offence cycle (SLCC, 1998). Group therapy was seen as an “opportunity to fully explore both inter and intra-personal issues related to his offending...(and) permit the offender to practice the knowledge and skills, gained in other courses and modules, in a ‘here and now’ setting with appropriate support and feedback” (SLCC et al., 1998, p. 8).

Individual Therapy

Offenders not seen as suitable for group therapy or seen by the treatment team as requiring additional treatment were provided individual therapy. Offenders who received individual therapy often were in denial of their offence, in crisis, or experiencing major clinical disorders that made participation in a relatively unstructured group inappropriate. Some individual therapy focused specifically on modifying deviant sexual arousal using methods such as covert sensitization (Laws, 2000; SLCC et al., 1998).

Sex Offender Treatment Modules

In addition to group therapy, three psycho-educational modules were offered at SLCC: Victim Empathy, Thinking Errors, and Relapse Prevention (SLCC et al., 1998). Individual modules consisted of a psychologist presenting topics related to sexual offending to a small group of offenders (approximately 10 - 14). Participants were required to complete module homework assignments that focused on identifying patterns (e.g., thinking errors) that led to offending.

The goal of the Victim Empathy module was to help the offender develop increased understanding and capacity for empathy towards others. Offenders learned about the concept of empathy and discussed the possible impact of abuse on victims. Efforts were made to have the offender reflect on his own abuse experiences to help in identification with feelings his victim may have experienced. Approximately 18 to 23 hours was required to present information in this module (SLCC et al., 1998).

The Thinking Errors module focused on helping offenders identify different patterns of thinking that led to problematic behaviours (e.g., inappropriate anger, anxiety and depression). Efforts were made to help participants identify irrational thoughts and to

challenge them with more appropriate thinking. Participants were also required to identify thinking errors that contributed to their offending. Approximately 16 hours were needed to present information in this module (SLCC et al., 1998).

The Relapse Prevention module contained information to help offenders identify personally relevant risk factors and situations upon release. Participants were expected to develop plans and strategies to respond appropriately to prevent new offences. Approximately 10 hours were needed to present information in this module (SLCC et al., 1998).

Institutional Description

In addition to the formal sex offender treatment, SLCC had a number of programs for offenders (SLCC et al., 1998). For example, each offender was assigned a case manager/correctional officer with whom they regularly met to discuss the offender's progress and help plan for community re-entry. In addition, inmates participated in one of a variety of work activities such as clearing a river basin of logs, a fisheries program that stocked fish for lakes, a sawmill that supplied materials for on-site construction, and a camp kitchen that fed staff and inmates.

A Previous Treatment Content Evaluation

In January 2000, Laws (2000) conducted a qualitative review of the SLCC treatment program. The review examined the admission and intake procedure, the treatment content, and how the program evaluated itself. Laws interviewed a cross-section of institutional staff, treatment providers, community corrections staff (e.g., probation officers), and inmates. Laws described the program as "a well conceived

mainstream sex offender treatment program” (p. 26). Some of the listed strengths of the program included a generally strong and properly focused content, highly educated senior treatment providers, and a high level of service delivery per unit time. Some identified weaknesses included the potential for expanded program content, the Relapse Prevention module was seen as weak, too subjective and infrequently using accountability measures; and what appeared to be considerable overlap in content between groups. Missing elements included treatment for deviant sexual arousal. Laws also stated that the group therapy component may not be necessary. Recommended modifications included a minimum on-site time of 9 - 12 months, the addition of an offender victimization module, and several recommendations related to program evaluation. The review did not examine the effect of treatment on recidivism.

Research Questions

1. Was the group of offenders referred to SLCC similar to the comparison group?
2. Of the offenders that attended treatment at SLCC, how long did they stay in treatment, and why did they stop treatment?
3. Did treatment predict reduced levels of recidivism?

METHOD

Participants

Participants were adult males serving a custodial sentence for a sex offence in a British Columbia, Canada provincial prison. In Canada a provincial prison incarcerates individuals with sentences that are less than two years in duration; whereas, federal penitentiaries incarcerate individuals with sentences of two years or more. Participants were incarcerated for a sexual offence between January 1, 1994 and January 1, 1998. This offence is referred to as the index offence. Excluded from the sample were individuals who were not Canadian citizens at the time of incarceration due to the likelihood of deportation and the related difficulty obtaining follow-up data. Individuals serving intermittent sentences (i.e., sentences that require an offender to be incarcerated for a period of time during the week, and are free in the community for the remainder) were also excluded because their sentences were different than those referred to SLCC (T. Abuda, personal communication, April, 2002).

Selection of Eligible Sexual Offences and Offenders

A sample of offender files referred to SLCC during the study period were manually reviewed, revealing that most were convicted of one or more of the following offences from the Criminal Code; 151 (Sexual Interference), 152 (Invitation to Sexual Touching), 153 (Sexual Exploitation), 173 (Indecent Acts), 271 (Sexual Assault), 272 (Sexual Assault with a Weapon), and 273 (Aggravated Sexual Assault). It was decided that offenders with one or more of these offences would be selected for the study. The

Corrections Research Information System (RIS, a provincial database managed by Corrections Branch, Ministry of Public Safety and Solicitor General) was used to identify the SLCC list of offenders. A total of 224 sexual offenders were identified as having been referred to SLCC during the study period. The author further classified these offenders into subgroups based on their participation (or lack thereof) in the treatment program (see qualitative description of groups in the results section).

For the comparison group, 309 provincial offenders who had not attended a prison treatment program (i.e., did not attend SLCC or the treatment program at Ford Mountain Correctional Centre [FMCC], which also provided some treatment for sexual offenders) were identified through the RIS database using the sample inclusion criteria. Of the 309 offenders, most had short sentences and thus were not comparable to the majority of those referred to SLCC. Offenders with sentence lengths greater than 270 days and lengths of admission greater than 175 days were selected because these cut-offs closely matched those referred to SLCC. Provincial record keepers indicated that many of the files belonging to offenders released in 1994 and 1995 were destroyed according to provincial record keeping protocol. As a result, only the files of the comparison group offenders released in 1996 and 1997 were included in the study to prevent possible selection effects. Files for all individuals released from SLCC between 1994 and 1997 were available, and thus were included in the study. In total, 43 non-treatment comparison cases were selected.

Procedure

Demographic Information

Demographic and offence history information was obtained by reviewing British Columbia Corrections files. Coded variables included age, race, prior sentencing offences and dates, admission dates, and variables concerning the relationship of the offender to the victim(s). The author performed all data collection.

Treatment Information

Offender intake assessment and treatment contact information was obtained by reviewing Forensic Psychiatric Service files. Coded information included date referred for treatment, release date, length of time in treatment, and attendance in the different treatment components offered (e.g., group and individual therapy, and sex offender modules). Reason for termination from treatment (e.g., end of sentence, parole, deemed unsuitable for treatment) was also collected. Additional information regarding special accommodations, such as offering an offender one-on-one therapy due to cognitive deficits, was recorded.

Control Variables

Static-99: A Static Risk Instrument

One useful instrument that allows researchers to assess static variables associated with sexual recidivism is the Static-99 (Hanson & Thornton, 1999). The Static-99 (see Appendix B for list and description of items) was created from

amalgamating variables from two sex offender risk assessment measures, the Rapid Risk Assessment for Sex Offence Recidivism [RRASOR] (Hanson, 1997b) and Structured Anchored Clinical Judgement [SACJ-Min] (Grubin, 1998). The variables are: male victims, never married, non-contact sex offences, unrelated victims, stranger victims, prior sex offences, current non-sexual violence, prior non-sexual violence, four or more sentencing dates, and if the offender is between the ages of 18 and 24.99 years. Strengths of this measure include: variables that have been empirically shown to be related to recidivism, explicit rules on how variables are to be coded and tabulated, and all variables are typically contained in correctional files. Weakness of this instrument are that it does not consider all factors related to risk and it offers only moderate predictive accuracy (Harris, Phenix, Hanson, & Thornton, 2003). The original validation of the Static-99 indicated that it moderate predictive accuracy for both sexual recidivism ($r = .33$, ROC area = .71) and violent (including sexual) recidivism ($r = .32$, ROC area = .69) (Hanson & Thornton, 1999). Static-99 replication studies with 17 new samples (representing 4,514 offenders) indicated a mean reported ROC area value of .72 (Harris, Phenix, Hanson, & Thornton).

Recidivism Information

Access to offender client histories was provided by the Ministry of the Attorney General, Corrections Branch, in British Columbia. For those participants who offended, the first charge and/or conviction following release from incarceration was recorded and placed into one of four offence categories:

- a) sexual offences (e.g., sexual assault, indecent acts)
- b) violent offences (non-sexual violent offences such as robbery and assault)

c) general offences (e.g., theft, break and enter), and

d) technical offences (e.g., breach of parole or probation)

Subsequent new events were recorded if they were in a different offence category. Time at risk until the new event was calculated, which in most cases was the length of time from release from incarceration until the new event. In some cases, an offender was re-incarcerated for a new offence, released, and then re-offended in a different offence category. The time at risk for the most recent offence was calculated, minus the time incarcerated. This adjusted time at risk calculation more accurately reflects time at risk since offenders are unable to access victims while incarcerated. New events occurring after December 3, 2003 were not recorded.

RESULTS

Data Analyses

Frequencies were calculated to describe sample demographics, offences, sentences, and risk profiles. Independent Samples *t* tests were performed to test for group differences on Static-99 variables and age at release. Outcome was examined by looking at a) sexual offences, b) violent offences, and c) general offences. In addition, composite outcome scores were generated for d) sexual and/or violent offences, and e) sexual and/or violent and/or general offences. Technical offence data was recorded to calculate time at risk for the other offence categories, but was not used as an outcome measure.

Recidivism rates are provided for each offence category based on the complete follow-up period, and then at a fixed time period. These analyses did not control for Static-99 group differences. The main recidivism analyses used the Cox proportional hazards regression model, a form of survival analysis. The Cox regression model uses the hazard function to determine the influence of predictor variables, called covariates, on a given dependent variable (SPSS, 1999). The hazard function is an estimate of the likelihood of failure at a given point in time. In this study, the dependent variable, also known as the terminal event, or failure, was the time until re-offence. The advantage of the Cox regression model compared to other models (e.g., linear regression, or Kaplan-Meier survival analysis) is that the time at risk can be different for individuals in the sample, and the relative influence of more than one predictor variable can be examined in the same model (Allison, 1984; SPSS, 1999). That is, the influence of a given variable

is estimated in light of any other predictor variables included in the model. Another advantage of this model is that cases that do not experience failure (i.e., re-offend) are censored and contribute to the estimation of the model. For example, even though a case did not experience the terminal event (e.g., re-offence), the information from that case (e.g., predictor variables and time at risk) contributes to the estimation of the model. Cases were also censored if an individual died after release ($n = 2$).

Research Question 1

Was the group of offenders referred to SLCC similar to the comparison group?

Demographic

There were strong similarities between offenders referred to SLCC and the comparison group for both age at the beginning ($M = 42.7$ and $M = 42.1$ years respectively) and end ($M = 43.6$ and $M = 43.0$) of release of the index offence incarceration. Differences were not statistically significant. Also similar were education, marital status, and race variables. (See Tables 1 and 2, and Figures 1 - 4).

Table 1:

Age at Index and Release

Variable	Referred to SLCC $n = 224$		Comparison Group $n = 43$		<i>P</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Age at Index	42.66	12.63	42.25	13.56	.810
Age at Release	43.56	12.68	42.97	13.48	.785

Figure 1:

Education – Referred to SLCC

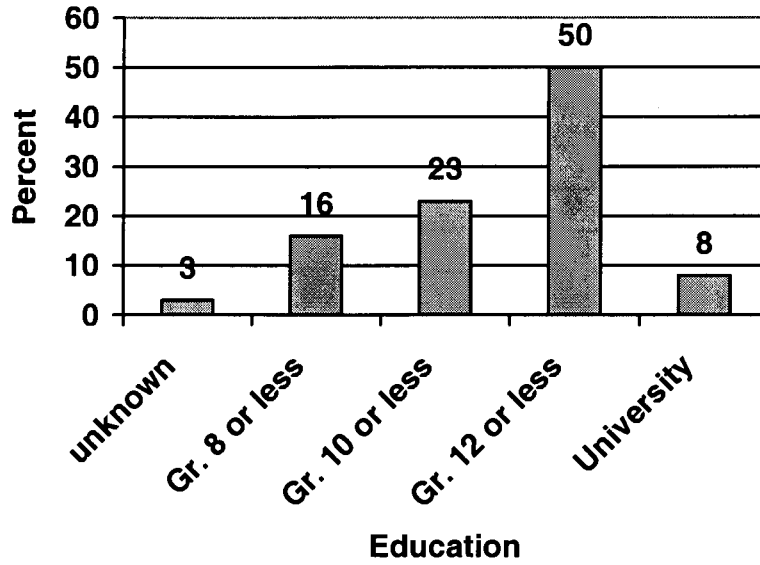


Figure 2:

Education – Comparison Group

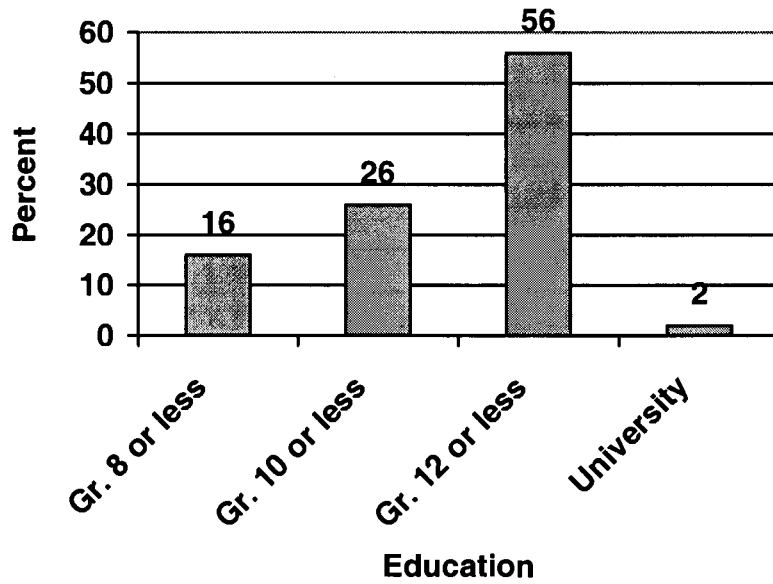


Figure 3:

Marital Status – Referred to SLCC

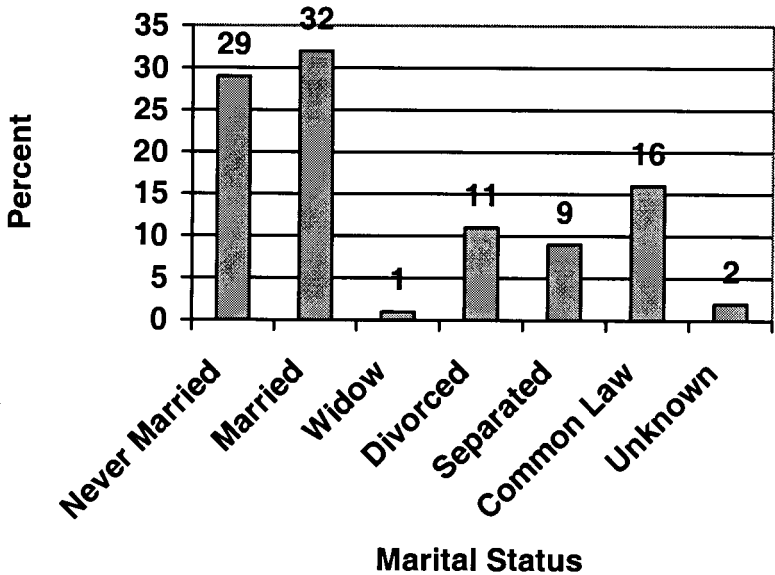


Figure 4:

Marital Status – Comparison Group

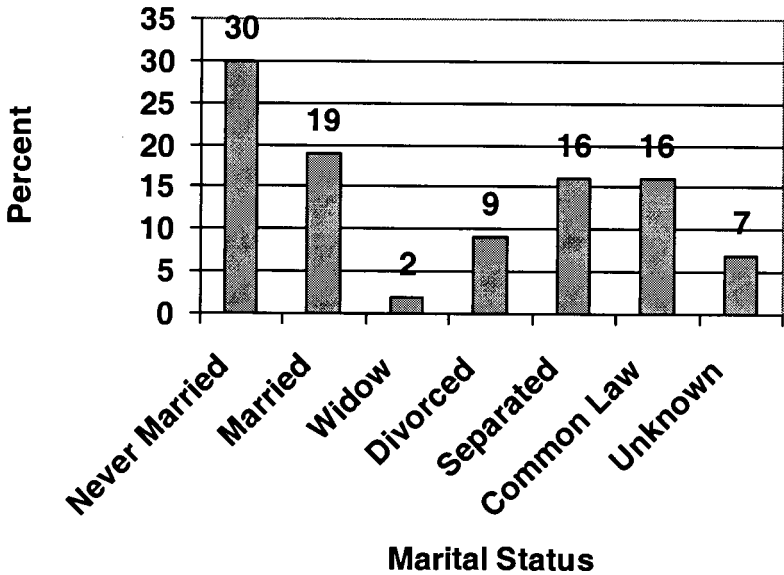


Table 2:**Race – Cases Referred to SLCC**

Race	Referred to SLCC $n = 224$		Comparison Group $n = 43$	
	n	Percentage of Group	n	Percentage of Group
Caucasian	174	77.7	30	69.8
Aboriginal	45	20.1	13	30.2
Other	5	2.2	0	0

Sentence and Admission Length

Consistent with how the groups were selected, Table 3 shows that cases referred to SLCC had similar sentence lengths with the comparison group ($M = 492$ days, $SD = 169$ and $M = 473$ days, $SD = 166$ respectively). Cases referred to SLCC also had lengths of admission that were similar to the comparison group ($M = 329$, $SD = 128$, and $M = 310$ days, $SD = 110$ respectively). Independent Samples t tests indicated that groups were not significantly different on these variables. A small percentage of cases referred to SLCC had both shorter and longer lengths of admission than the comparison group, which was a result of the criteria used to select comparison group (i.e., sentence length greater than 270 days and length of admission greater than 175 days).

Table 3:**Sentence and Admission Length**

Variable	Referred to SLCC <i>n</i> = 224				Comparison Group <i>n</i> = 43				<i>p</i>
	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	
Sentence Length	492.2	168.9	90	719	472.8	166.2	270	719	.492
Length of Admission	328.9	129.0	56	731	309.9	110.0	179	498	.367

Offence Type

Both groups were comprised of offenders whose victims were most often minors (79.3 % minors vs. 18.0% adults). The treatment group had a larger percentage (84.3%) of minor victims compared to the comparison group (69.0%) (see Table 4).

Table 4:**Victim Distribution Table**

Victim	SLCC <i>n</i> = 224		Comparison <i>n</i> = 42		Total <i>N</i> = 266	
	<i>n</i>	Percent of SLCC Group	<i>n</i>	Percent of Comparison Group	<i>N</i>	Percent of Total Sample
Adult	35	15.6%	13	30.9%	48	18.0%
Minor	189	84.3%	29	69.0%	211	79.3%

Note. One case from the comparison group was not included in the calculations due to lack of victim information.

Static-99 Variables

Missing Variables

Of the entire sample of 267 cases, 245 (91.8 %) had complete information for all 10 Static-99 risk variables (see Table 5). Missing Static-99 items included “Stranger Victim” ($n = 11$), “Unrelated Victim” ($n = 6$), “Prior Non-Sexual Violence” ($n = 3$), and “Non-Contact offences”, “Index Non-Sexual Violence”, and “Male Victims” (all $n = 2$). Table 5 also shows that the Comparison group had a greater percentage of cases with missing data than the group of individuals referred to SLCC.

Table 5:

Missing Static-99 Variables

Missing Risk Variables	Referred to SLCC		Comparison		Total	
	<i>n</i>	<i>P</i>	<i>n</i>	<i>P</i>	<i>N</i>	<i>P</i>
0	218	97.3	28	65.1	245	91.8
1	6	2.7	12	27.9	18	6.7
2	0	0	2	4.7	3	1.1
5	0	0	1	2.3	1	.4

Missing Item Estimation

For cases missing one or two Static-99 items, values were estimated based on the variable mean for the entire sample. The case missing five items was withdrawn from the sample because of lack of risk information.

Item and Total Score Summary

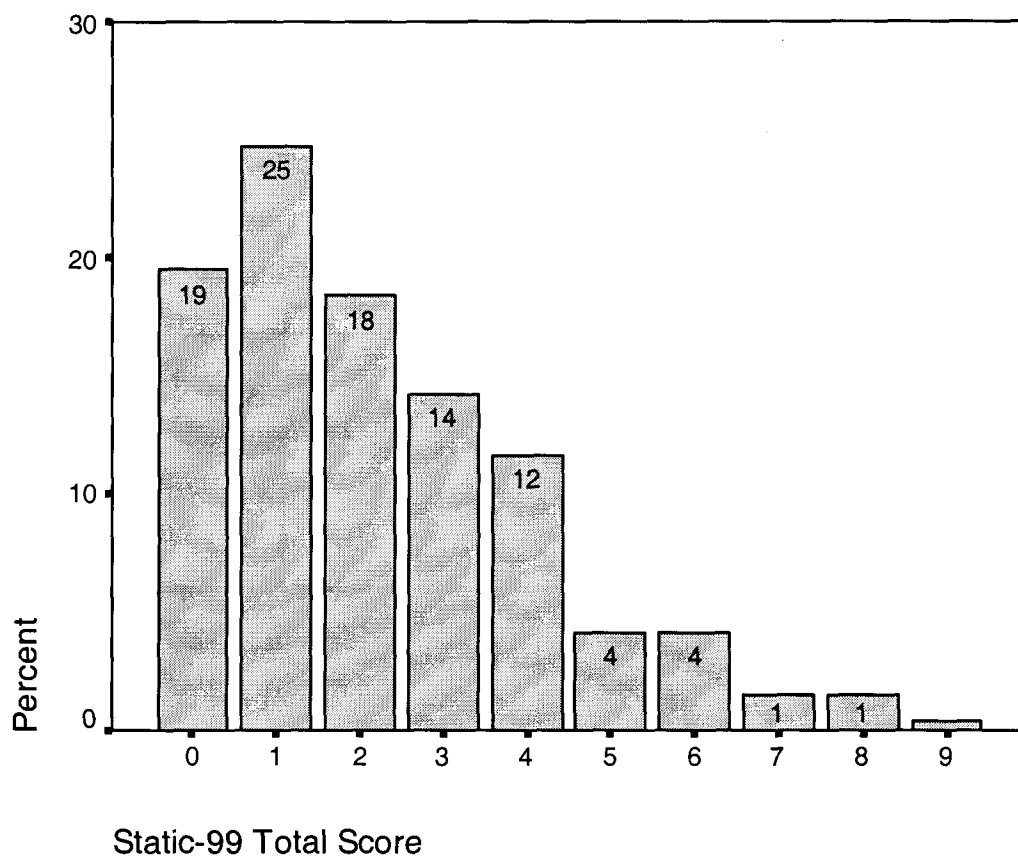
Table 6 shows the Static-99 variable means across groups. Variables that were statistically different between groups were, “Prior Sentencing Dates”, “Non-Contact Sex Offence”, “Index Non-Sexual Violence”, and “Stranger Victims.” While the difference between groups on a given variable may be statistically significant, it is important to know if the differences are meaningful. Omega squared (ω^2) provides a measure of the relative treatment magnitude, or an estimate of the proportion of variance that is explained by a treatment condition (Keppel, 1991). Values range from 0 – 1.0, with zero indicating no treatment effect and a value of one indicating that all variance is attributed to treatment. In the current study, ω^2 values were calculated to estimate the variance on individual Static-99 variables explained by assignment to either the group referred to SLCC or the comparison group. Results indicated that variance accounted for by group assignment was small - medium for “Prior Sentencing Dates” and “Index Non-Sexual Violence.” Variance accounted for by group assignment on the “Stranger Victim” variable was small, and there was no difference for the remaining variables.

Figure 5 shows that 62.7% of the sample had a Static-99 Total score of two or less. The distribution also indicates a pattern of reduced numbers for each Static-99 unit increase.

Table 6:**Static-99 Score Summary**

Static-99 Variable	Referred to SLCC <i>n</i> = 224		Comparison Group <i>n</i> = 43		<i>p</i>	ω^2
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Prior Sex Offences (0-3)	.45	.85	.26	.54	.054	.004
Prior Sentencing Dates	.25	.43	.49	.51	.005	.034
Non Contact Sex Offence	.04	.20	.00	.00	.003	.003
Index Non-Sex Violence	.04	.22	.19	.40	.030	.036
Prior Non-Sex Violence	.21	.41	.34	.47	.119	.007
Unrelated Victims	.64	.48	.64	.45	.951	.004
Stranger Victims	.15	.36	.02	.05	.000	.017
Male Victims	.17	.38	.15	.35	.620	.003
Young	.05	.23	.02	.15	.351	.000
Single	.20	.40	.12	.32	.115	.003
Static-99 Total Score	2.24	2.01	2.16	1.53	.798	.004

Note. *n* = 43 for the comparison group on variables 1, 2, 5, 9, and 10. *n* = 42 for the others. Variables scored 1 or 0, except first (possible score of 3) and last variables (possible score of 12). Higher scores indicate higher levels of risk. Calculated ω^2 values of .01 are considered “small,” and values of .06 are considered “medium.”

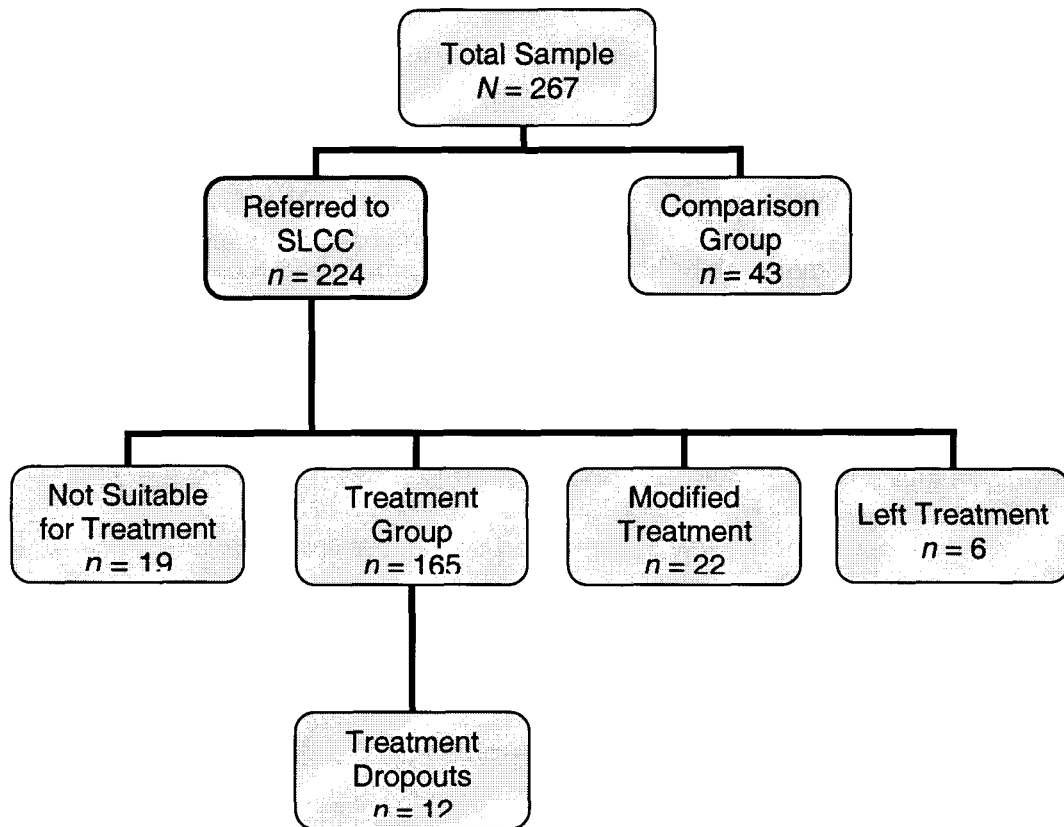
Figure 5:***Distribution of Static-99 Total Scores for Entire Sample******Qualitative Description of Groups***

Individuals referred to SLCC were further classified into one of five groups by the author. These groupings are reflective of the different types of treatment exposure that offenders received. Also included is a qualitative summary of available information regarding characteristics, behaviours, or experiences that led them to be classified in the subgroups. The comparison group was not broken down further into subgroups, but also

contains qualitative descriptions. See Figure 6 for a breakdown of the different groups of offenders.

Figure 6:

Offender Flow Chart



Offenders Referred to SLCC

Treatment Group, included individuals who attended the formal treatment described in the SLCC Program Description (SLCC, 1998), namely, participation in the weekly psychotherapy group (n = 165). Among the treatment group were individuals who missed treatment for violent/disruptive behaviour (n = 4), two of whom were disciplined

off-site for more than four weeks. These cases were included in the treatment group because they returned to SLCC and completed their treatment.

Dropout Group, included those who began treatment but dropped out ($n = 12$). Several cases were taken out of treatment because of violent/disruptive behaviour in camp ($n = 5$), others for non-compliance with treatment ($n = 6$), and another because he was grooming a younger inmate for possible inappropriate sexual behaviour.

Not Suitable for Treatment Group, included those deemed not suitable for treatment at intake ($n = 19$). These individuals were either in denial of their offence/refusing treatment ($n = 8$) or had a sentence too short to participate in the program ($n = 6$). Other individuals included in this group were those possessing a medical condition preventing them from being incarcerated at a prison camp ($n = 5$).

Dropout for Non-Treatment Reasons Group, included those who left treatment for a reason that was not related to their performance while in treatment ($n = 6$). Reasons included medical concerns ($n = 3$), new charges requiring them to leave treatment ($n = 1$), escape from custody before treatment began ($n = 1$), and being expelled by Correctional staff from treatment against the wishes of the treatment team ($n = 1$).

Modified Treatment Group, included those who were provided with some treatment services (e.g., one-on-one therapy), but were unable to fully participate in parts of the treatment program such as the psychotherapy group or treatment modules ($n = 22$). Reasons for being in this group included having a short sentence, cognitive impairment, and some degree of denial. One individual from this group dropped out of treatment due to disruptive behaviour. He was included in this subgroup (as opposed to

the dropout group) because he was judged by the author as having a treatment had a experience more closely resembling those in the modified treatment group.

Comparison Group

In the Corrections files of the comparison group, some cases ($n = 17$) contained notes from a Classification Officer (i.e., an individual from Corrections that determines where an offender serves his sentence) stating reasons for classifying the offender to a particular prison. Five contained notes from the Classification Officer that the offender had medical concerns that prevented incarceration at SLCC. (Of note, SLCC was a work camp located at a significant distance from emergency medical attention). For example, of the five, one individual was significantly obese to the degree that he would not have been able to participate in the work camp, another had a history of serious heart difficulties, and one had Fetal Alcohol Syndrome, which was thought to make him unsuitable for treatment. Seven additional offenders exhibited some degree of denial, including one in the process of appealing their conviction or sentence. Another was not sent to SLCC because of plans for him to receive an alternative “Native based” treatment upon release. Several other cases ($n = 3$) contained a note that the offender had a sentence too short to participate in the SLCC treatment, and one refused treatment because therapy conflicted with his religious convictions. Further, information in one of the files of an offender released in 1996, reported an 8-week waiting list to get into SLCC, which could have been the reason for not referring the offender to SLCC. It is noteworthy that many files ($n = 10$) contained a sentencing sheet where the Judge specifically recommended the offender serve his sentence at SLCC.

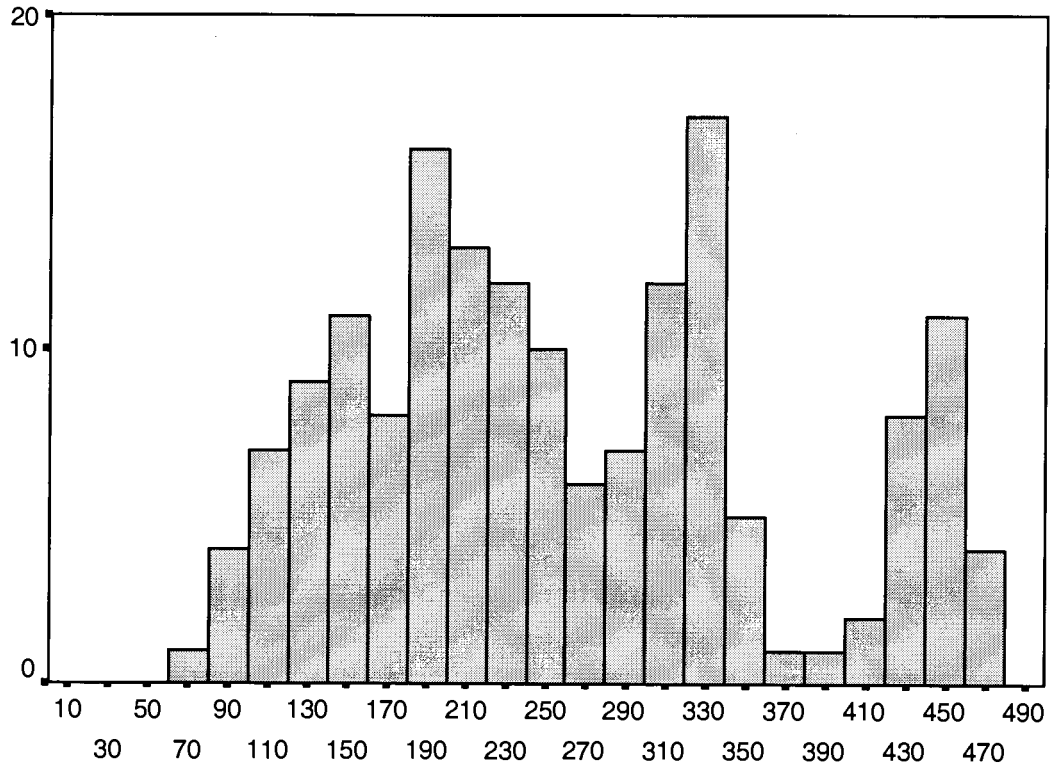
Research Question 2

Of the offenders who attended treatment at SLCC, how long did they stay in treatment, and why did they stop treatment?

Of the offenders in the treatment group ($n = 165$), the mean length of time in treatment was 260 days (approximately 8.5 months; $SD = 105.8$). Time in treatment ranged from 73 days (approximately 2.5 months) to a maximum of 468 days (approximately 15.5 months). Figure 7 shows a wide range of time spent in treatment. In the SLCC Program Description (1998, p. 2), one of the criteria for admission listed included that the offender “has at least 10 to 12 months remaining in his sentence, although inmates with shorter sentences may be accepted.” If the 10 month minimum is said to reflect the amount of time required for treatment, only 63% ($n = 104$) of individuals in the treatment group were in the program for 10 months or longer. The group of cases in treatment 10 months or longer represent 46% of all offenders referred to SLCC ($n = 224$).

Offenders in the treatment group and offenders in the comparison group were most often released at end of sentence (83% and 88.4% respectively). Likewise, these groups were less likely to be released on parole (17% and 11.6%).

Figure 7:
Days in Treatment



Days in Treatment

Research Question 3

Did treatment predict reduced levels of recidivism?

Time at Risk

Overall Sample

The mean time at risk, which is the length of time from release of incarceration until the end of the study period (December 3, 2003) was 7.51 years ($SD = .99$ years). Given that offenders were released at different times, the range was 5.5 to 9.8 years at risk.

Offenders Referred to SLCC and Comparison Group

The mean time at risk for all offenders referred to SLCC was somewhat longer ($M = 7.60$ years, $SD = 1.02$) than the comparison group ($M = 7.01$ years, $SD = .55$), $t(265) = 5.48$, $p = .00$ (two-tailed). This difference was expected since the Corrections files for the comparison group offenders released in 1994 and 1995 (the first two years of the study period) were not available to be coded. The maximum time at risk period for the comparison group (7.87 years) was almost 2 years less than of the group referred to SLCC (9.76 years). See Table 7.

Table 7:**Possible Years at Risk**

Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Entire Sample	267	7.51	.99	5.45	9.76
Referred to SLCC	224	7.60	1.02	5.45	9.76
Treatment	165	7.61	.99	5.94	9.50
Dropout	12	7.85	.97	6.49	9.23
Not Suitable	19	7.55	1.27	5.45	9.76
Dropout for non-treatment reasons	6	7.78	.78	6.77	8.89
Modified treatment	22	7.37	1.14	5.98	9.67
Comparison	43	7.01	.55	5.92	7.87

Unadjusted Recidivism Rates

Table 8 reflects the different rates of offending across groups and offence categories for the complete follow-up period ($M = 7.51$ years). These rates do not control for differences in length of time at risk, time until re-offence, or static risk as measured by the Static-99. Descriptively, these values indicate lower rates of recidivism for offenders referred to SLCC, compared to the comparison group. Treatment dropouts had the highest rates for every recidivism outcome. Since time at risk was unequal across offenders, follow-up was then fixed at 5.45 years to ensure everyone was at risk for the same period of time. Offences that occurred after this time were not recorded. Table 9 indicates a pattern of recidivism at fixed follow-up that is similar to the rates for complete follow-up (Table 8).

Table 8:**Unadjusted Recidivism Rate at Complete Follow-Up**

Group	<i>N</i>	Sex Offence	Violent Offence	General Offence	Sexual or Violent Offence	Sexual or Violent or General Offence
Overall Sample	267	.09	.12	.11	.18	.24
All Referred to SLCC Treatment	224	.08	.10	.10	.15	.20
Dropout	165	.06	.07	.08	.12	.15
Not Suitable for Treatment	12	.25	.33	.25	.42	.50
Dropout for non- treatment reasons	19	.11	.11	.05	.16	.21
Modified Treatment	6	.17	.17	.00	.17	.17
Comparison Group	22	.14	.18	.18	.27	.41
	43	.14	.23	.19	.35	.44

Table 9:**Unadjusted Recidivism Rate at 5.5 Years Follow-Up**

Group	<i>N</i>	Sex Offence	Violent Offence	General Offence	Sexual or Violent Offence	Sexual or Violent or General Offence
Overall Sample	267	.08	.12	.10	.17	.22
All Referred to SLCC Treatment	224	.07	.10	.09	.14	.18
Dropout	165	.04	.07	.08	.10	.13
Not Suitable for Treatment	12	.17	.33	.25	.42	.50
Dropout for non- treatment reasons	19	.11	.11	.00	.16	.21
Modified Treatment	6	.17	.17	.00	.17	.17
Comparison Group	22	.14	.18	.18	.27	.41
	43	.14	.23	.19	.35	.44

Static-99 Total Score Correlations with Offending

Correlations and receiver operating characteristic (ROC) curves were calculated for the Static-99 Total score and sexual recidivism. An ROC curve is a measure used to estimate the discriminative ability of a rated or ranked instrument to accurately identify an outcome (Hanley & MacNeil, 1982). A value of .5 equals chance and denotes no predictive accuracy, and a value of 1.0 indicates perfect predictive accuracy. Table 10 shows that the Static-99 was moderately related ($r = .229$, ROC area = .722) with sexual re-offences in this sample. Though the Static-99 was not specifically designed to predict risk of non-sexual offences, correlations and ROC curves indicate similar predictive associations with other recidivism outcomes.

Table 10:

Static-99 Correlations and ROC with Recidivism

Static-99 Total Score	Sex Offence	Violent Offence	General Offence	Sexual or Violent Offence	Sexual or Violent or General Offence
Correlation	.229*	.220*	.262*	.283*	.324*
ROC Area	.722	.714	.740	.721	.735

Note: * $p < .01$.

Survival Analysis: Cox-Regression Model

Cox regression analyses were performed for each outcome: sexual offence, violent offence, general offence, sexual and/or violent offence, and sexual and/or violent and/or general offence. Predictor variables were the Static-99 Total score (entered as a continuous variable with a range of 0 - 12) and referral to SLCC (1 = Treatment; 0 =

Comparison). Two series of analyses were performed, each with different inclusion criteria for the treatment group. The first series used an inclusive grouping, which consisted of all individuals referred to SLCC for treatment; including dropouts, those who received modified treatment, and those not seen as suitable for treatment. In the second series of analyses, a restrictive treatment group was comprised of those who received the SLCC treatment and its dropouts. It did not include those not seen as suitable for treatment at intake, or those who received a modified treatment.

Tables 11 and 12 show the Cox regression analyses for both the inclusive and restrictive treatment groupings. For both series of analyses, the Static-99 Total score was an effective predictor for each outcome. For every unit increase on the Static-99, the relative risk [$Exp(B)$] of re-offence was approximately 30 – 40% greater than the previous unit. For example, in the first series of analyses (see Table 11), the $Exp(B)$ value was 1.365 for Static-99 Total score when outcome was a new sexual offence. This value indicates that for every unit increase in Static-99 Total score, the risk of a new sexual offence increases by 36.5%. Both predictor variables, the Static-99 and referral to SLCC, were used estimate outcome in the same equation. As a result, the contribution associated with the Static-99 Total score is considered in light of the contribution of the other predictor variable, referral to SLCC.

With respect to the covariate, referral to SLCC/attendance in treatment, Cox regression analyses produced a similar pattern of results across the two series of analyses. Referral to SLCC/attendance in treatment was not significantly related to the sexual offence outcome. To some extent this was not surprising given the low base-rate of this behaviour (25 occurrences in the sample of 267). Also, referral to SLCC/attendance in treatment was not an effective predictor of the general offence

outcome. However, when outcome was defined as violent offence, sexual and/or violent offence, or sexual and/or violent and/or general offence, being part of the treatment group predicted reduced risk. For example, in the first series of analyses, those referred to SLCC had approximately 33% of the risk for a sexual or violent offence, compared to the comparison group. Again, the *Exp (B)* values are interpreted in light of the other predictor, the Static-99. Figures 8 and 9 provide a graphical display of the survival curves for all those referred to SLCC against the comparison group (including the inclusive and restrictive definitions), when outcome is defined as a sexual and/or violent offence.

Table 11:**Cox Proportional Hazards Model for Referral to SLCC and Static-99 Total Score Inclusive Treatment Group vs. Comparison Group**

Outcome	Variable	<i>B</i>	<i>SE</i>	<i>Wald</i>	<i>df</i>	<i>Sig.</i>	<i>Exp (B)</i>
Sex Offence	Referred to SLCC	-.743	.476	2.432	1	.119	.476
	Static-99 Total Score	.311	.086	13.199	1	.000	1.365
Violent Offence	Referred to SLCC	-1.001	.401	6.219	1	.013	.368
	Static-99 Total Score	.283	.077	13.433	1	.000	1.327
General Offence	Referred to SLCC	-.801	.444	3.259	1	.071	.449
	Static-99 Total Score	.332	.079	17.761	1	.000	1.393
Sexual or Violent Offence	Referred to SLCC	-1.106	.324	11.620	1	.001	.331
	Static-99 Total Score	.289	.063	20.972	1	.000	1.335
Sexual, Violent of General	Referred to SLCC	-1.174	.287	16.697	1	.000	.309
	Static-99 Total Score	.292	0.055	28.311	1	.000	1.339

Note. The Wald value indicates if the estimated coefficient *B* is different from 0 of the population. Bold shows Wald value is statistical significant at 0.05 level.

Table 12:**Cox Proportional Hazards Model for Treatment Group and Static-99 Total Score Restrictive Treatment Group vs. Comparison Group.**

Outcome	Variable	<i>B</i>	<i>SE</i>	<i>Wald</i>	<i>df</i>	<i>Sig.</i>	<i>Exp (B)</i>
Sex Offence	SLCC Treatment	-.855	.501	2.918	1	.088	.425
	Static-99 Total Score	.258	.103	6.204	1	.013	1.294
Violent Offence	SLCC Treatment	-1.181	.429	7.587	1	.006	.307
	Static-99 Total Score	.342	.087	15.348	1	.000	1.408
General Offence	SLCC Treatment	-.852	.462	3.393	1	.065	.427
	Static-99 Total Score	.363	.086	17.776	1	.000	1.438
Sexual or Violent Offence	SLCC Treatment	-1.230	.344	12.757	1	.000	.292
	Static-99 Total Score	.300	.073	17.015	1	.000	1.350
Sexual, Violent of General	SLCC Treatment	-1.363	.309	19.501	1	.000	.256
	Static-99 Total Score	.321	.063	25.541	1	.000	1.378

Note. The Wald value indicates if the estimated coefficient *B* is different from 0 of the population. Bold shows Wald value is statistical significant at 0.05 level.

Figure 8:

Survival Curve for a Sexual or Violent Offence – Inclusive SLCC Group vs. Comparison

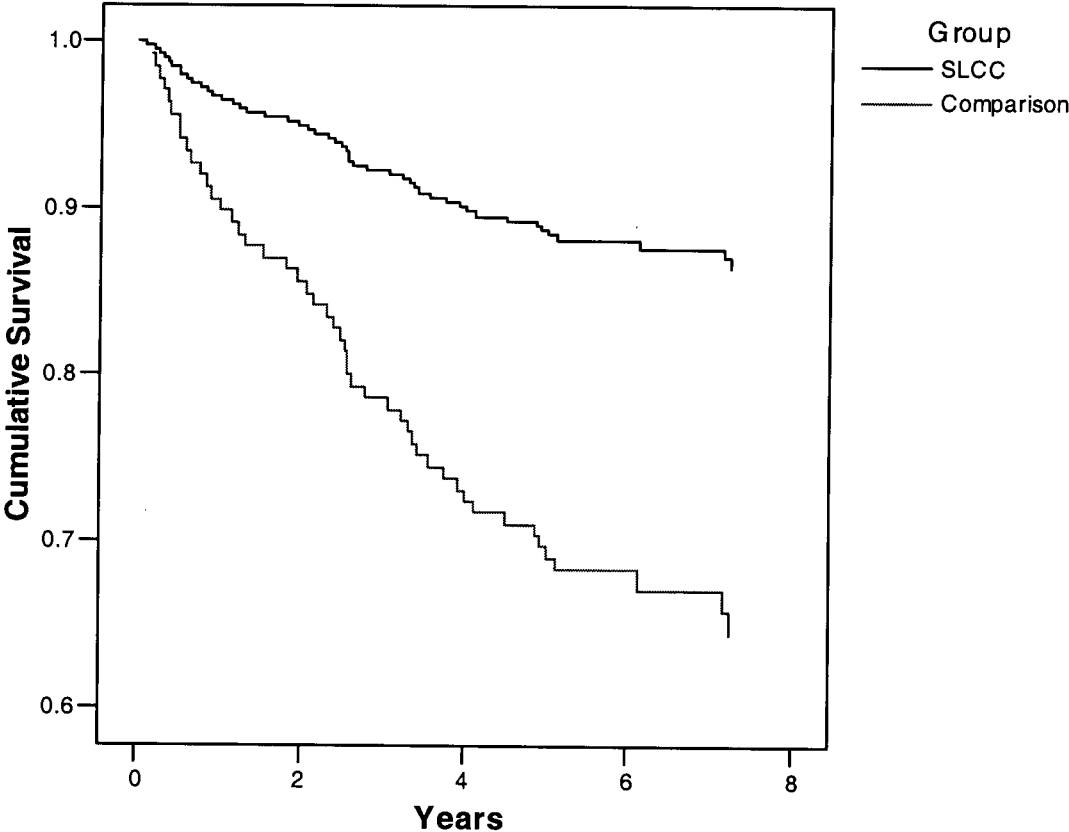
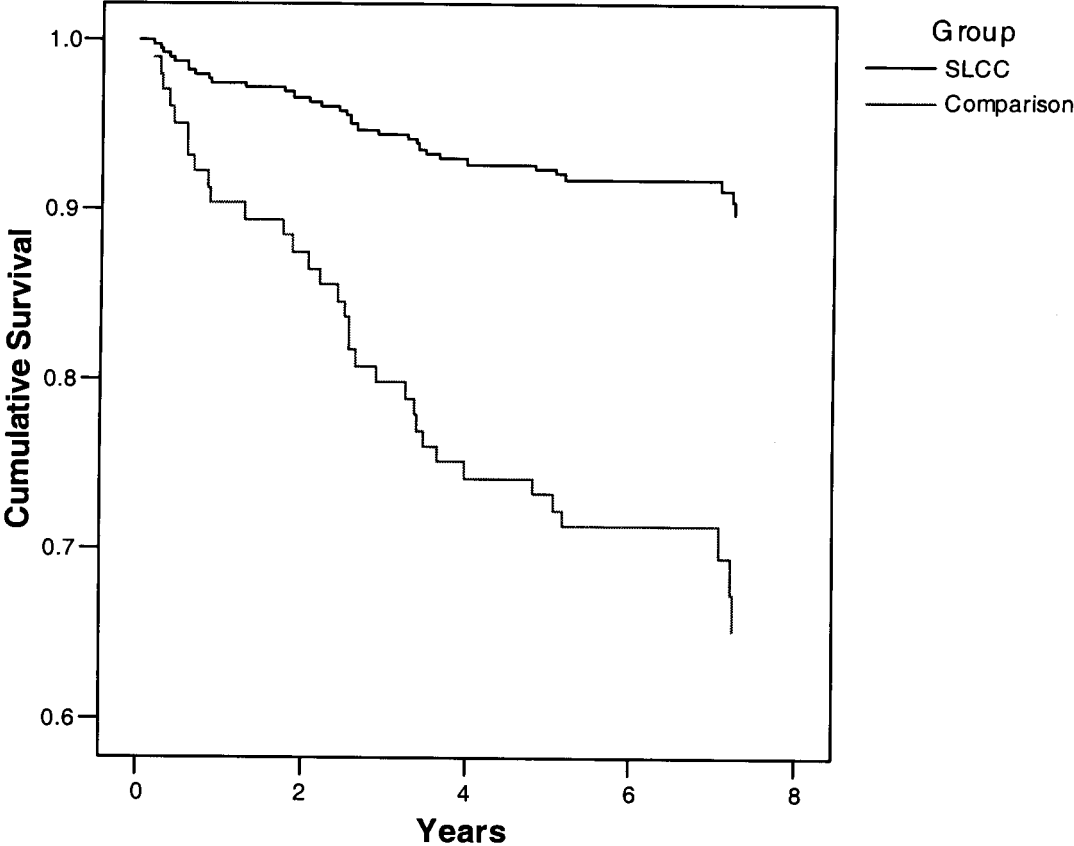


Figure 9:
Survival Curve for a Sexual or Violent Offence
– Restrictive SLCC Group vs. Comparison



DISCUSSION

Were the Groups Comparable?

The goal of this study was to compare a treated and untreated group of sexual offenders who were assumed to be similar on a number of meaningful variables. With respect to those referred to SLCC, extensive information was reviewed to determine who received treatment, what they did in treatment, and why they terminated treatment. The comparison group was comprised of a relatively small sample of offenders matched on sex offence, sentence length, and length of admission. For both treated and untreated groups, demographic and risk variables were collected to establish pre-treatment levels of risk. There were differences on several Static-99 risk variables between offenders referred to SLCC and offenders in the comparison group. However, the omega squared index revealed that these differences were relatively small and not meaningful. Generally, the groups were similar when compared on demographic and risk variables. Further, statistical procedures (i.e., Cox regression) were used to control for variance accounted for by the static risk variables (i.e., Static-99).

Critics will question why offenders in the comparison group were not referred for treatment and suggest the possibility that those referred to SLCC were higher functioning or lower risk in some undetected way. Indeed, a drawback of research designs that use incidental (or non-random) assignment is that despite efforts to control many risk related variables, equivalence between groups cannot be guaranteed. However, the qualitative review of both groups offers some additional support for the claim of equivalence. Specifically, the cases referred to SLCC represented a

heterogeneous sample; many were in various forms of denial/not interested in treatment, in poor physical health, were experiencing cognitive/psychological impairment, and many had short custodial sentences (e.g., less than 10 months at SLCC). Many individuals were deemed not suitable for treatment, dropped out of treatment, or required modified treatment, or were in treatment for a relatively short period of time. It was determined that only 46% of cases referred to SLCC participated in treatment (the formal treatment described in the SLCC program description) for 10 months or longer. The heterogeneity of the sample was surprising given the admission criteria listed in the SLCC Program Description (SLCC, 1998), but not inconsistent with SLCC staff interview comments noted in Laws' program review related to the willingness of the program to accommodate different offenders (Laws, 2000).

A qualitative review of the comparison group revealed that many cases had a specific recommendation from the sentencing Judge that they be sent to SLCC. Although complete information regarding classification was not available, several factors might explain why these offenders were not referred to SLCC. First, some offenders were listed as having possible medical concerns that made attendance at SLCC unsafe from a Corrections perspective (e.g., distance from medical care). Also, it was noted in one file that there was an eight week waiting list to attend SLCC in 1996 (it is not clear the existence or length of a waiting list at other times), possibly preventing classification officers from referring at SLCC due to lack of space.

Were Recidivism Rates Different Between Groups?

Recidivism rates were provided for offenders referred to SLCC and the comparison group based on complete ($M = 7.51$ years) and fixed ($M = 5.45$) follow-up

times. Descriptively, recidivism rates of offenders referred to SLCC were lower than the comparison group in each outcome category. Consistent with other studies (e.g., Hanson et al., 2002), violent recidivism was higher than sexual recidivism. Also consistent with existing research, treatment dropouts were associated with the highest rates of re-offending in most offence categories.

As expected, the Static-99 was positively and moderately related with new offences in all the outcome categories. For the main statistical analyses, Cox regression analyses estimated the influence of both predictor variables (Static-99 and referral to SLCC/ treatment) in light of each other. Results indicate that the Static-99 offered statistically significant predictive ability; each unit increase in total risk score was related to increased likelihood to re-offend in every offence category. Results also indicate that treatment offered additional predictive value for some of the outcomes. Specifically, having been a member of the treatment group was associated with reduced risk versus the comparison group for violent, sexual and/or violent, and sexual and/or violent and/or general offences, but not with sexual, or general offences. Treatment as a predictor approached significance with these latter outcomes and it could be argued that the low base rate of sexual offending, and relatively small sample, reduced the likelihood of finding a statistical difference even if one existed.

Given research findings indicating differences in recidivism among treatment completers and individuals screened from treatment, two separate series of analyses were conducted to reflect inclusive and restrictive treatment groupings. Analyses for both groupings produced similar results.

What Do We Know About the Treatment Program?

The results provide support for the value of treatment in reducing some forms of offending. However, it is difficult to identify what worked, and why. For example, it is impossible to determine how much treatment was necessary, what aspects of treatment resulted in change, and were these aspects were responsible for change? These questions are difficult to answer since no within subject measures of change were administered. Further, it is difficult to make generalizations about what treatment was as a whole. For example, the SLCC program description outlined the treatment that was potentially available to clients, but short sentence lengths and unique client needs resulted in offenders receiving different treatment experiences. Many offenders were not able to attend all of the sex offender modules, some received individual therapy exclusively, while others received individual as an adjunct to the standard program. Some offenders attended a few months of the weekly group therapy component, whereas others received more than a year. Overall, different offenders were exposed to different components and doses of treatment.

It is important to note that most offenders referred to either SLCC or the comparison group were assessed to be lower risk, as measured by the Static-99. For example, 62.7% of the entire sample had a static risk score of that was 2 or less, which translates into a “low” to “medium-low” level of risk (Hanson & Thornton, 1999). It is not clear that these results would be similar with a sample of higher risk individuals. Similarly, the treatment program at SLCC was part of a comprehensive program which involved work and release planning. Findings from this group of offenders may not be generalisable to other samples of offenders.

Limitations/Considerations of the Data Set

An important limitation with the data set is that recidivism data only accounts for offences that occurred in the province of British Columbia. New offences that occurred out of province were likely not detected. Also, offenders who left the country or died after their probation sentence would falsely be assumed to be at risk (and without any new offences). Although unlikely, the possibility exists that one group, (e.g., the treatment group) left the province at a disproportionately high rate, re-offended, and were not detected. This scenario is possible, but there does not seem to be any reason why this would have occurred. The most likely impact of detecting only offences recorded on the BC database is that offending base rates for the entire sample was reduced, resulting in reduced statistical power.

An additional limitation is that three of the comparison group cases were missing information on two or more of the Static-99 variables. Missing variables were assigned the value of the item mean for the entire sample. Since the item means were typically closer to zero, this method of calculation may have underestimated risk for these cases. The case with five of the 10 risk items missing was taken out of the analysis due to this concern. The comparison group had a disproportionate number of missing variables, making it possible that on average risk as estimated by the Static-99 was underestimated for this group.

Additional Research Challenges

It would not be unexpected for readers new to the area of sex offender treatment evaluation to express a combination of dismay and confusion regarding the lack of

consensus in the research. While understanding that there are a number of research considerations and challenges, it still may not be clear why so few good studies exist. A brief description of the fiscal environment in which the SLCC program operated, and challenges encountered in the process of collecting data might offer some additional insight.

There are indications that Forensic Psychiatric Services Commission, the funding agency of the SLCC treatment program, recognized the importance of program evaluation (Laws, 2000). This recognition apparently led to a proposal to hire a psychologist to conduct an ongoing program evaluation and was the catalyst for the Laws content evaluation. In the treatment review report, Laws agreed with the perceived need for an ongoing treatment evaluation, but also cautioned against diverting funds from the treatment program to support it. Ultimately, the proposal to hire a treatment evaluator was not implemented. Indeed, difficult decisions about how to spend scarce resources were a reality at SLCC and go some way to explain why SLCC, and likely other treatment programs, fail to adequately evaluate their work.

In the current study the author was not being financially compensated for the project, so the issue of diverting funds from treatment was not an issue. Despite this though, the high costs associated with research continually surfaced. For example, in order to identify the treatment and comparison groups cooperation was required from Corrections Research Branch. This task was time consuming and was in addition to their required duties. Further, gaining access to Corrections files for coding purposes was difficult and expensive. For each offender, it was necessary to locate where the file was stored, contact the correctional institution where the file was stored, and then have the file sent to a central location to be coded. Obtaining access to Forensic Psychiatric

treatment files was similarly difficult. A time consuming process was required to identify where files were located and to eventually code the files. Again, many of the files were in different locations across the province and requesting the files involved considerable time and financial cost to Forensic Psychiatric Services. Aside from financial concerns, another challenge met in the course of research included the availability of offender information. As noted in the method section, it was not possible to gain access to many of the older Corrections files since they were destroyed according to record keeping requirements.

While this is not a comprehensive review of the difficulties encountered in proceeding with this study, it should serve to highlight that seemingly simple tasks such as gaining access to files can be expensive and time consuming. When considering both the methodological and data collection challenges in this area of research, the low number of good research studies in this field is understandable.

Recommendations for Future Research

Evaluation studies of this sort are time-consuming and require the cooperation of many individuals, but can provide important information on how best to address this public health problem with the scarce available resources. These studies are good at describing what was implemented, but do little to specifically identify what worked and why. The way to correct this void is to have treatment programs administer within subject measures. The direct benefit for treatment providers is that the process of selecting measures forces clinicians to be very clear about the goals of treatment, and the measures offer relatively quick feedback about the effectiveness of their interventions. Ideally, it leads clinicians to review current literature and administer more informed and

effective treatments. On a larger scale, it offers information about the value of the treatment model (i.e., relapse prevention model) as a heuristic that guides intervention.

Possible within-subject measures could focus on an offender's understanding and the ability to apply Relapse Prevention concepts, as was done in the SOTEP study (e.g., Marques, 1999). It would then be important to determine if these changes were linked to recidivism. In addition to the focusing on the "what", the field would be well served by exploring "how" they attempt to create change. For example, it may be that the relapse prevention model has been helpful organizing information and interventions for treatment providers, but the interventions themselves need to be more carefully scrutinized. For example, in the Laws (2000) content review of SLCC it was noted that some of the sex offender treatment modules (i.e., Thinking Errors) may have been too intellectually demanding for some offenders. Though consistent with Relapse Prevention theory, and possibly a critical element for some, it was lost on others. Emphasis might be placed on more experiential/interpersonal (compared with intellectual understanding) measures such as the Inventory of Interpersonal Problems (IIP) (Horowitz, Rosenberg, Baer, Ureno, & Villasenor, 1988) which could be used to assess maladaptive interpersonal patterns that prevent healthy adult attachments. It could be argued that the more effective an individual is in managing consensual relationships, the less desirable child and/or coercive sexual interactions become. This idea is not inconsistent with the Relapse Prevention model, but possibly represents a shift in how change is measured.

There are many challenges associated with studies that attempt to measure the effectiveness of sex offender treatment. However, individual studies contribute to a growing body of research examining the value of sex offender treatment. The process of

thinking critically about treatment also creates a necessary and healthy debate that forces everyone to be clear about the kind of treatment being offered and why.

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APPENDIX A:

CRITERIA FOR ADMISSION TO SLCC

An offender who receives a sentence for a sex-related crime is considered suitable for the program at Stave Lake Correctional Centre if he meets the following criteria:

1. He is serving a sentence for a sexual related offence. On occasion, the program will accept an individual who is serving a sentence for a non-sex related offence, providing he also has at least one prior conviction for sexual offending.
2. He is prepared to acknowledge some degree of responsibility for his offending. In selected cases, the program is also prepared to work with an offender who, although still in denial, is viewed by the Classification Officer as being amenable to change in a therapeutic environment.
3. He is willing to participate in programs and work initiatives offered at Stave Lake.
4. He is able to interact positively with other inmates.
5. He has a limited history of violent or aggressive behaviour.
6. He does not suffer from apparent psychological problems that may present undue risk to either himself or others in an open setting.
7. He has no medical issues that require immediate or ongoing care.
8. He has at least 10 to 12 months remaining in his sentence, although inmates with shorter sentences may be accepted.

While Classification has the authority to place inmates at Stave Lake, the Camp Director can deny access to the program if the inmate is in extreme denial of his offence, if he is a risk for escape, if he is violent, or if his behaviour is not appropriate (e.g., victimizing others, drug use, sexual predation of other inmates). Approximately one inmate, in any two month period, is found not suitable for admission to Stave Lake and returns to another correctional facility.

APPENDIX B:

STATIC-99 ITEMS

1. *Prior sex offences.* These could include a) arrests and charges, b) convictions, c) institutional rules violations, and d) probation, parole or conditional release violations arising from sexual assault, sexual abuse, sexual misconduct or violence engaged in for sexual gratification.
2. *Prior sentencing dates.* Count the number of distinct occasions on which the offender has been sentenced for criminal offences of any kind. The number of charges/convictions does not matter, only the number of sentencing dates. Court appearances that resulted in complete acquittal are not counted. The index sentencing date is not included.
3. *Non-Contact Offences.* This category includes convictions for non-contact sexual offences, such as exhibitionism, possessing obscene material, obscene telephone calls, and voyeurism. Self-reported offences do not count in this category.
4. *Index Non-sexual Violence.* Refers to convictions for non-sexual assault that are dealt with on the same sentencing occasion as the index sex offence. These convictions can involve the same victim as the index sex offence or they can involve a different victim. All non-sexual violence convictions are included providing they were dealt with on the same sentencing occasion as the index sex offences. Example offences would include murder, wounding, assault causing bodily harm, assault, robbery, pointing a firearm, arson, and threatening.
5. *Prior Non-sexual Violence.* The category includes any conviction for non-sexual violence prior to the index sentencing occasion.
6. *Unrelated Victim.* A related victim is one where the relationship would be sufficiently close that marriage would normally be prohibited, such as parent, uncle, grandparent, step-sister.
7. *Stranger Victim.* A victim is considered to be a stranger if the victim did not know the offender 24 hours before the offence.
8. *Male Victim.* Included in this category are all sexual offences involving male victims. Possession of child pornography involving boys, however, would not count in this category.
9. *Young.* This item refers to the offender's age at the time of the risk assessment. If the assessment concerns the offender's current risk level, it would be his current age. If the assessment concerns an anticipated exposure to risk (e.g., release, reduced security at some future date), the relevant age would be his age when exposed to risk.
10. *Single.* The offender is considered single if he has never lived with a lover (male or female) for at least two years. Legal marriages involving less than two years of cohabitation do not count.

APPENDIX C: ETHICS APPROVAL

OFFICE OF VICE-PRESIDENT, RESEARCH



BURNABY, BRITISH COLUMBIA
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August 17, 2001

Mr. Daryl Ternowski
Graduate Student
Department of Psychology
Simon Fraser University

Dear Mr. Ternowski:

**Re: Sex Offender Treatment: An Evaluation of the Stave Lake
Correctional Centre Sex Offender Treatment Program**

I am pleased to inform you on behalf of the University Research Ethics Review Committee that the above referenced Request for Ethical Approval of Research has been approved contingent upon this office receiving a letters of acknowledgment and approval from Stave Lake Correctional Centre, the B.C. Correction Branch and the Forensic Psychiatric Services involved in your study authorizing your research to be conducted. Once this office has received these letters, you may proceed with your research.

This approval is in effect for twenty-four months from the above date. Any changes in the procedures affecting interaction with human subjects should be reported to the University Research Ethics Review Committee. Significant changes will require the submission of a revised Request for Ethical Approval of Research. This approval is in effect only while you are a registered SFU student.

Best wishes for success in this research.

Sincerely,

Dr. Jack Martin, Vice-Chair
University Research Ethics Review Committee

c: J. Ogloff, Supervisor
/bjr