

**Research Report**

**Assessing the Effectiveness  
of the National  
Sexual Offender Program**

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**Assessing the Effectiveness of the National Sexual Offender Program**

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## Executive Summary

The purpose of the current study was to assess the effectiveness of the National Sexual Offender Program (NaSOP) in reducing recidivism. The NaSOP is a cognitive-behavioural program offered to low and moderate risk male sexual offenders. It is a therapeutic and semi-structured intervention designed to help offenders develop effective self-management skills. In addition, the program targets cognitive distortions, deviant arousal and fantasy, social skills, anger and emotion management, empathy, and victim awareness.

Following the principles of effective correctional interventions (Andrews & Bonta, 2003), the program is offered at both moderate and low intensity. The moderate intensity program is offered in institutions and typically consists of 10 to 14 hours of group work over a period of 4 to 5 months. The low intensity program is delivered both in the institutions and the community. This program typically consists of 3 to 5 hours of weekly group work over the course of 2 to 3 months. The program is delivered by psychologists and program delivery officers that have experience in the assessment and treatment of sexual offenders and who have completed standardized training in the delivery of the NaSOP. The NaSOP was given international accreditation in 2000 and was fully implemented across CSC by 2002.

The study examined whether sexual offenders who had completed the NaSOP demonstrated reductions in recidivism when compared to a group of untreated sexual offenders. It included 347 sexual offenders who had participated in the NaSOP between 2000 and 2004. A comparison group comprised of 137 untreated sexual offenders as drawn from Motiuk and Porporino's (1993) database. Motiuk and Porporino (1993) conducted an exhaustive review of a representative sample of sexual offenders under federal jurisdiction (in institutions and in the community) at the time. They collected a wide range of information on these offenders in their sample, including whether they had participated in sexual offender treatment. Offenders identified in the database as not having participated in such treatment were selected for the comparison group. All offenders in the study had sufficient file information to permit the scoring of the STATIC-99, an actuarial assessment instrument specifically designed to assess risk of sexual recidivism.

Two different approaches were utilized to examine whether NaSOP participants demonstrated reduced recidivism. The first approach was a *cohort design*, in which the rates of recidivism of the NaSOP participants were compared to those of the comparison group. After statistically controlling for risk and time-at-risk in the community, results showed that the offenders who participated in the NaSOP had a 68% reduction of sexual recidivism, an 83% reduction of violent recidivism, and a 77% reduction in any type of recidivism when compared to the untreated offenders.

The second approach was a *risk-band design*, in which the actual recidivism rates are compared to actuarially-established projected rates of recidivism. Rates from the STATIC-99 normative

sample were used as the comparison in this case. Cox regression analyses showed that the NaSOP group had an 88% lower rate of sexual recidivism than would have been expected based on the STATIC-99 normative sample. The odds of sexual recidivism for the comparison group, however, did not differ from those that would be expected based on their STATIC-99 scores.

It is possible that year of release, as a result of socio-politic factors (e.g., willingness to report sexual offenders; societal reactions to sexual offending) affects recidivism rates. As the median year of release was 2003 for the NaSOP participants and 1992 for the comparison group, Cox regression analyses were conducted separately for the NaSOP and the comparison groups to examine the potential impact of year of release. For the NaSOP group, release year was not associated with recidivism of any type. For the comparison group, release year was not associated with sexual recidivism. It was associated, however, with violent recidivism. This indicates that for the comparison group, the predicted rate of violent recidivism increased by 56% with each one-year increase in release year.

The results from this study are consistent with meta-analytical research on correctional treatment programs for sexual offenders (e.g., ATSA Collaborative Database), indicating that structured cognitive-behavioral interventions that target the factors specifically related to sexually offending behavior are effective methods to reduce recidivism among sexual offenders. The current findings provide evidence that the NaSOP is an effective intervention for reducing recidivism among low to moderate risk sexual offenders.

## Table of Contents

ACKNOWLEDGEMENTS .....	ii
EXECUTIVE SUMMARY .....	iii
TABLE OF CONTENTS.....	v
LIST OF TABLES .....	vi
INTRODUCTION .....	1
METHOD .....	3
Participants.....	3
Measures .....	3
Procedure .....	3
RESULTS .....	5
Predictive Validity of STATIC-99 .....	6
Effectiveness of NaSOP: Cohort Design .....	6
Effectiveness of NaSOP: Risk Norm Design .....	9
Release Year: Potential Confound.....	9
DISCUSSION .....	11
CONCLUSION.....	13
REFERENCES .....	14



## List of Tables

Table 1: <i>Description of Sample</i> .....	5
Table 2: <i>Recidivism Rates with Maximum of 2 Years of Opportunity to Reoffend</i> .....	6
Table 3: <i>Sequential Cox Regression with Risk and Treatment Predicting Sexual Recidivism</i> .....	7
Table 4: <i>Sequential Cox Regression with Risk and Treatment Predicting Violent (Including Sexual) Recidivism</i> .....	8
Table 5: <i>Sequential Cox Regression with Risk and Treatment Predicting Any Recidivism</i> .....	8



## Introduction

The goal of treatment for sexual offenders is to help them obtain and maintain a state of abstinence from offending (i.e. no more victims). The main treatment targets involve decreasing sexual deviancy, increasing appropriate arousal, addressing problematic cognitions and concurrent emotional states and developing self-management skills (Marshall, 1996, 1999; Marshall, Anderson, & Fernandez, 1999a). As part of treatment, offenders are required to address the factors that led to their sexually offending behavior, understand the behavioral progression to their offenses, and develop a self-management plan to be implemented upon their release to the community. In essence, these offenders need to learn to manage their lives in prosocial ways (Ward & Stewart, 2003). Concurrently, they need to maintain an awareness of the characteristics that facilitated their sexual offending and engage in appropriate strategies to manage their risk.

While treatment for sexual offenders in the Correctional Service of Canada has existed since 1973, a need for a national strategy was identified in the 1990's, and work began on the development of a standardized treatment program. In 2000, the Correctional Service of Canada established its National Sexual Offender Program (NaSOP) for moderate-risk and low-risk sexual offenders<sup>1</sup>. The NaSOP is a cognitive-behavioural program designed to target the factors that have been empirically established to be related to sexual offending behaviour. The NaSOP received international accreditation in 2000 and was fully implemented on a national basis by 2002.

The NaSOP is a therapeutic and semi-structured intervention aimed at reducing the risk of recidivism through the use of effective self-management. In addition, the program targets cognitive distortions, deviant arousal and fantasy, social skills, anger and emotion management, empathy, and victim awareness. Specifically, the program aims to help offenders in treatment:

- Increase their awareness of the causes of their sexual offending behavior
- Increase their awareness of the impact of their sexual offending on victims
- Understand their individual risk factors

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<sup>1</sup> CSC has other specialized programs specifically designed for high-risk sexual offenders.

- Eliminate or control these risk factors
- Maintain and reinforce change and risk management efforts through follow-up maintenance work.

Following the principles of effective correctional interventions (Andrews & Bonta, 2003), the NaSOP is offered at moderate and low intensity. The moderate intensity program is available in the institutions and primarily consists of 10 to 14 hours of group sessions per week over 4 to 5 months, for a total of approximately 160 to 280 hours. The low intensity program is delivered both in the institutions and the community and primarily consists of 3 to 5 hours of group sessions per week over the course of 2 to 3 months, for a total of approximately 24 to 60 hours. Individual therapy sessions may also be offered as needed. Both the moderate and the low intensity programs are typically followed by maintenance sessions. NaSOP is delivered by psychologists and program delivery officers who have experience assessing and treating sexual offenders and who have undergone standardized training in the delivery of the NaSOP.

As part of CSC's ongoing efforts to verify and validate the efficacy of its correctional programs, an empirical investigation of the efficacy of the NaSOP was required. The purpose of this study was therefore to examine whether participation in the NaSOP would lead to reduced rates of recidivism once treated offenders were released to the community.

## Method

### Participants

Participants were 347 sexual offenders who had participated in the NaSOP between 2000 and 2004 (called the *treated group*). One hundred and eighty two offenders (52.4%) participated in the moderate-intensity program and 165 (47.6%) in the low-intensity program. Only 22 (6.3%) NaSOP participants failed to complete the program. In all subsequent analyses, these non-completers were included in the treatment group.

To permit comparison of recidivism rates, a group comprised of 137 untreated sexual offenders (called the *comparison group*) were drawn from the Motiuk and Porporino's (1993) database (see also Motiuk & Brown, 1996). Motiuk and Porporino (1993) conducted an exhaustive review of a representative sample of sexual offenders under federal jurisdiction (in institutions and in the community) at the time. They collected a wide range of information on these offenders in their sample, including whether they had participated in sexual offender treatment. Offenders identified in the database as not having participated in such treatment were selected for the comparison group. This group is utilized in the *cohort design* detailed below.

### Measures

The STATIC-99 (Hanson & Thornton, 2000) is an actuarial instrument designed to assess risk of sexual recidivism. It consists of 10 static items and scores can range from 0 to 12. Good predictive validity has been found for the STATIC-99 across several studies (Hanson & Morton-Bourgon, 2004).

### Procedure

The data, including the scoring of the STATIC-99, examined in this report were compiled from pre-existing databases, raw data, and file review. Opportunity to reoffend began at the date of release and ended at the earliest of three possible dates: 1) date of first reconviction, 2) study end date if no reconviction occurred, or 3) date of death. Recidivism information was gathered from the Canadian Police Information Centre (CPIC), a national database of criminal arrests and convictions. In the current study, recidivism was defined as a new offence after release to the

community. Sexual recidivism was defined as a new charge or conviction for a sexual offence. Violent recidivism was defined as a new violent offence (including sexual offences). Any recidivism was defined as any new offence, all categories included. Consequently, the categories are not mutually exclusive.

## Results

As shown in Table 1, the NaSOP participants were younger and had shorter sentences than the comparison group. The NaSOP participants were also significantly more likely to have had a child or an adolescent victim and less likely to have had an adult victim. Risk of sexual recidivism as measured by the STATIC-99 was significantly lower in the NaSOP participants, as was time of opportunity to reoffend. The proportion of Aboriginal offenders and offenders with indeterminate sentences was similar in both groups. Sample size varies in these and subsequent analyses due to missing data on some variables.

Table 1:  
*Description of Sample.*

Variable	Comparison		NaSOP		<i>t</i> or $\chi^2$
	<i>n</i>	% or <i>M</i> ( <i>SD</i> )	<i>n</i>	% or <i>M</i> ( <i>SD</i> )	
Age at release	137	36.31 (12.03)	347	43.63 (12.60)	-5.83*
Aggregate sentence (years)	135	4.58 (2.60)	344	3.40 (1.57)	6.04*
Indeterminate sentence	137	0	347	0.9%	1.19
Aboriginal	134	17.2%	345	16.8%	0.01
Any child victims	133	34.6%	342	52.9%	12.91*
Any adolescent victims	133	39.1%	342	49.1%	3.87*
Any adult victims	133	54.1%	342	32.7%	18.46*
STATIC-99	137	3.91 (1.88)	347	2.37 (1.74)	8.60*
Opportunity time (years)	137	6.61 (5.75)	347	2.25 (0.98)	13.36*

\*  $p < .05$ .

Given that the opportunity time was considerably shorter for the NaSOP group than the comparison group, the unadjusted recidivism rates would be misleading. Consequently, we capped opportunity time at two years. This way, we can consider recidivism within similar time periods for both groups. Approximately two-thirds (222/347) of the NaSOP participants had at least 2 years of opportunity time. As shown in Table 2, the rates of recidivism appear lower in the NaSOP group over the first 2 years post-release. It would be tempting to attribute this

difference to the fact that these offenders participated in the NaSOP, but recall that the treatment group was also lower risk as measured by the STATIC-99. Because they are lower risk, we might expect them to recidivate less even if they had not received treatment. Cox regression analyses are therefore required to control for these differences between the groups on risk and time at risk.

Table 2:  
*Recidivism Rates with Maximum of 2 Years of Opportunity to Reoffend.*

<b>Recidivism</b>	<b>NaSOP</b>	<b>Comparison</b>
<b>Sexual</b>	1.1%	4.6%
<b>Violent/sexual</b>	2.0%	17.8%
<b>Any</b>	6.8%	36.5%

### **Predictive Validity of STATIC-99**

Researchers often assess the predictive validity of risk assessment instruments by calculating the area under the curve (*AUC*) of the receiver operating characteristic (*ROC*; Rice & Harris, 1995). An *AUC* of .50 indicates a chance level of predictive accuracy, whereas an area of 1.00 indicates perfect prediction. The *AUC* can be interpreted as the likelihood that a recidivist selected at random would have a greater value on the predictor variable (e.g., STATIC-99 score) than would a non-recidivist selected at random.

In this study, the STATIC-99 demonstrated predictive validity in the current sample similar to that found in other samples (e.g., Hanson & Morton-Bourgon, 2004). Specifically, predictive validity was found for sexual (*AUC* = .72, 95% C.I. = .63 - .82), violent (*AUC* = .77, 95% C.I. = .71 - .82), and general recidivism (*AUC* = .77, 95% C.I. = .72 - .81). The accuracy achieved by the STATIC-99 in the current sample supports its use as a covariate to control for risk in the subsequent analyses.

### **Effectiveness of NaSOP: Cohort Design**

A cohort design involves comparing a treated group from one time period to an untreated group from a different time period. To examine whether participation in the NaSOP led to a

reduction in recidivism, Cox regression analyses examined whether the recidivism rates of the treated group were lower than the comparison group while taking opportunity time into account and statistically controlling for risk. Cox regression analyses provide a *hazard ratio*. A hazard ratio less than 1.00 indicates a positive impact of NaSOP participation on recidivism (i.e., NaSOP participants showed less recidivism than the comparison group). A hazard ratio greater than 1.00 would indicate a negative impact of NaSOP on recidivism (i.e., rates of recidivism for NaSOP participants would be higher than those of the comparison group). A hazard ratio of 1.00 indicates no association between the predictor and recidivism.

As shown in Table 3, STATIC-99 was entered alone on the first block. Consistent with the ROC analysis reported above, higher STATIC-99 scores were significantly associated with a higher rate of sexual recidivism. This is indicated both by the significant chi-square test reported at the bottom of Table 3 as well as the significant Wald test and hazard ratio reported in Table 3 for Block 1. In the second block, after controlling for STATIC-99 score, the rate of sexual recidivism was 68% lower for the NaSOP participants than the comparison group;  $(0.32-1)*100 = -68$ . This difference only tended toward statistical significance ( $p = .06$ ), likely due to the very low base rate of sexual recidivism.

Table 3:  
*Sequential Cox Regression with Risk and Treatment Predicting Sexual Recidivism.*

Scale	<i>B</i>	<i>SE B</i>	Wald	Hazard ratio	95% C.I.
Block 1					
STATIC-99	0.36	0.10	13.27*	1.43	1.18-1.73
Block 2					
STATIC-99	0.30	0.10	8.61*	1.35	1.11-1.65
NaSOP	-1.13	0.63	3.19 <sup>†</sup>	0.32	0.09-1.12

Note.  $\chi^2(1, N = 457) = 12.36$  for Block 1 ( $p < .05$ ).  $\chi^2(1, N = 457) = 3.46$  for Block 2 ( $p = .06$ ). *SE* = Standard Error. *C.I.* = Confidence Interval.

<sup>†</sup> $p < .10$ . \* $p < .05$ .

As shown in Table 4 and Table 5, NaSOP participants had significantly lower rates of violent and any recidivism than the comparison group. Again, these differences were found after controlling for STATIC-99 score. The rate of violent recidivism was 83% lower for the NaSOP

participants;  $(0.17-1)*100 = -83$ . The rate of any recidivism was 77% lower for the NaSOP participants;  $(0.23-1)*100 = -77$ .

Table 4:

*Sequential Cox Regression with Risk and Treatment Predicting Violent (Including Sexual) Recidivism.*

Scale	B	SE B	Wald	Hazard ratio	95% C.I.
Block 1					
STATIC-99	0.37	0.06	33.66*	1.44	1.27-1.63
Block 2					
STATIC-99	0.27	0.07	15.62*	1.30	1.14-1.49
NaSOP	-1.79	0.41	18.76*	0.17	0.07-0.38

*Note.*  $\chi^2(1, N = 482) = 35.51$  for Block 1 ( $p < .05$ ).  $\chi^2(1, N = 482) = 23.35$  for Block 2 ( $p < .05$ ). *SE* = Standard Error. *C.I.* = Confidence Interval.

\*  $p < .05$ .

Table 5:

*Sequential Cox Regression with Risk and Treatment Predicting Any Recidivism.*

Scale	<i>B</i>	<i>SE B</i>	Wald	Hazard ratio	95% C.I.
Block 1					
STATIC-99	0.33	0.04	55.42*	1.39	1.27-1.51
Block 2					
STATIC-99	0.23	0.05	23.58*	1.26	1.15-1.38
NaSOP	-1.47	0.25	35.64*	0.23	0.14-0.37

*Note.*  $\chi^2(1, N = 483) = 57.81$  for Block 1 ( $p < .05$ ).  $\chi^2(1, N = 483) = 39.78$  for Block 2 ( $p < .05$ ). *SE* = Standard Error. *C.I.* = Confidence Interval.

\*  $p < .05$ .

## **Effectiveness of NaSOP: Risk Norm Design**

In addition to a cohort design, we also employed a risk norm approach to examine the effectiveness of the NaSOP (e.g., Barbaree, Langton, Peacock, 2003). In this approach, an actual recidivism rate for a given group is compared to a projected recidivism rate based on norms for a risk assessment instrument. In this study, the sexual recidivism rate for the current sample was compared to the projected recidivism rates that would be expected based on STATIC-99 scores. The expected sexual recidivism rates were taken from the Hanson and Thornton (2000) STATIC-99 normative samples. The authors suggest that the STATIC-99 normative samples can be considered *untreated* (Harris, Phenix, Hanson, & Thornton, 2003).

Each participant in the current study was assigned a probability of sexual recidivism based on his STATIC-99 score and his opportunity time. These probabilities were taken from the survival tables for the norms of the STATIC-99 (R. K. Hanson, personal communication, September, 2005). It was then possible to compare the actual sexual recidivism rate of the current sample with the rate of offenders from the STATIC-99 samples that had similar scores and similar time at risk. Results showed that for the comparison group, the actual number of sexual recidivists was 18 (of 137) while the number that would have been expected was 24.69 (of 137). In contrast, for the NaSOP group, the actual number of sexual recidivists was 4 (of 347) while the number that would have been expected was 30.06 (of 347).

Odds ratios were computed to examine the degree and statistical significance of the differences between actual and expected number of recidivists. The odds of sexual recidivism were significantly lower in the NaSOP group than what would be expected based on their STATIC-99 scores; odds ratio = 0.12, 95% C.I. = 0.04-0.35. Specifically, the treated group had 88% lower rates of sexual recidivism than would have been expected based on the STATIC-99 normative sample;  $(0.12-1)*100 = -88$ . The odds of sexual recidivism for the comparison group, however, did not differ significantly from those that would be expected based on their STATIC-99 scores; odds ratio = 0.69, 95% C.I. = 0.36-1.33.

## **Release Year: Potential Confound**

It is possible that year of release affects recidivism rates (Hanson, Broom, & Stephenson, 2004). For example, changing socio-political factors (e.g., willingness to report sexual offenders;

societal reactions to sexual offending) could be associated with increases or decreases in recidivism rates. Thus, any differences in recidivism rate found between the treated and comparison group could be due to the different times at which they were released rather than a treatment effect.

The median year of release was 2003 for the NaSOP participants and 1992 for the comparison group. To examine whether year of release had an impact, Cox regression analyses were conducted separately for the NaSOP and the comparison groups. For the NaSOP group, release year was not significantly associated with the rate of sexual recidivism (hazard ratio = 1.26, 95% C.I. = 0.40 to 3.96), violent recidivism (hazard ratio = 1.23, 95% C.I. = 0.56 to 2.73), or any recidivism (hazard ratio = 0.76, 95% C.I. = 0.51 to 1.13). For the comparison group, release year was not significantly associated with the rate of sexual recidivism (hazard ratio = 1.55, 95% C.I. = -0.78 to 3.05) or any recidivism (hazard ratio = 1.34, 95% C.I. = 0.99 to 1.83). Later release year, however, was associated with significantly more violent recidivism (hazard ratio = 1.56, 95% C.I. = 1.02 to 2.39). This indicates that for the comparison group, the predicted rate of violent recidivism increased by 56% with each one-year increase in release year.

Unfortunately, it was not possible to include release year as a covariate in the main analyses because there was almost complete separation on release year between the treated and comparison groups. That is, there was very little overlap between the release years in the different groups. Thus, release year was too highly correlated with group (i.e., multicollinearity) and its influence could not be statistically removed without also removing the influence of group. This may not be a serious concern, however, given that year of release was significantly associated with only one type of recidivism only in the comparison group. In addition, the direction of the association is such that, if anything, it would be expected to bias the results against the NaSOP. That is, if recidivism increases with release year, the NaSOP group should have higher recidivism rates because they were released later than the untreated group.

## Discussion

Recent meta-analyses suggest that sexual offender treatment programs are effective at reducing recidivism (Gallagher, Wilson, Hirschfield, Coggeshall, & MacKenzie, 1999; Hanson, Gordon, Harris, et al., 2002; Lösel & Schmucker, 2005; but see Rice and Harris, 2003 for a more cautious interpretation). Consistent with this research, we found that sexual offenders who participated in the NaSOP had a lower rate of recidivism than those who did not participate in the program. Statistically significant reductions in the rate of violent and any recidivism were observed: the rate of violent recidivism was 83% lower and the rate of any recidivism was 77% lower in the NaSOP participants than for the untreated comparison offenders. Although reductions in the rate of sexual recidivism were also observed, this finding only tended toward statistical significance, likely due to the very low base rates of sexual recidivism. Nevertheless, the rate of sexual recidivism was 68% lower in the NaSOP participants.

Although there were pre-existing differences between groups that could have opened the results to multiple interpretations, we attempted to isolate the impact of treatment by controlling for these extraneous variables. Specifically, NaSOP participants were lower risk than the untreated offenders as measured by the STATIC-99. NaSOP participants also had less time at risk than the untreated offenders. Consequently, NaSOP participants would have lower recidivism rates than the untreated offenders even if they had not received treatment simply because they were lower risk to begin with and they had less opportunity to reoffend (Harris & Hanson, 2004). The reductions in recidivism associated with participation in the NaSOP, however, were observed after statistically controlling for differences in risk and opportunity time. Thus, it seems unlikely that the pre-existing differences on the STATIC-99 account for the apparent effectiveness of the NaSOP.

Another concern with a cohort design is the potential impact of year of release on recidivism rates (Hanson, Broom, & Stephenson, 2004). Later year of release was significantly associated with higher rates of violent and any recidivism in the untreated offenders. We were unable to address this issue with statistical controls because there was very little overlap between the groups on release year. It is apparent, however, that release year cannot account for the reductions in recidivism associated with the NaSOP. Because NaSOP participants were released

later than untreated offenders and later release year was associated with more recidivism, any influence of release year would work against the hypothesis that treatment was effective.

Attrition can be very problematic in treatment studies. In the current research, we knew which offenders had failed to complete the NaSOP but we did not know which (and how many) offenders in the untreated group would have failed to complete treatment had they been offered it (Rice & Harris, 2003). Thus, removing non-completers from the NaSOP group would have introduced bias in favour of the NaSOP. Instead, we retained the non-completers in the NaSOP group for all analyses. Despite adopting this more conservative approach, we still found reductions in recidivism associated with NaSOP participation.

In addition to the cohort design discussed above, we also employed a risk norm design to examine the effectiveness of the NaSOP. When actual rates of sexual recidivism were contrasted with expected rates based on actuarial projections, significant differences were found, with the NaSOP participants having an 88% lower rate of sexual recidivism than would have been expected based on their actuarial scores. In other words, the treated offenders in this study had 88% less sexual recidivism than an untreated group of sexual offenders with similar STATIC-99 scores who had been at risk of reoffending for a similar period of time.

## **Conclusion**

Compared to a group of untreated offenders, NaSOP participants had lower rates of violent and general recidivism. NaSOP participants also sexually recidivated less than would have been expected from their scores on an actuarial risk assessment instruments (STATIC-99). Although the short follow-up period for the NaSOP participants' is certainly a weakness of this study and warrants cautious interpretation of the results, the findings generally suggest that the NaSOP is effective in reducing recidivism in sexual offenders.

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