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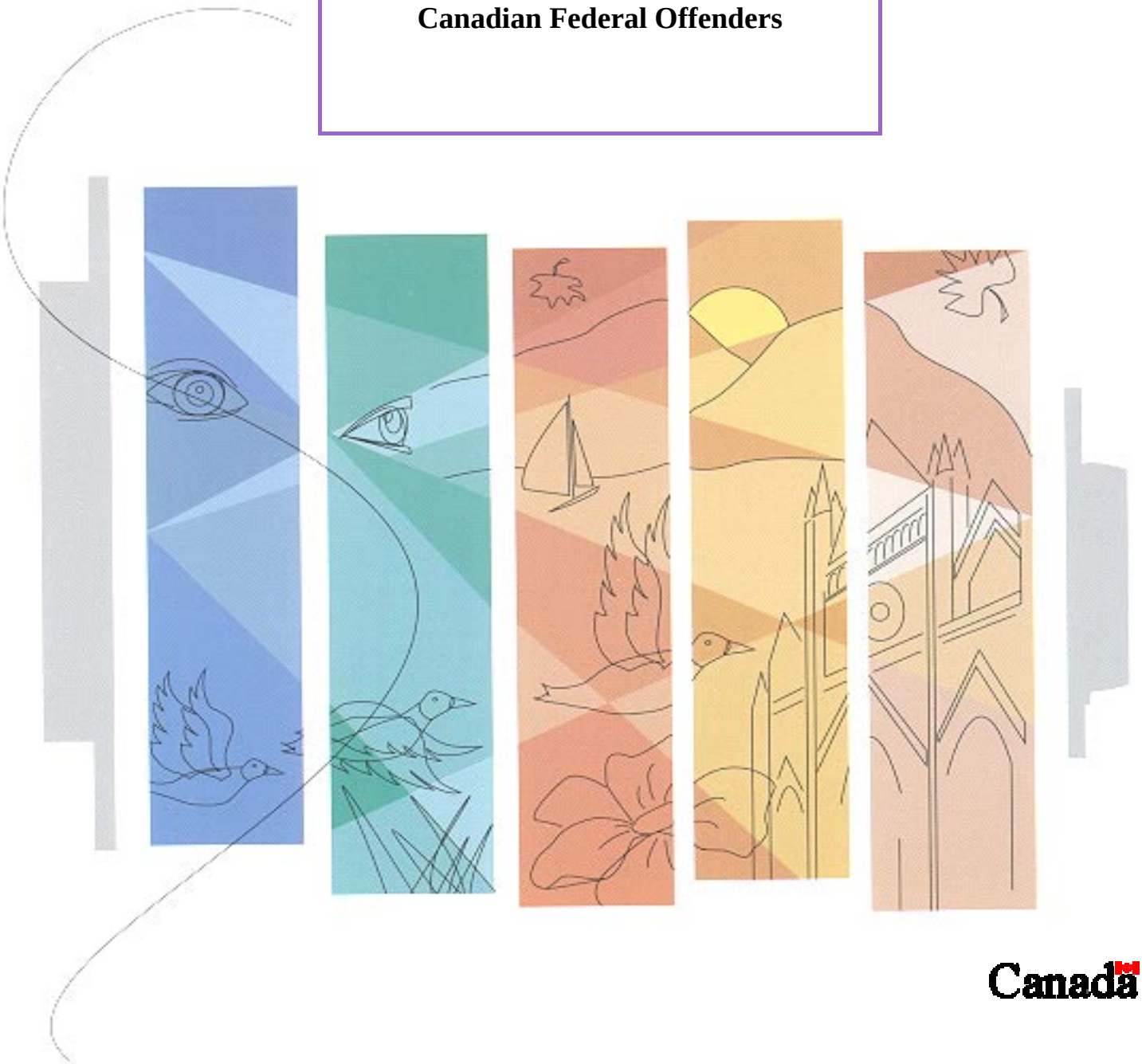
The Impact of Cognitive Skills Training on Post-Release Recidivism among Canadian Federal Offenders



Canada

The Impact of Cognitive Skills Training on Post-Release Recidivism among Canadian Federal Offenders

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The list of individuals who have made contributions to this immense research undertaking is endless. However, a number of people must be identified because their contribution has been so crucial to the success of the project. From the outset Elizabeth Fabiano, who was firmly committed to establishing a program of research to accompany Living Skills, championed the research design and helped the field maintain momentum. The original design of the project was developed by Frank Porporino before the involvement of the current author in the project. His dedication to maintaining an experimental design, his insight into data analysis issues as the project proceeded, and his commitment to seeing the project through, have been invaluable. A number of staff from the Research Division have greatly assisted in the project at various stages. John Weekes and Bart Millson led the project for a period when the present author was assigned to other duties and have frequently contributed to discussions concerning the most appropriate methods of approaching the data analysis. Luisa Mirabelli played a key role in implementing the research design and dealing with questions from coaches on an ongoing basis. Marcy Grossman, Jill Rettinger, and Ian MacKenzie completed assignments as the persons responsible for maintaining the database. More recently, Collette Cousineau and Sue Seguin have diligently managed the daily job of processing the huge shipments of data that are received from Living Skills coaches. Mark Nafekh assisted in the file building and data cleaning work required for the recidivism follow-up. The current round of statistical analyses and compilation of tables have been conducted by Michael Muirhead who was always patient in responding to the endless requests for analyses.

Last but not least, the contribution of field staff in co-operating with this project merits special mention. Thanks to all coaches who faithfully submitted their “boxes of cog data” month after month. This report should reward your efforts by providing evidence that your commitment to programming is highly valuable and your impact on offenders can be documented through research. The regional co-ordinators of Living Skills, who have been extremely supported of the research program, have helped in interpreting the data and suggesting questions which should be addressed in the present report. Their ongoing efforts are gratefully acknowledged.

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Executive Summary

This report describes the results of a study of the effects of Cognitive Skills Training on post-release outcomes of offenders under federal jurisdiction in Canada. Readmission and reconviction rates for a sample of Cognitive Skills Training participants are compared with the rates of released offenders who were randomly assigned to a waiting list but never received the program. The report provides details on the differential impact of the program on offenders with varying characteristics including different release types, risk levels, offence types, and demographic variables. The current study is among the largest controlled outcome studies aimed at assessing the effects of correctional interventions on offenders who have been incarcerated. The results provide grounds for considerable optimism regarding the effectiveness of Cognitive Skills Training as a method of reducing recidivism among this group of generally high-risk offenders.

The Cognitive Skills Training program is a 36-session program delivered by staff who have completed an intensive 2-week training program. The program focuses on faulty thinking patterns that typify the haphazard strategies offenders employ to make life decisions, solve minor problems and react to immediate situations in their environments. Cognitive-behavioural in style, the program combines didactic methods of teaching cognitive skills by the coaches, with carefully guided group and individual exercises which provide opportunities to practice the skills. Among the cognitive deficits addressed by the program are impulsive decision-making, narrow thinking, absence of goal-setting behaviour, and poor inter-personal skills.

Widescale national implementation of Cognitive Skills Training began in 1990 following successful pilots of the program in 1988-89. The program is now available in all five regions and in more than 70 community and institutional sites in the Correctional Service of Canada. More than 5,500 federal offenders have completed the intensive program to date.

The current research is based on a sample of 4,072 offenders who completed Cognitive Skills Training or were referred and considered eligible for the program between 1990 and 1994. Following referrals by case management officers, candidates were assessed by program delivery staff to ensure that they possessed the cognitive deficits addressed by the program and were motivated to participate. After eligible candidates were identified,

offenders were randomly assigned to receive the program immediately or be placed on a waiting list for the next available delivery of the program. Offenders who remained on the waiting list without receiving the program were employed as a waiting list control group for this study. The procedure ensured that a pool of "untreated" offenders who shared the same characteristics as program participants were available for post-release outcome comparisons.

In total, 740 offenders were randomly assigned to the waiting list. Of this number, 199 subsequently received the program leaving 541 offenders who served as members of the control group. A total of 3,531 offenders were randomly assigned to participate in the program. Of these, 500 participants (14.2%) withdrew early and failed to complete the full program curriculum. The majority of drop-outs (66.7%) withdrew for negative reasons including dismissal by a coach, voluntary withdrawal because of lack of interest, or placement in segregation.

Of the total sample of 4,072 offenders, including both participants and waiting list control group members, two-thirds (n=3031, 66.4%) had been released on community supervision as of March 31, 1995 when the follow-up study began. Of the release group, 58.7% were granted day parole, 10.9% were granted full parole, and 30.4% were given statutory release. Completion of Cognitive Skills Training significantly increased the chances of being granted discretionary (i.e., full parole or day parole) rather than statutory release.

The preparation of offenders for earlier release was an important objective of Cognitive Skills Training. It was expected that offenders who would otherwise be poor candidates for discretionary release, would be ready to be granted the privilege sooner as a result of their skill acquisition. While 74% of program completers received discretionary release, 65 % of the waiting list control group were granted the same release privilege. Therefore, program completion was associated with a 13.8% increase in the rate of granting of discretionary release. In addition, the recidivism outcome data confirmed that increases in the granting of discretionary release were not gained at the cost of higher readmission or reconviction rates for program participants.

The recidivism outcome data detailed in this report focuses on a sub-sample (n=2,125) of released offenders who had been under community supervision for at least one year following conditional release. Recidivism was defined as a readmission for technical

violation of conditional release or a reconviction for a new offence within the first year following release. The release sub-sample comprised 1,444 (67.9%) program completers, 302 (14,2%) program drop-outs, and 379 (17.8%) waiting list control group members.

Overall, 44.5% of the program completers were readmitted during the first year under community supervision compared to 50.1% among waiting list control group members. Therefore, there was a 11.2% reduction in readmissions associated with program completion. There was no reduction in the rate of readmissions for technical violations when we examined outcomes for program completers and waiting list control group members. In fact, there was little evidence of program impact on technical violations in any of the analyses we performed. However, the program appeared to have a larger impact on readmissions for official reconvictions. We observed a reduction in official reconvictions of 20% for program completers. The greater influence of the program on official reconvictions is encouraging given the greater seriousness of reconviction as a post-release outcome.

While the overall effect of the program in the full release sample was modest, greater reductions in recidivism were observed when the analyses was extended to an examination of differential program impact across various sub-groups of offenders. Risk of recidivism, using a scale which combined several criminal history factors which predict readmissions and reconvictions, was found to be an important discriminating factor. The risk scale was simply used to divide the sample into two groups based on their probability of any type of readmission and did not imply the likelihood or risk for specific crimes (e.g., violent or serious). Offenders who were at high-risk of recidivating showed little gains from the program using recidivism as an outcome measure. However, there was a 20% overall reduction in recidivism for program completers who were at low-risk of recidivism. Moreover, low-risk graduates of the program showed a 34.2% reduction in reconvictions for new offences. Previous research suggests that medium or high-risk offenders benefit most from correctional treatment. However, our results are consistent with this finding when it is considered that our low-risk offenders would likely fall toward the high-risk extreme on a risk continuum of all criminal offenders. For example, offenders referred to Cognitive Skills Training who we defined as low-risk, exhibited recidivism rates that were comparable to offenders defined as high-risk in other jurisdictions (e.g., probation, provincial inmates).

Need level, which refers to dynamic problems or deficits which can be addressed to reduce criminal behaviour (e.g. cognitive deficits, pro-criminal attitudes, substance abuse problems, etc.) also influenced program outcomes. Although there were an insufficient number of cases for which complete need measures were available to support firm conclusions, the trends observed supported theory and correctional practice within the Correctional Service of Canada. Low-need offenders, especially if they were also low-risk, recidivated at very low rates and showed no gains from the intensive programming. Medium-need cases, and to a less extent high-need cases, exhibited the greatest gain after successfully completing Cognitive Skills Training. A 52.5% reduction in official reconvictions was associated with program completion for medium-need cases.

One of the more salient findings from this research was the relatively successful outcomes observed for offenders who completed the program in community settings. While 50.5% of waiting list control group members were readmitted, offenders who completed Cognitive Skills Training in the community were readmitted at a rate of 30.5% - a drop of close to 40%. Furthermore, a 66.3% reduction in official reconvictions was recorded for graduates of community-based programs. The analyses also revealed that while low-risk cases benefited most from institutional programs, programs delivered in the community produced positive effects on recidivism for both low-risk and high-risk offenders. The results challenge frequent claims that the delivery of effective programming to offenders in the context of federal community corrections is not feasible. The results suggest that intensive programming in community settings may greatly assist community staff in their efforts to limit recidivism.

Offence type was also an important moderator of the effects of Cognitive Skills Training on post-release readmissions. Sex offenders, who accounted for 11.1% of the sample, appeared to derive the greatest benefits from the program, a critical finding given the pressures placed on the correctional system to develop effective programs for sex offenders. There was a 57.8% reduction in reconvictions among sex offenders who had completed the program, and a 39.1% reduction in any readmissions. Although it is unlikely that such impressive results would be obtained for all sex offenders who received Cognitive Skills Training, the data suggest that sex offenders who meet current referral criteria and are deemed appropriate candidates by coaches, greatly benefit from the program.

Violent offenders and drug offenders also showed lower recidivism as a function of completing Cognitive Skills Training. Robbery offenders were excluded from the "violent" category for the analyses that were conducted. The latter group included offenders who had been admitted for murder, manslaughter, assault, abduction, weapon offences, and other violent offences except robbery. Successful completion of the program for violent offenders and drug offenders translated into a reduction in reconvictions of approximately 35%. Again, the results are highly encouraging, especially given that violent offenders have been identified as a priority group for the development of intervention strategies.

Non-violent property offenders (theft, B&E, fraud) and robbery offenders showed little response to the program. The differences in recidivism rates for non-violent property offenders and robbery offenders who completed the program and their counter-parts in the waiting list control group were not statistically significant. This group of offenders was also rated highest in risk of recidivism according to the actuarial index that was employed in the study. The latter offence types represent the largest single categories of offences within the federal population. Coupled with their high rates of recidivism, it appears that this group deserves further study aimed at identifying why they failed to show progress after release.

At first glance the data suggested that Aboriginal offenders were not positively influenced by the program. The rates of readmissions for Aboriginal offenders who completed the program and those in the waiting list control group were the same. However, the data suggested that Aboriginal offenders who completed the program have a lower reconviction rate. While the data are inconclusive for this group of offenders, the available evidence implies that the program should not be eliminated as an option for Aboriginal offenders.

The research also addressed the assumption that programming produces more effects on recidivism when conditional release occurs within close proximity to program completion. It was difficult to provide conclusive data to answer the question because of the numerous variables which might intervene to effect the timeliness of release after programming. However, the current data show that the program has potential effects for offenders who are released immediately after the program as well as those who are released after extended periods. In fact, our data suggested that offenders who were not first in line for the granting of discretionary release (e.g., sex offenders, violent offenders) had the most positive

outcomes. While the results do not lead to the conclusion that offering programming in close proximity to probable release should be abandoned, it challenges the notion that offenders will loose program skills if they must wait longer periods before release.

The current research provides much data for further study and careful analysis by staff who are responsible for program development. The report describes sub-groups of offenders who benefited from the program as well as sub-groups who show little response on recidivism outcome measures. Careful attention must be given to whether or not the program can be exploited by more effective targeting to the groups that show the greatest promise (e.g., violent offenders, sex offenders). Equally important is a discussion of how the program can be more effectively delivered to the offenders groups who have not shown as favorable results as others (e.g., property offenders).

The promising findings for community settings suggest that methods for enhancing the capacity for delivery of the program in the community should be examined. Enhancing the capacity for delivery in the community includes acquiring the resources (e.g. coaches) as well as motivating offenders to enroll and stay in programs. The impressive results obtained in the community suggest that offenders gain more when they learn cognitive skills in the settings where they most need to directly apply the new skills - on the street. It may not be reasonable to expect that offenders under community supervision will complete a 36-session program. Community booster sessions offered to high-risk offenders who have already completed the full program in institutions may be one way of capitalizing on the advantages of the community context.

Overall the results of the current study furnish encouraging evidence that careful attention given to the development and implementation of state-of-the-art correctional programming can pay dividends in terms of reductions in recidivism. There exists little previous research on the effectiveness of correctional interventions with federal offenders. The results of this study fill many of the gaps in our knowledge about programming with this population and, more importantly, demonstrate that effective correctional programming for many federal offenders is feasible. At a time when there are increasing demands for accountability in safeguarding public security, the current findings raise confidence in the recidivism reduction potential of programming. There is strong support for continued commitment to the ambitious programming direction set by Living Skills Programs.

Introduction

After piloting the program in two regions in 1988 and 1989, the Correctional Service of Canada began national implementation of Cognitive Skills Training in 1990. Currently the program is offered in 70 Correctional Service Canada sites by 165 trained coaches. Cognitive Skills Training is offered in all five regions and more than 5,500 offenders have participated in the program since national implementation.

Cognitive Skills Training is the cornerstone of the Correctional Service of Canada's Living Skills Programs. Based on the work of Ross and Fabiano (1985), the program targets several cognitive deficits, or "faulty" thinking patterns, which help maintain patterns of criminal responding to the environment. Impulsive decision-making, narrow thinking, absence of goal-setting, and maladaptive inter-personal skills, are among the cognitive deficits addressed by the program. The applicability of the program model for Canadian federal offenders is supported by the work of Zamble and Porporino (1988) who documented the existence of a range of cognitive deficits which interfere in the ability of offenders to cope with problems during imprisonment. The "generic" cognitive skills acquired in Cognitive Skills Training, the core program in the Living Skills series, are extended to more specific areas of offender needs in other Living Skills components: Anger and Emotions Management, Living Without Violence, Parenting Skills, Leisure Education, and Community Integration.

There is a body of research on correctional programming (e.g., Andrews and Bonta, 1994; Andrews, et al., 1990; Gendreau and Ross, 1987) which demonstrates that programs are effective in reducing recidivism when targeted toward appropriate criminogenic factors, offered to clientele who are at risk of recidivism, and delivered using cognitive-behavioural or other directive approaches. In designing Cognitive Skills Training, program designers employed many of the principles that have been established from this body of programming research (see also Ross and Gendreau, 1980). As such, the program is considered a *state-of-the-art* correctional intervention which has benefited from many years of research and theory development. Support for the focus of the program on cognitive deficits as a major domain of criminogenic need, has been well-documented (e.g., Ross and Fabiano, 1985). Among 7 offender need dimensions measured at the time of release, Motiuk and Brown (1993) found that cognitive deficits were among the needs that were the most highly correlated

with recidivism among federal offenders. In terms of the effectiveness criteria based on risk of recidivism, the program has been carefully targeted to higher risk cases and reserved for offenders who exhibit the criminogenic needs targeted by the program (Robinson, Grossman, and Porporino, 1991). Finally, described as a "multi-modal" cognitive behavioural intervention (McGuire and Priestly, 1995), the delivery style of the program makes use of a variety of techniques which have gained credibility as appropriate techniques for correctional clientele (e.g., Andrews and Bonta, 1994).

While there is strong empirical knowledge regarding the positive impacts of high quality correctional interventions similar to Cognitive Skills Training, previous research has been based on a variety of offender populations. Much of the work has focused on juvenile offenders (Lipsey, 1995) and offenders under non-incarceral community supervision (Andrews, et al, 1990; Losel, 1995). Early evidence of the promise of the Cognitive Skills Training model derived from a sample of high-risk adult probationers (Ross, Fabiano & Ewles, 1988). The Canadian federal offender population represents a unique group in many respects. The majority of federal offenders are adult recidivists, often with previous terms of imprisonment and probation, and all have been sentenced to a minimum of two years. Many have committed crimes for which society reserves its most severe penalties. On a continuum of risk which includes all criminal offenders, it is likely that most federal offenders would fall toward the highest risk extreme. Andrews (1995) has recently drawn attention to the fact that there is a of lack studies on the effectiveness of "intensive and appropriate" treatment programs for offenders who are at the highest levels of risk of recidivism. While the Correctional Service of Canada has developed and implemented a range of programs based on principles of effective correctional intervention described above, our knowledge about the effectiveness of programs with federal offenders contains many gaps. The current research on Cognitive Skills Training should furnish important new information on a number of factors that effect treatment outcome with this unique correctional population.

Description of the Program

The Cognitive Skills Training program consists of 36 two-hour group sessions offered in institutional and community settings. As such, Cognitive Skills Training is intended to offer intensive programming that provides offenders with sufficient exposure to the program content to master the prescribed skills. The cognitive skills are acquired in a

series of stages with each new skill building upon the successful acquisition of previously introduced skills. The manual-driven character of the program furnishes coaches with detailed lesson plans for each session. Training techniques combine didactic presentation of program content with various individual and group exercises which allow offenders to practice the cognitive skills (e.g., role playing, video feedback, homework). Essential to the program philosophy is the use of a variety of techniques and learning exercises in order that the program appeals to a variety of learning styles and ensures that participants rehearse the skills in diverse settings. The program is given in groups of up to 10 participants at one time, although the ideal group size is 8 members.

The group size combines with the unique style of the intervention to permit offenders the necessary time and learning opportunities to make profound changes to their day-to-day approach to behavioural decision-making. The philosophy and content of Cognitive Skills Training has been described in more detail elsewhere (Fabiano, Porporino, and Robinson, 1990; Porporino, Fabiano, Robinson, 1991; and Fabiano, Porporino, and Robinson, 1991).

In addition to the intensive nature of the program, a number of additional standards were set when Cognitive Skills Training was implemented (Correctional Service Canada, 1994). The standards were established to ensure that the integrity of the program would endure. Implementation standards were research-based and employed the most up-to-date empirical knowledge concerning effective interventions with offenders. Emphasis on program integrity has gained high respect for the program within the Correctional Service of Canada and from other jurisdictions involved in elaborating new models of correctional programming.

The rigorous training program designed for program delivery staff, referred to as coaches, constitutes a pivotal standard. Coaches are exposed to an intensive two-week training program which must be successfully completed before program delivery commences. Follow-up training, leading to certification, is completed after novice coaches have delivered the program and are given feedback on their performance based on the viewing of their video-taped sessions. In addition to coach training and certification,

attention was also given to the role of other staff in the programming process. A series of staff awareness sessions were delivered to all staff in each new site where Cognitive Skills was instituted. All staff were exposed to the program philosophy and encouraged to be partners in the intervention by supporting and reinforcing the progress of offenders who participated in the program.

A referral and selection procedure was devised to safeguard against the delivery of the program to offenders who would be unlikely to benefit. Accordingly, the selection of inmates followed the research literature which suggests that appropriate candidates demonstrate a need for the programming (e.g., possess cognitive deficits) and are at risk of becoming reinvolved in criminal activity following incarceration. Attention to candidate selection provided an early example of the ideal of rationalizing the assignment of offenders to programming based on need in the Correctional Service of Canada. Initial assessment and selection of participants is supplemented with ongoing structured assessments of offender progress by coaches.

Another strength of the program implementation strategy pertained to the role prescribed for research. From the early introduction of the program as a pilot, the Correctional Service of Canada has been committed to a program of research aimed at investigating the efficacy of Cognitive Skills Training and other Living Skills components. A significant expectation of the research design was the provision of data for evaluating differential response to the program across a variety of offender groups (e.g., risk levels, offence types) and program settings (e.g., community versus institutional sites). The use of random assignment to treatment and "waiting list" control groups ensured that the performance of offenders who were exposed to the program could be compared with offenders who had not received the program but who otherwise possessed comparable characteristics.

Current Follow-up Study

Initial results presented after the pilot study and soon after national implementation were very encouraging (Fabiano, Robinson and Porporino, 1991; Porporino and Robinson, 1995; Robinson, Grossman and Porporino, 1991). Reductions in recidivism as high as 30% were recorded for some groups of offenders. While confirming expectations about the efficacy of the program, the early studies lacked sufficient sample size and follow-up duration to present meaningful sub-group analyses on some key variables. For example, the size of the waiting list control group was limited to the extent that offenders could not be compared on Aboriginal Status, offence type, and other measures which were of interest to coaches and other staff involved in program implementation. On average, follow-up periods were less than one year and there were insufficient numbers of cases to permit a fixed length of follow-up for each offender in the sample.

The current follow-up improves on the earlier studies by extending the follow-up period and increasing the sample of released offenders. In total the post-release outcomes for a sample 2,815 offenders is available, including 420 offenders who were randomly assigned to the wait list control group (14.9%). Information on the recidivism of 2,125 offenders is available for a minimum period of 12 months following release on community supervision. The present sample is one of the largest to incorporate experimental research techniques in the study of a highly-structured correctional intervention. As such, the sample size permits analysis of a variety of variables which may moderate the effects of correctional programming.

Method

Referral and Program Assignment

Program candidates were referred to the program by their case management officers. A checklist containing 13 cognitive deficits was completed by case management officers prior to referral (See Appendix A). The minimum criteria for program eligibility was the presence of at least 7 of the 13 cognitive deficits. Cognitive Skills Training coaches interviewed all eligible referrals using a semi-structured interview to further assess the suitability of the candidate for the program. The interview schedule included

a number of problem solving vignettes which coaches used to assess offender cognitive skill levels. The interview allowed coaches to screen-out referrals who already possessed the skills targeted by the program and who would gain little from participation. The assessment process also determined whether or not the offenders possessed a minimum level of motivation to begin participation.

The random assignment procedure was used after eligible referrals were identified and a sufficient number of cases were available to constitute program and waiting list control groups (16 -20 candidates). Cognitive Skills Training coaches supplied Program Development and Implementation staff at National Office with lists of candidates for random assignment. National Office Staff then assigned half of the cases to the program group and half to the waiting list control group by randomly "drawing names from a hat".

Following the delivery of the program, regional research assistants provided research staff from the Research and Statistics Branch with a list of all Cognitive Skills Training participants and waiting list control group members. At that time, information was also provided on the completion status of participants (i.e., completion versus program drop-out). Regional research staff also provided, coach interview assessment data, offender file review information (e.g., demographic, criminal history, risk, pre-admission street functioning, etc.), and submitted pre and post-test paper and pencil tests completed by offenders for selected measures (e.g., criminal sentiments, impulsivity, empathy, venturesomeness).[1]

Beginning in 1993, program delivery staff began to phase out the use of random assignment to the waiting list control group in most sites. While the waiting list procedure assured that no offenders who desired the program would be denied participation at a later date, the maintenance of the randomized procedure proved to be unpopular in the field. There was a preference to use other priority criteria (e.g., proximity to release and program need severity) as a method of assigning eligible candidates to waiting lists. The use of regional research assistants to collect the program information was also discontinued at the end of 1993. At that time, program delivery staff became responsible for the

provision of research information to research staff at National Office.

Cognitive Skills Training Research Sample

The full research sample consists 4,072 of male offenders who participated in the Cognitive Skills Training program or were assigned to the waiting list control group between January 1, 1990 and December 31, 1994.[2] Table 1 shows the distribution of offenders by participation status including the proportion of participants who did not complete the program (i.e., program drop-outs).

Description of the Sample

The waiting list control group consists of 541 cases or 13.2% of the sample. Initially, 740 cases were randomly assigned to the waiting list control group - 18.2% of the sample. As noted above, waiting list control group members were offered enrollment in the next program, providing that they remained available for participation. Accordingly, 199 waiting list control group members participated in the program at a later time. Because of their exposure to the program, we removed these cases from the waiting list control group and included them in the program participation group.

Table 1
Cognitive Skills Training Sample by Participation Status

Participation Status	n	%
Waiting List Controls	541	13.2
Program Participants	3531	86.8
Total	4072	100.0
Completion Status for Participants		
Program Completers[1]	3031	85.8
Program Drop-outs	500	14.2
Total	3531	100.0

[1] The proportions for Program Completers and Drop-outs are based on the total number of Program Participants and exclude Waiting List Control cases.

As Table 1 indicates, the overall dropout rate for offenders who were assigned to the program group was 14.1%. Hence, it was common for at least one of the 8 to 10 participants in each Cognitive Skills Training program to withdraw from the program

before completion. Table 2 displays the reasons for premature termination of program participation for cases for which the termination reason was reported by coaches. Almost half of the drop-outs withdrew for negative reasons (e.g., expelled by coaches because they were uncooperative or voluntarily withdrew because they did not wish to participate). An additional 17% of cases withdrew because of other negative events including placement in segregation among institutional cases and return to prison for community participants. Seventeen percent of the cases withdrew because of institutional transfers and almost 10% of the cases failed to complete the program because they were released before the program ended. Other neutral reasons, including program cancellation and inmate hospitalization, accounted for less than 10% of the drop-outs for which information was available.

Table 2
Reasons for Program Drop-out

Reason	n	%
Negative Reasons (Dismissed or Quit)	181	49.5
Placed in Segregation or Reincarcerated	63	17.2
Transferred	63	17.2
Released	33	9.1
Other Neutral Reasons (e.g., hospitalization, program canceled, etc.)	26	7.1
Total	366[1]	100.0

[1] The drop-out reason for 134 cases (26.8%) was not provided by program coaches.

Table 3 and 4, show the distributions for region and year of program delivery for the research sample. The Ontario region had the largest proportion of offenders in the sample. However, relative to their

respective offender populations, the Atlantic and Pacific regions, where the program was first introduced, also accounted for a large proportion of the total cases. While Quebec region was the last region to implement Cognitive Skills Training, Table 3 shows that a large number of offenders in the current sample were participants or waiting list control group members in that region.

Table 3
Distribution of Cognitive Skills Training Sample by Region

Region (n=4001)	Sample		Participants		Waiting List Control	
	n		n	%	n	%
Atlantic	628	15.7	555	15.9	73	13.8
Quebec	660	16.5	563	16.2	97	18.3
Ontario	953	23.8	832	23.9	121	22.8
Prairies	877	21.9	748	21.5	129	24.3
Pacific	883	22.1	773	22.3	110	20.7

The year of program delivery data displayed in Table 4 indicates the rapidity of growth in participation in Cognitive Skills Training since national implementation in 1990. The largest proportion of cases for the current sample refer to the 1992 delivery year. There were fewer cases in the years 1993 and 1994 than would have been expected given the number of offenders who participated in Cognitive Skills Training during this time. Delays in receiving program participation information from coaches account for the lower numbers. In addition, a decline in the frequency of reporting on program participation information accompanied the transfer of responsibility from regional research assistants to program delivery staff in 1993.

Table 4
Distribution of Cognitive Skills Training Sample by Year of Program Delivery

Year (n=4072)	Sample		Participants		Waiting List Control[1]	
	n		n	%	n	%
1990	275	6.7	214	6.1	61	11.2

1991	545	13.4	448	12.7	97	17.9
1992	1425	35	1108	31.4	317	58.6
1993	1116	27.4	1050	29.7	66	12.2
1994	711	17.4	711	20.1	0	0

[1] The year of program referral is used as the delivery year for members of the waiting list control group

Only 225 members of the sample (5.5%) were referred to Cognitive Skills Training programs delivered in community settings. Over half (n=116, 51.5%) of the community participants received the program in the Atlantic region. Reports from coaches suggested that it was very difficult to attract and maintain participation by offenders in community settings. For this reason, community sites were unable to build a waiting list control group that was of sufficient size for research purposes. Only 13 cases were retained on the waiting list control group in community settings. Drop-outs from community programs were also high: 27.8% (59) of the community participants failed to complete the program.

Table 5 provides further description of the Cognitive Skills Training research sample on a number of variables, including criminal history and demographic factors. The contents of Table 5 are based on information recorded at the time of admission (i.e., index admission) prior to participation in the program or assignment to the waiting list control group. Most members of the sample (55.8%) were serving their first federal term of incarceration and the average sentence length was 4.9 years. New warrants of committal represented the most frequently occurring admission type. Slightly over 50% of the offenders had violent offences and 40% had non-violent property offences. As Table 5 indicates, the average age was 29.6 years and 12.2% of the sample were Aboriginal offenders.

Comparability of Participant and Waiting List Control Groups

Inspection of Table 5 also demonstrates that the participant and waiting list control group were largely comparable on the criminal history and demographic characteristics we examined. The two groups were statistically

indistinguishable on all but two of the twelve variables examined. In comparison to the participant group, there were significantly more offenders who had an index property offence in the waiting list control group. The mean aggregate sentence was slightly shorter for the latter group, reflecting relatively shorter sentences received by non-violent property offenders. Offence and sentence length variables will be included in analyses of the effectiveness of the program to ensure that the results are not influenced by differences between the two groups.

Table 5
Characteristics of the Cognitive Skills Training Sample

Sample Characteristics	Research Sample %/Mean (n=4072)	Participants % / Mean (n=3531)	Waiting List Controls % / Mean (n=541)	Chi-Square / T-Values
% First Federal Admission	55.8	55.85	55.08	0.113
Mean Sentence Length (s.d.)	4.9 (3.9)	5.0 (3.9)	4.6 (3.4)	t=2.39 p < .02
Indeterminate Sentences	10.9	11.14	9.30	1.601
% Admission Type				0.918
Warrant of Committal	81.3	81.09	82.41	
Supervision Violation	12.1	12.10	11.85	
Violation with Offence	6.4	6.58	5.56	
Other Admission Types	0.2	0.23	0.19	
% Offence Type[1]				
Violent[2]	51.1	51.26	49.91	0.343
Sex Offence	14.5	14.31	15.64	0.672
Robbery	34.9	34.54	37.06	1.296
Other Non-Violent Property Offence (e.g., B&E)	41.3	40.14	49.16	15.655 p<.001
Drug Offence	19.5	19.76	17.69	1.267
% Aboriginal Status	12.2	12.01	13.68	1.220
Mean Age at Admission (s.d.)	29.6	29.6	29.5	t=0.10

[1] Some offenders had more than one offence type for their index admission.
[2] The violent category excludes robbery and sex offences and includes murder, manslaughter, assault, weapon offences, forcible confinement and all other non-sexual violent offences. Non-Violent Property offences include break and enter, theft, fraud, and all other non-violent property offences.

It was recognized from the outset that the use of the waiting list control procedure may result in some compromise on the experimental design of the study. For example, attrition from the control group was inevitable given that some members of the waiting list would eventually participate in the program. It was also recognized that some sites would be less rigorous than others in implementing the control group procedure. Nevertheless, the waiting list control group has a number of strengths which make it suitable for exploring differential effectiveness of the program across various sup-groups of offenders. The waiting list control group provides a large pool of candidates (n=541) who were eligible but never gained exposure to Cognitive Skills Training. The selection process assured that both waiting list control and participant groups were defined as eligible for the program following initial screening and prior to random assignment. Therefore, all members of both groups were judged to have sufficient cognitive deficits to require the program. The equivalence of the two groups on the cognitive deficit variable is perhaps the most important criterion for establishing comparability.

Follow-up Sample

As of March 31, 1995, 2,815 of the 4,072 offenders in the research sample (69.1%) had received conditional releases. This latter number constitutes the follow-up sample for the current study. An additional 53 offenders were released for various reasons other than conditional release including death, pardon, international transfer, and expiration of sentence. The current follow-up excludes these cases and focuses on the 2,815 offenders who were given conditional releases. In total, 420 (77.6%) of the waiting list control group were released compared to 2395 (67.8%) of the program participant group. The larger proportion of offenders released from the waiting list control group reflects the fact that the majority of this group were referred to the program prior to 1993 and were eligible for release for a longer period than participants. Table 6 shows the release rates for all groups including the drop-out group.

Table 6
Release by Participation Status

(n=4072)	Program Completers		Program Drop-outs		Waiting List Control	
	n		n	%	n	%
Released	2020	33.4	375	75.0	420	77.6
Not-Released	1011	66.6	125	25.0	121	22.4
Totals	3031	100.0	500	100.0	541	100.0

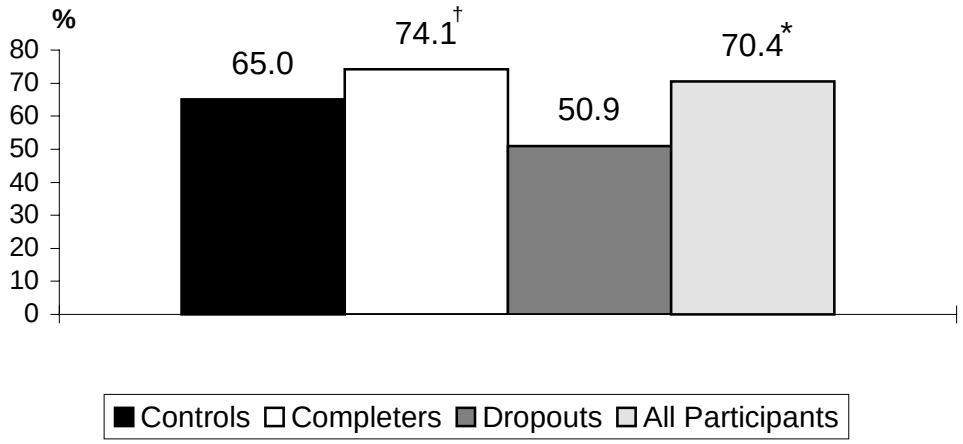
While recidivism remains the primary outcome measure in studies of program effectiveness, the impact of program participation on the granting of conditional release is also of interest. Table 7 shows release outcomes by participation status, including separate reports for completers and drop-outs. The information refers to the first release type following participation in Cognitive Skills Training or assignment to the waiting list control group. While over half of the releases (58.7%) were day parole releases, almost one third were statutory releases (30.4%). First release on full parole was a less frequent outcome (10.9%) for offenders in this sample. Program completers were significantly more likely than members of the waiting list control group to be granted release on day parole. The latter group was significantly more likely to be released on statutory release than program completers. There were no significant differences between the groups for rates of release on full parole.

To summarize the influence of program participation on the granting of releases, day parole and full parole releases were combined in an overall discretionary release measure and charted in Figure 1. Program completers were significantly more likely to be granted discretionary as opposed to statutory release than members of the waiting list control group. Discretionary release (day parole or full parole) was granted to 74% of program completers compared to 65% of waiting list control group members ($\chi 2=14.31$, $p < .001$). The effect remained significant even when program drop-outs were included with program completers. Using the release rate for waiting list controls as the expected rate, completion of Cognitive Skills Training increased the number of discretionary releases by 13.8%. An important question concerns whether potential program benefits associated with a higher early release rate are achieved without the cost of increased readmissions. This question is studied in detail when we examine the impact of program participation on post-release recidivism.

Table 7.
Release Type By Program Status

Release Type	Program Status			
	Control	Program Completers	Drop-outs	All Program Participants
Day Parole (%)	55.7	62.2	42.9	59.2
(n)	234	1257	161	1418
		$\chi^2 = 6.207$ $p < .02$		$\chi^2 = 1.79$
Full Parole	9.3	11.8	8.0	11.2
	39	239	30	269
		$\chi^2 = 2.23$		$\chi^2 = 1.38$
Statutory Release	35.0	25.9	49.1	29.5
	147	524	184	708
		$\chi^2 = 14.31$		$\chi^2 = 5.00$ $p < .03$
Totals (2815)	420	2020	375	2395

Figure 1:
Proportion of Offenders Granted Discretionary Release[1] by Program Participation Status (N=2,815



* $p < .03$, † $p < .001$

[1] Discretionary release includes day parole and full parole releases

We also examined the potential impact of the program on the granting of subsequent discretionary releases for offenders who were first released on day parole and received a second release. A total of 687 (41.5%) of all day parole releases from the sample (1652) were granted a second release (i.e., full parole or statutory release) while on day parole during the follow-up period. Of these cases, 69.3% were granted full parole and 30.7% were granted statutory release. However, program completers were no more likely (69.5%) than waiting list control group members (67.9%) to receive discretionary release in the form of full parole for their second release outcome while on day parole ($\chi 2=0.109$). Hence, it appears that the program did not impact on the granting of subsequent discretionary releases for cases initially released on day parole.

Follow-up Time

Among the 2,815 offenders in the follow-up sample, the average period between date of release and March 31, 1995

(i.e., the follow-up period) was 681.5 days (s.d. = 384.47) or 22.7 months. Total follow-up time ranged from 7 days to 1766 days. At the time the follow-up data was collected 75.5% (n=2125) of the sample had been released for a minimum of 365 days and 45.2% (n=1274) for a minimum of 730 days. Only 14.9% (n=420) of the sample had been released for a minimum of 3 years.

There were significant differences on the length of follow-up between the participant and waiting list control groups ($t=10.42$, $p<.0001$). On average the waiting list control group had been released for a longer duration (mean = 842.8 days, s.d. = 335.9) than the participant group (653.2 days, s.d. = 385.5). The difference occurred because of the phasing-out of the waiting list control group after 1993. Offenders who had been referred during the earliest periods of implementation of Cognitive Skills Training were over-represented in the waiting list control group. Therefore, there was a danger that recidivism among waiting list control group members would be higher than program participants because the latter group had a longer period of opportunity to be readmitted. For this reason it was necessary to standardize the follow-up time for the two comparison groups.

A minimum follow-up time of 365 days was used as a method of standardization. This resulted in an available sub-sample of 2,225 of the original 2,815 released offenders; 1746 program participants (82.2%) and 378 waiting list control groups members (17.8%). Standardization using this criteria ensured that the waiting list control and participant groups were “at risk” of recidivating for equivalent periods following release. Considering all released offenders who recidivated in this sample, the average number of days to readmission was slightly less than 6 months (mean = 173.32 days, s.d. = 120.11). In fact, 93.4% of all offenders who recidivated at any time during the follow-up period were readmitted within 365 days of release. Hence, the minimum follow-up period of 1 year is sufficient to demonstrate the effects of the program on readmissions. Selecting a longer follow-up period (e.g., two years, n= 1,274) would result in reducing the sample size, attenuate statistical power, and limit our ability to conduct sub-group analysis because of loss of waiting list control group members. While employing a briefer follow-up (e.g. 6 months, n = 2,400) would have

increased the sample size, the shorter duration would have been less meaningful for evaluating the effectiveness of the program.

To ensure that the participant and waiting list control groups comprising the 1-year follow-up sample were comparable on factors other than follow-up time, we re-examined the characteristics shown in Table 5. Table 8 provides the comparative statistics including tests for differences between participants and waiting list control group members as well as tests for differences between *program completers* (excluding drop-outs) and controls. Table 8 demonstrates that differences between the two released groups were minimal. Consistent with the description as reported above for the full research sample, the participant group contained significantly fewer non-violent property offenders. For the 1-year release sample, the participant group also contained a higher proportion of offenders who had been serving life sentences. It should be noted that the same pattern of differences and similarities were evident when the completer group, excluding program drop-outs, were compared to the waiting list control group. The exception, following the difference reported for the full sample, concerned a longer average sentence length among program completers. However, for the most part, program completers and waiting list control group members comprising the 1-year release sample appear to share similar characteristics.

Definition of Recidivism

Recidivism was examined using both readmission and reconviction as outcome criteria. In the section that follows *any readmission* is defined as readmission for technical violation of conditional release supervision or for readmission with a new offence (i.e. reconviction). Using the follow-up standardization procedure, only readmissions (for technical violations and reconvictions) that occurred within 365 days after release are taken into account in determining whether or not a member of the sample recidivated. Again, this ensures that the time "at risk" for readmission remains comparable across the two participation groups. Readmissions that occurred following warrant expiry are also excluded from the analyses. Hence, this report is concerned with readmissions that occurred within a 1-year period during conditional release supervision.[3]

Table 8
Characteristics of Released Offenders For 1 Year Follow-Up Sample (N=2125)

Sample Characteristics	All Waiting List Controls %/Mean (n=379)	Program Completers %/Mean (n=1444)	Chi-Square/ T-Values	All Program Participants %/Mean (n=1746)	Chi-Square/ T-Values
% First Federal Admission	54.4	55.4	0.141	54.7	0.011
Mean Sentence Length (s.d.)	4.1 (3.11)	3.8 (2.33)	*t=1.99	4.00 (3.00)	t=1.33
Indeterminate Sentences	1.36	4.04	**6.24	3.53	*4.67
% Admission Type					
Warrant of Committal	83.3	82.7	0.570	82.2	0.873
Supervision Violation	11.9	11.8		12.2	
Violation with Offence	4.8	5.5		5.57	
Other Admission Types	0	0.1		0.11	
% Offence Type					
Violent	45.2	45.3	0.000	44.7	0.043
Sex Offence	12.2	11.8	0.040	10.9	0.538
Robbery	37.0	35.7	0.219	36.2	0.092
Other Property (e.g.,B&E)	48.0	45.9	†8.933	54.5	**5.264
Drug Offence	21.4	23.5	0.694	22.4	0.174
% Aboriginal Status	12.4	11.7	0.140	12.7	0.019
Mean Age at Admission (s.d.)	28.9 (8.23)	29.4 (8.02)	t=0.89	29.0 (7.82)	t=0.16

* $p < .05$, ** $p < .02$, † $p < .01$

Results

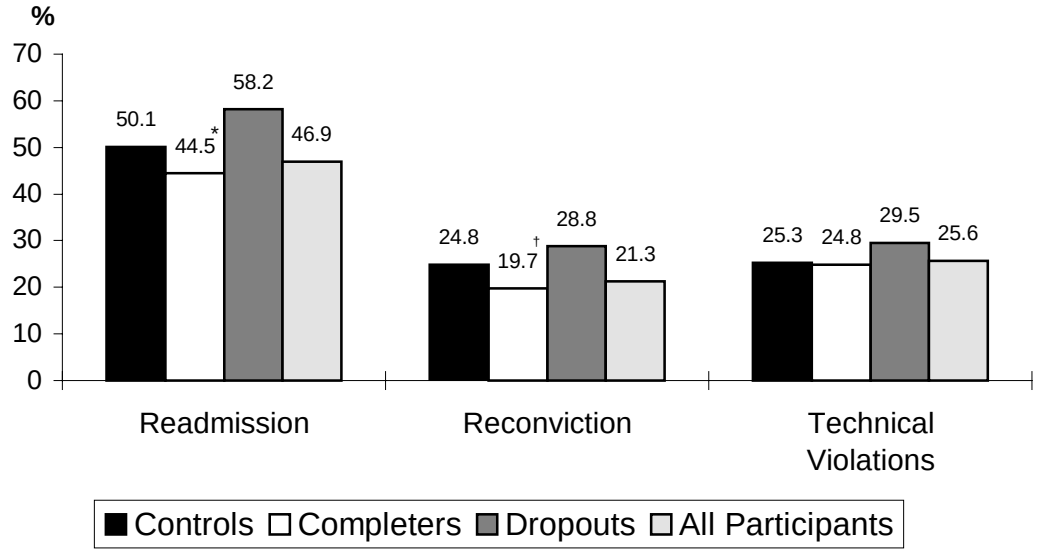
Before examining recidivism outcomes an important consideration involves the selection of the most appropriate reference group for comparing Cognitive Skills Training participants with the untreated waiting list control group. A key question concerns whether or not program drop-outs should be combined with program completers when comparing outcomes with the waiting list control group. An argument for inclusion of drop-outs with completers suggests that the initial equivalence of randomly assigned participants and waiting list controls is maintained. For example, drop-outs may constitute a homogeneous group with respect to an important variable which negatively influences release outcomes. Due to random assignment, a subset of offenders with similar characteristics may be present but essentially "invisible" in the control group. An equally compelling argument favours the exclusion of drop-outs from the participant group because they have not completed the full "dosage" of training prescribed by the program. As such, it might be argued that drop-outs are similar to controls in that both groups have not completed the program. According to this position, a bias against finding program effects is created when the participant group is combined with a sub-sample of subjects who have not truly received the program. Valid assessment of the program effects are not possible with inclusion of drop-outs because the measure of treatment has been contaminated.

In the tabulations of results that follow the rates of recidivism among waiting list control group members are compared with the rates for the true program completers and with completers and drop-outs combined (labeled *all participants)*. However, the results associated with the program completer group are emphasized in the narrative. The statistical similarity of characteristics among program completers and waiting list controls increases confidence in the outcome comparisons between waiting list controls and program completers. Moreover, the results obtained for the completer group are generally replicated with the "all participant" group. In most instances smaller treatment effects or non-significant "trends" are demonstrated when the drop-outs are included with program completers.

Figure 2 displays the rates for any readmissions, readmissions with new offences, and readmissions for technical violations within one year following release. More detailed information on the proportions in Figure 2 (n’s, statistical tests) are disclosed in

Appendix B (Table B1)[4]. The overall rate of readmission for the entire sample was 47.4%. There was a statistically significant difference related to participation in Cognitive Skills Training (p< .05): 44.5% of program completers were readmitted in comparison to 50.1% of the waiting list control group. Using the recidivism rate for the waiting list control group as the expected rate, there was a 11.2% reduction in recidivism associated with program participation. However, there was a larger reduction in recidivism as measured by official reconvictions (p<.03). While 24.8% of the waiting list control group were admitted with new offences, 19.7% of program completers had reconvictions. Hence, there was a 20.5% reduction in reconvictions for program completers. The program demonstrated no statistically significant impact on readmissions for technical violations with 25.3% of waiting list controls and 24.8% of program completers readmitted for this reason. The finding of no statistically significant program impact on technical violations was replicated in all subsequent analyses we performed.

Figure 2
Outcomes by Program Participation



* p < .05, † p < .03

Given the initial differences between program participants and waiting list controls on non-violent property offences and aggregate sentence length, it was necessary to perform further analyses using statistical controls. The effects

favoring an impact on readmissions and readmissions with new offence were diminished when analysis of covariance was used to control for non-violent property offences. The effects for both outcomes were reduced to non- significant levels ($p<.14$) for program completers. However, the effects remained unchanged when aggregate sentence length was introduced as a control ($p <.05$).[5] Although the program effects exhibited in the overall sample appear to be minimal, based on previous research (e.g., Andrews et. al., 1990), we expected that more positive effects would emerge when we examined the impact of the program on particular sub-groups of offenders.

It should be noted that in all of our outcome comparisons, program drop-outs exhibited the highest rates of readmission. Drop-outs had more new offences and technical violations than both program completers and waiting list control group members. This is not surprising given that about half of the drop-outs did not complete the program because of refusal to participate or dismissal by program delivery staff due to lack of co-operation on the part of the offender. A later section of the report will be concerned with identifying the salient characteristics of drop-outs.

Release Type

Table 9 presents separate results for day parole, full parole and statutory releases for the three recidivism outcome measures we examined. The total recidivism rates were 32.9% among full parole releases, 48.6% for day parole releases, and 50.4% for statutory releases. Program completers had lower rates of readmissions than waiting list control group members for all three release types. However, differences indicating statistically significant effects of program completion were only evident in the statutory release group. While the overall rate of readmission among statutory release cases was high (50.4%), there was a 19.4% reduction in readmissions and a 25.8% reduction in reconvictions for program completers. The positive impact of the program on statutory release cases is consistent with analyses to be reported below where it was found that offenders who are more likely to be granted statutory rather than discretionary release (e.g., violent offenders, sex offenders) exhibit good treatment response. The lack of statistically significant effects for the two discretionary release types may also suggest that the Parole Board

process forces some degree of equivalence in release readiness between waiting list controls and program completers. Nevertheless, in all comparisons there was a trend toward more successful release outcomes among discretionary release cases.

Risk and Need

The concepts of risk and need are central to issues of pre-release assessment of offenders and the selection of candidates for various correctional interventions in the Correctional Service of Canada (The Correctional Strategy, n.d.). The use of these indicators follows from basic research and theory in corrections (Andrews, 1989; Andrews, Bonta, and Hoge, 1990). In the current study risk refers to the probability of recidivism based on static criminal history variables. It is important to point out that risk refers to the risk or probability of recidivism (e.g., readmission or reconviction) and does not imply risk for the commission of particular offences nor an indication of probable severity of offences (e.g., violent sexual offences, murder). Needs refer to dynamic criminogenic factors (e.g., substance abuse, criminal cognition, other problems/deficiencies) which offenders must address in order to reduce the chances of recidivism. We examined variations in recidivism outcomes as a function of interactions between the receipt of treatment and offender levels of risk and need. In addition to providing important information about differential program impact, the use of risk and need factors provides an excellent alternative method of controlling for differences between program participants and waiting list control group members. In particular, analysis of risk and need factors provide generalized statistical controls for factors that correlate with recidivism and vary across comparison groups.

The Statistical Information about Recidivism Scale (SIR, Nuffield, 1982) is normally used by the Correctional Service of Canada to provide an actuarial assessment of risk based on criminal history. Due to the unavailability of SIR scale scores for a large proportion of cases at the time of analysis, a proxy measure based on historical data from the Offender Management System was devised. We first used multivariate statistical methods to identify criminal history variables which were correlated with recidivism in our sample and then combined the factors to form a simple risk index. The index, which correlated highly with the SIR scale, included the following items: index non-violent property

offences, robbery offences, previous federal admissions, previous revocation while on supervision, and age at program commencement (scored inversely).[6] Scores on the risk index were dichotomized to provide *low-risk* and *high-risk* groups. High-risk offenders, were readmitted at a rate of 58.4% while 36.2% of low risk offenders were readmitted (χ 2=101.25, p<.001). Post-release outcomes by risk level are presented in Table 10.[7]

Table 9
Outcomes by Release Type

Release Type	Recidivism									Totals
	Readmission			Reconvictions			Technical Violations			
	%	n	χ^2	%	n	χ^2	%	n	χ^2	
Day Parole										
Control	49.8	108		19.8	43		30.0	65		217
Completers	47. 2	448	0.483	17.8	169	0.448	29.4	279	0.029	950
Drop-outs	56.9	82		27.1	39		29.9	43		144
All Participants	48.5	530	0.127	19.0	208	0.075	29.4	322	0.024	1094
Full Parole										
Control	35.1	13		18.9	7		16.2	6		37
Completers	29.2	49	0.512	17.9	30	0.023	11.3	19	0.682	168
Drop-outs	53.9	14		11.5	3		42.3	11		26
All Participants	32.5	63	0.100	17.0	33	0.079	15.5	30	0.013	194
Statutory Release										
Control	55.2	69		35.2	44		20.0	25		125
Completers	44.5	145	4.165*	26.1	85	3.685*	18.4	60	0.15	326
Drop-outs	60.6	80		34.1	45		26.5	35		132
All Participants	49.1	225	1.449	28.4	130	2.179	20.7	95	0.033	458

* $p < .05$

Table 10
Outcomes by Risk Level

Recidivism	Low-risk (n=1011)				High-risk (n=1030)			
	Control	Program Completers	Drop-outs	All Program Participants	Control	Program Completers	Drop-outs	All Program Participants
Readmission (%) (n)	41.6 72	33.2 242	47.7 52	35.1 294	57.4 112	56.9 373	65.4 117	58.7 490
No Readmission	58.4 101	66.8 487	52.29 57	64.9 544	42.6 83	43.1 283	34.6 62	41.3 345
		χ^2=4.371 p < .04		χ^2=2.651		χ^2=.020		χ^2=.101
Reconvictions	20.2 35	13.3 97	20.2 22	14.2 119	30.3 59	28.5 187	36.3 65	30.2 252
		χ^2=5.368 p < .03		χ^2=4.039 p < .05		χ^2=.224		χ^2=.000
Technical Violations	21.4 37	19.9 145	27.5 30	20.9 175	27.2 53	28.4 186	29.1 52	28.5 238
		χ^2=.195		χ^2=.022		χ^2=.103		χ^2=.137
Totals (2041)	173	729	109	838	195	656	179	835

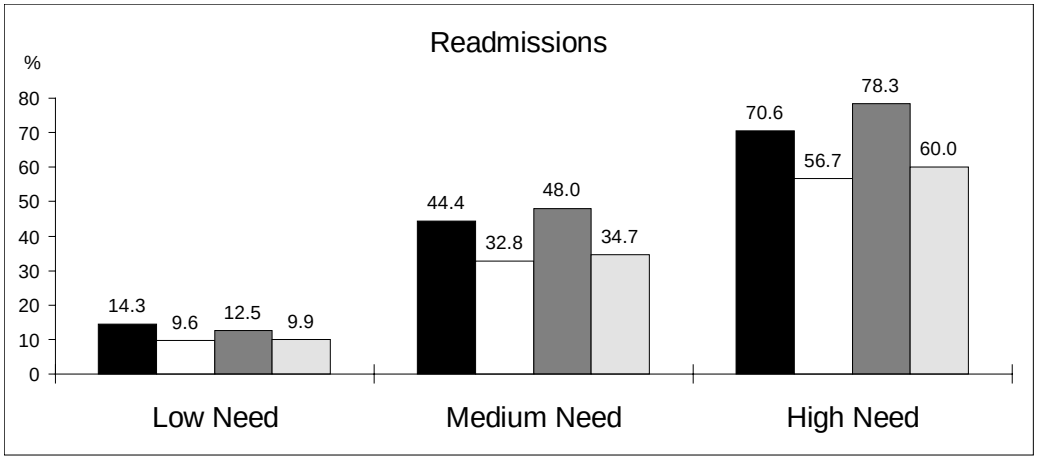
Table 10 shows greater program impact on offenders who scored in the lower range of the risk index we employed. Overall, lower risk program completers had significantly fewer readmissions and reconvictions than lower risk members of the waiting list control group. The reduction in recidivism associated with program completion was 20% for any readmissions and 34.2% for admissions with new offences. However, there were no statistically significant effects of program participation on recidivism among the high-risk cases. While the greatest treatment response is normally expected from higher risk cases (Andrews, Bonta, and Hoge, 1991), the overall high rate of recidivism recorded for this sample (47.4%) may help explain our findings. For example, while the readmission rate for the high-risk group was very substantial (58.4%), readmissions among our lower risk cases (i.e., over one third) was also considerable. Therefore, on an overall risk continuum our lower risk cases are probably at relatively high-risk of recidivism.

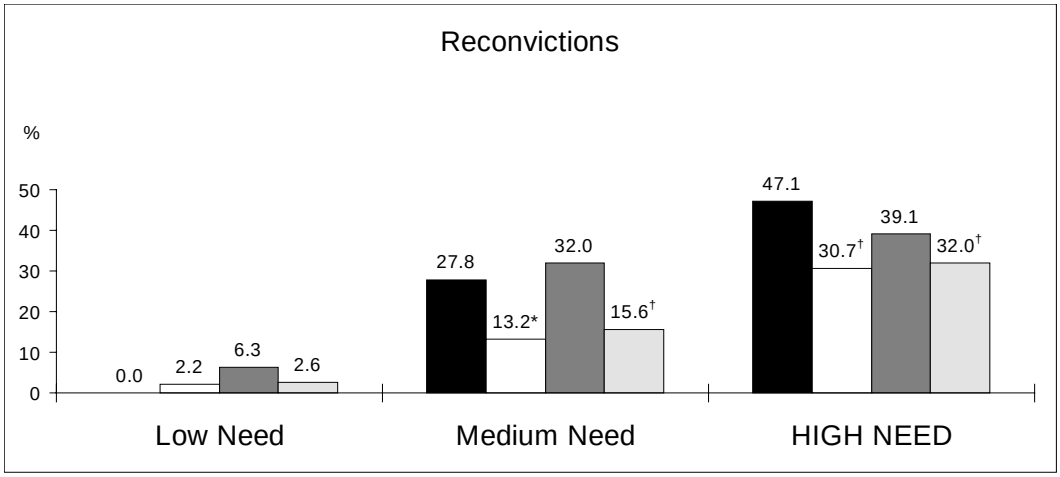
Criminogenic need was defined at release using the Community Risk/Needs Management Scale which consists of 12 criminogenic need dimensions rated by parole officers (Motiuk & Porporino, 1989).[8] Scores on the rated dimensions are combined and the total score is divided into three groups: low, medium and high-need. High-need cases refer to offenders who begin their period of community supervision with needs in multiple areas while low-need cases have a minimum of problem areas to be addressed for successful release. Need scores were only available for a minimal number of cases (n=599). The sub-sample size limits the number of waiting list control group members available for analyses and results in a considerable loss of statistical power to detect significant program effects. However, because of the centrality of the concept of need for assessment and program assignment, we chose to examine the potential moderating impact of need on program effectiveness.

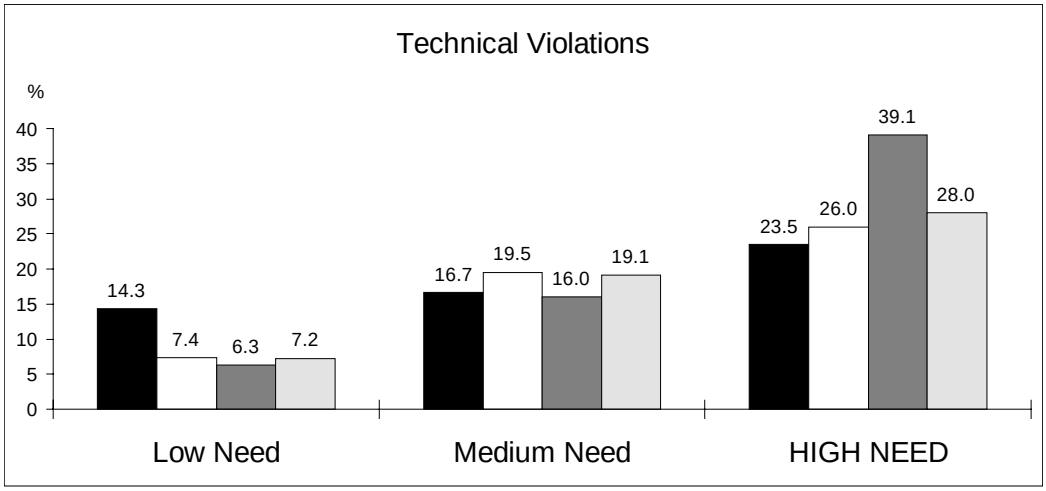
Readmissions varied by need level according to expectations with 10.5% of low-need cases, 36.2% of medium-need, and 61.9% of high-need cases

readmitted ($\chi 2=103.85$, $p<.001$). While frequently describing only non-significant trends in the data, the results presented in Figure 3 (see also Table B2, Appendix B) are nonetheless informative. For any readmissions, program completion appears to be associated with a treatment effect in the range of 15 - 30% reduction in recidivism across the three need groups. However, the effects of program completion on any readmissions were not statistically significant for any of the need groups. There were more meaningful and statistically significant reductions in recidivism by need level when we examined reconvictions. Given the extremely low rate of recidivism at the low-need level, reconviction rates for low-need cases were unaffected by program completion. At the medium-need level, however, there was a 52.4% reduction in recidivism for program completers. Even at the high-need level there was a non-significant trend toward lower reconvictions among program completers with a 34.7% reduction in recidivism.

Figure 3: Outcomes By Need Levels







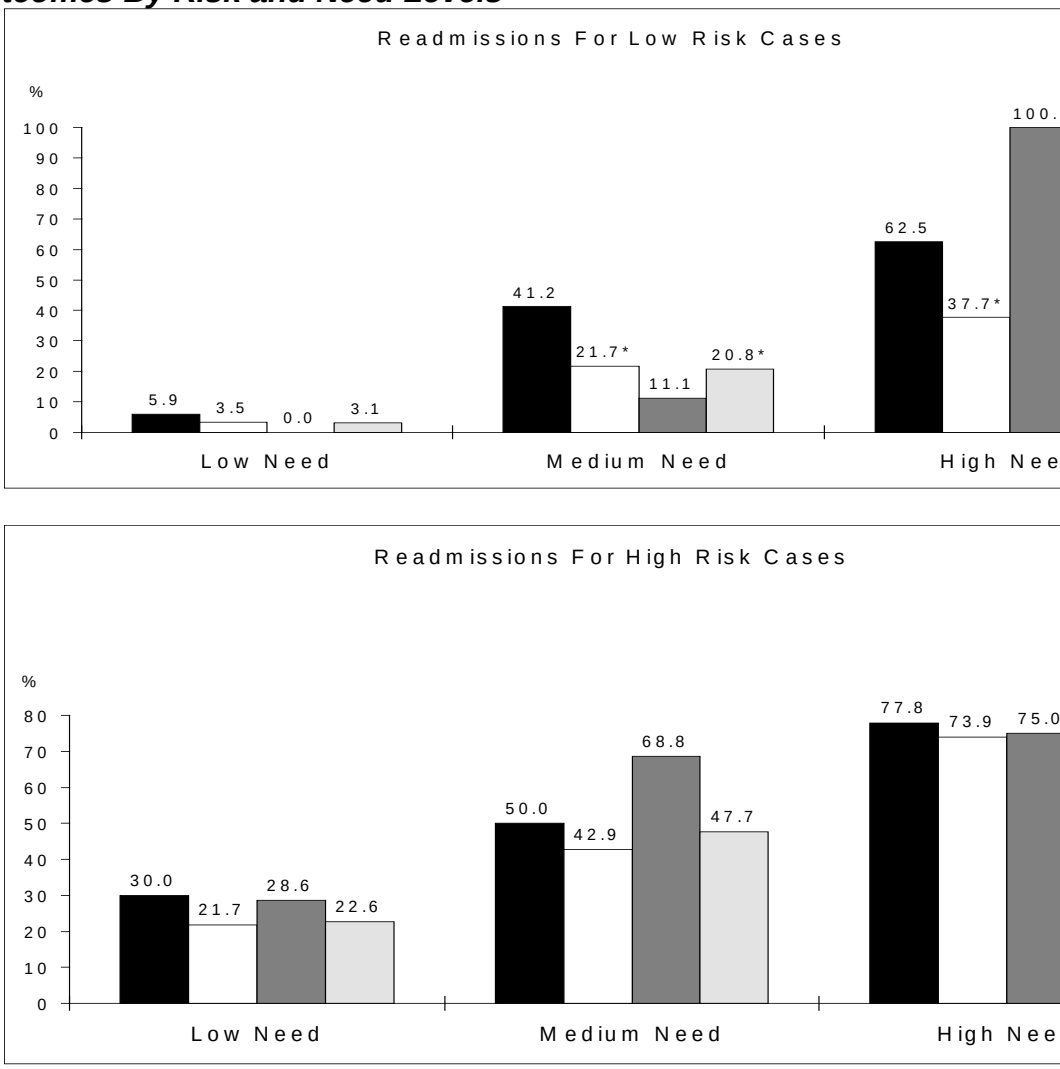
Controls Completers Dropouts All Participants

*p<3, + p<.1

The results, although tentative given the incomplete data for the sample, provide support for the policy of assigning intensive correctional interventions to higher need offenders. The low rate of readmissions (10.5%) and reconvictions (1.8%) for low-need offenders suggest that intensive treatment resources will provide little benefit to this group. This latter finding, it should be noted, is consistent with the "risk principle" as outlined by Andrews, Bonta and Hoge (1990), in that offenders who have low chances of recidivism (i.e., approximately 10% in this instance) are unlikely to profit from intervention. In contrast to our use of the actuarial risk measure described above, use of the needs instrument permitted the identification of a subset of offenders who possessed a very low recidivism base rate. As a result, it was possible to examine the program performance relative to the risk principle using a fuller range of recidivism base rates.

We also conducted a series of analyses aimed at combining risk and need to predict program outcomes. Again we acknowledge the tentativeness of these results due to the sample size and low statistical power. To simplify the interpretation of the data we have limited the presentation of findings to overall readmissions in Figure 4 (see also Table B3, Appendix B for other outcomes), although the same pattern of results emerged for reconvictions. The program effects shown in Figure 4 represent trends ($p<.1$) which were not significant at conventional probability levels. However, the strength of the trends warrants some comment. Among low-risk cases there is a meaningful treatment effect demonstrated for the medium and high-need cases where the reduction in

Figure 4
Outcomes By Risk and Need Levels



readmissions was 47.3% and 39.7% respectively. Among high-risk cases, differences between program completers and waiting list controls favored lower recidivism among program completers. However, the differences did not approach statistical trends and were much smaller in comparison to the low-risk cases. It appears that the most promising candidates for Cognitive Skill Training may be low-risk offenders who exhibit medium to high-needs. Again, the data also indicate that low-risk/low-need cases may

achieve few extra benefits from program participation. The recidivism rate for this group remains minimal regardless of treatment.

Program Delivery Setting

A question of considerable importance concerns the relative impact of Cognitive Skills Training in different correctional settings. For example, the available evidence from reviews of correctional treatment research suggests programs delivered in community settings may have greater impact on recidivism (Andrews, et al, 1990; Izzo & Ross, 1990; Losel, 1995). For this reason, we examined post-release outcomes separately for offenders who received the program in institutional and community settings.

A potential obstacle to comparisons between community and institutional settings involved the small number of waiting list control cases randomly assigned in community settings (n=13). To overcome this difficulty we used the full sample of offenders assigned to the waiting list control condition (n=379) as a control group for both institutional (n=1,936) and community cases (189). Before comparing the outcomes we examined the characteristics of community program participants and waiting list controls to ensure the two groups were statistically comparable. Table 11 demonstrates that the two groups were similar on most factors. However, there were significantly fewer robbery and violent offenders among community participants (including drop-outs). In comparison to the waiting list control group, there was also a significantly higher proportion of non-violent property offenders and slightly longer average length of sentence in the community program completer group. We used statistical controls to rule out the possibility that our outcome findings were an artifact of the differences between the two groups.

Table 11
Characteristics of the Waiting List Controls and Participants from Community Sites

Sample Characteristics	All Waiting List Controls %/Mean (n=368)	Program Completers Community %/Mean (n=131)	Chi-Square/ T-Values	All Program Participants Community %/Mean (n=186)	Chi-Square/ T-Values
% First Federal Admission	54.4	53.5	.025	49.40	1.138
Mean Sentence Length (s.d.)	3.86 (2.30)	3.40 (1.74)	*t=-2.23	3.23 (1.64)	†t=-3.43
Indeterminate Sentences	1.36	2.78	1.018	3.23	2.027
% Admission Type					
Warrant of Committal	83.33	87.02	1.149	83.96	2.140
Supervision Violation	11.90	9.92		11.23	
Violation with Offence	4.76	3.05		4.28	
Other Admission Types	0	0		0.53	
% Offence Type					
Violent	45.24	*34.35	4.720	33.33	†7.287
Sex Offence	12.17	12.21	0.000	9.68	0.769
Robbery	37.04	**22.14	9.738	22.58	††11.920
Other Property (e.g.,B&E)	54.50	43.51	4.702	47.85	2.208
Drug Offence	21.43	18.32	0.547	15.59	2.705
% Aboriginal Status	12.40	8.40	1.549	9.52	1.030
Mean Age at Admission (s.d.)	30.0 (8.19)	29.3 (6.70)	t=-0.99	28.8 (6.72)	t=-1.85

* $p < .03$, ** $p < .002$, †† $p < .01$, † $p < .001$

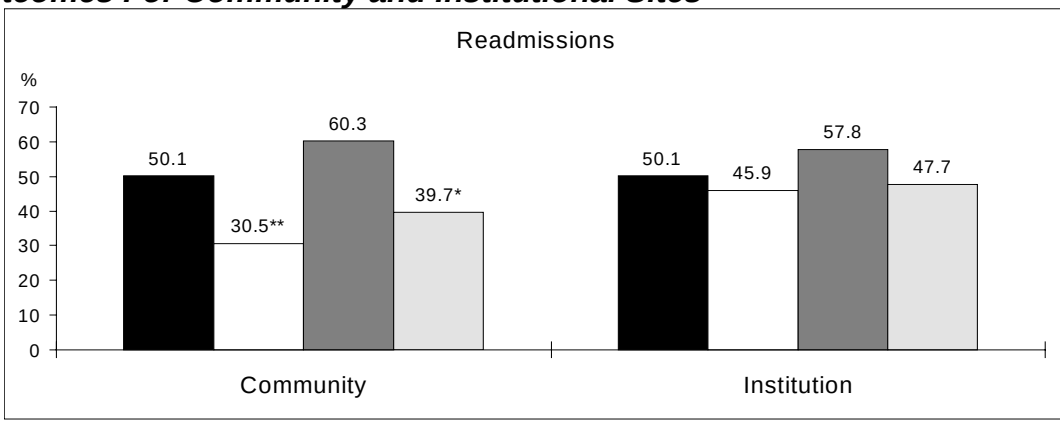
Figure 5 displays recidivism outcomes for the community and institutional groups (See also Table B4, Appendix B). Overall, offenders who received Cognitive Skills Training in community settings showed more promising treatment gains than offenders who completed programs in institutional settings. Differences on recidivism between program participants and waiting list control groups were statistically significant for the community sample. The effect for institutional cases was reduced to a non-significant level. While there was a trend toward reductions in reconvictions (16.2%) among program completers from institutional programs, there was a 66.3% reduction in reconvictions among graduates from community programs. There was also a 39.1% reduction in any readmissions for offenders who had completed the program in the community.

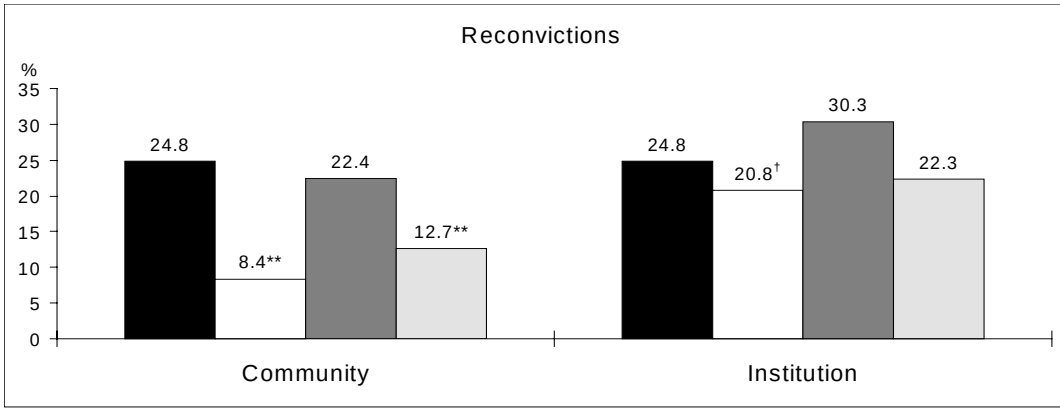
The magnitude of the effect of community-based delivery of Cognitive Skills Training promotes considerable optimism about the potential for expanded use of the program in the community. To ensure that initial differences between waiting list controls and community participants did not account for the positive findings, we used analysis of covariance techniques to statistically control for differences. The results remained relatively unchanged when the control procedure was introduced. All findings were replicated at statistically significant levels after controlling for non-violent property offences, robbery offences, violent offences, and aggregate sentence length.[9]

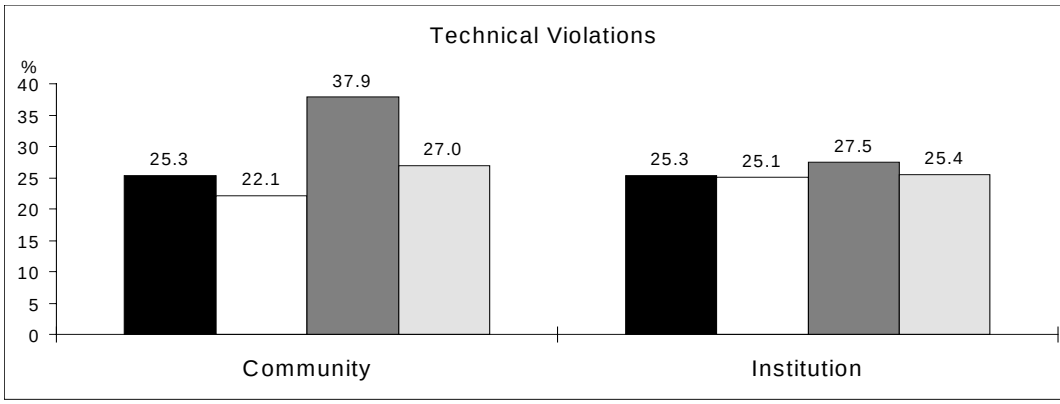
As described earlier, a difficulty that occurred in delivering Cognitive Skills Training in community settings involved a high rate of dropout from the program. Overall, 30.6% of the participants from the 1-year community release sample failed to complete the 36 session program. Lower completion rates among community participants may temper enthusiasm about the potential of the program. However, we found that there was a large treatment response for community-based delivery even when program drop-outs were included in the comparisons with the waiting list control group. The total participant group (i.e., including completers and drop-

outs) showed a 20.7% reduction in any readmissions and a 48.8% reduction in new offences.

Figure 5
Outcomes For Community and Institutional Sites







Controls | Completers | Dropouts | All Participants

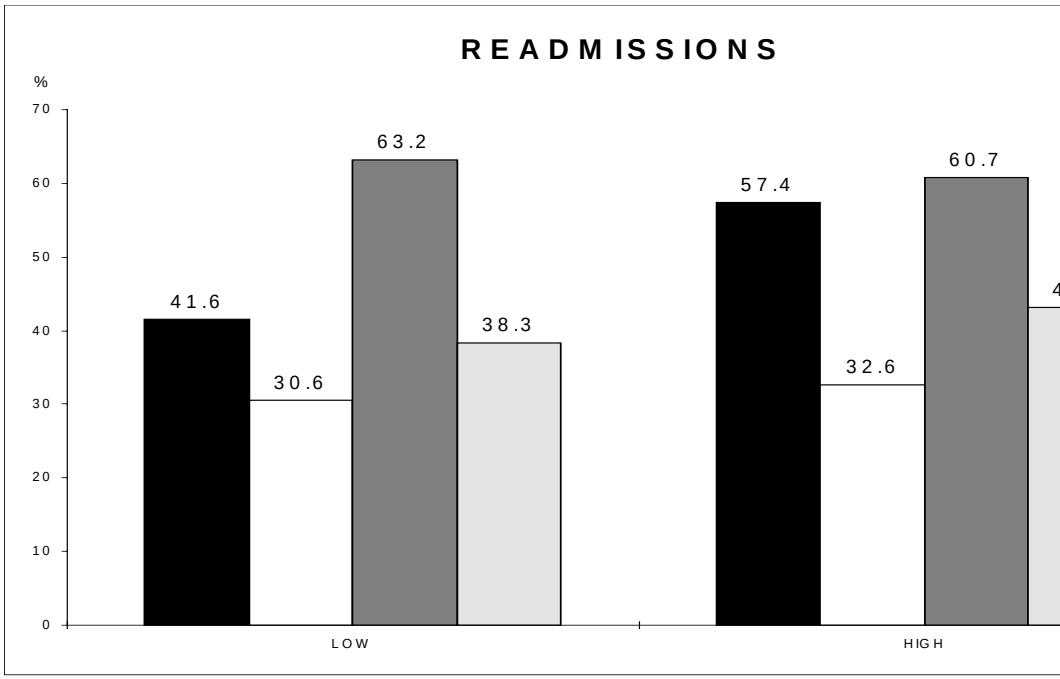
† p < .1, * p < .02, ** p < .001

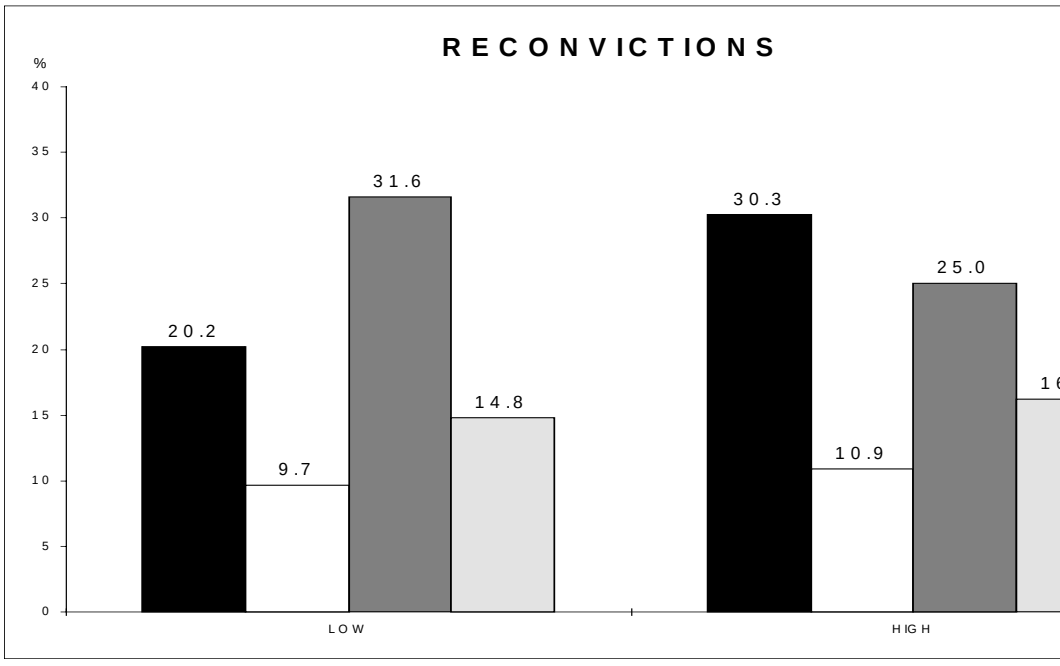
In view of the findings related to differential impact of programming by risk and need groups, we further examined effectiveness of community programming by risk level.[10] Figure 6 shows recidivism outcomes for low and high-risk offenders who completed Cognitive Skills Training in the community. Separate reports by risk level for community and institutional settings are also presented in greater detail in Appendix B (Table B5 and Table B6). It had been reported earlier that low-risk offenders gained greater benefits from program participation than high-risk offenders in the larger sample. We also found this to be true when we examined outcomes by risk level within the sub-sample of cases from institutional programs. However, among community cases, there appeared to be a reduction in recidivism for both low-risk and high-risk offenders. The magnitude of program effect among low-risk offenders who received Cognitive Skills Training in the community only reached the level of a statistical trend ($p<.1$), but differences in outcomes resembled the program effect reported earlier for low-risk cases in the larger institutional sample. Among high-risk cases in the community, the difference between program completers and waiting list controls is substantial. Overall, there is a statistically significant reduction of 43.2% in readmissions and a 64% reduction in reconvictions associated with program completion by high-risk offenders in the community.

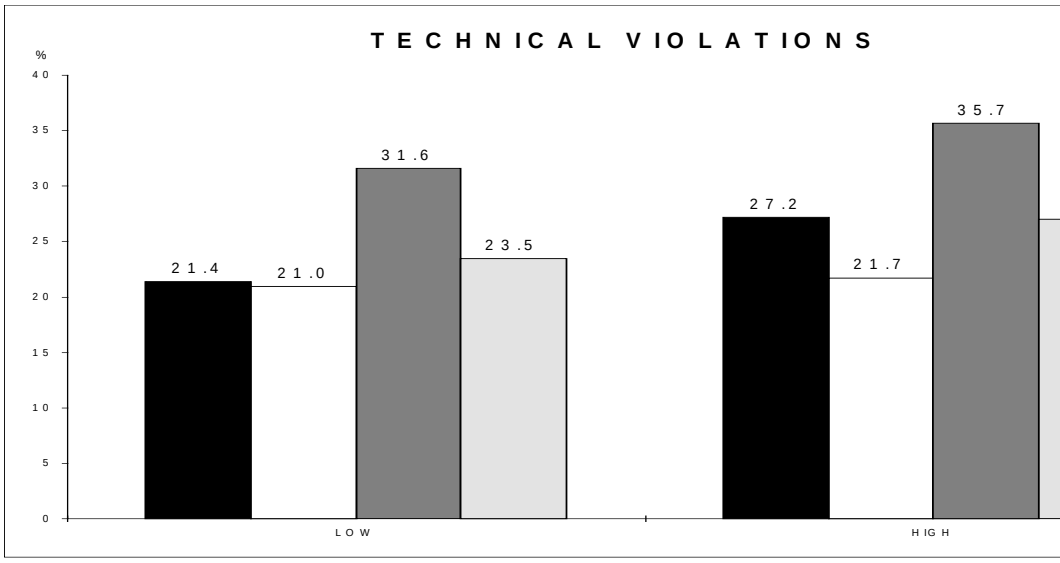
Offence Types

The search for factors which moderate the impact of Cognitive Skills Training was extended to an examination of recidivism outcomes for various offence groups. Figure 7 summarizes the differential impact of the program across the five major offence groups reported earlier in the description of the sample. More detailed information on outcome by offence type is tabled in Appendix B (Tables B7-B11).

Figure 6
Outcomes By Risk Level Among Community Participants



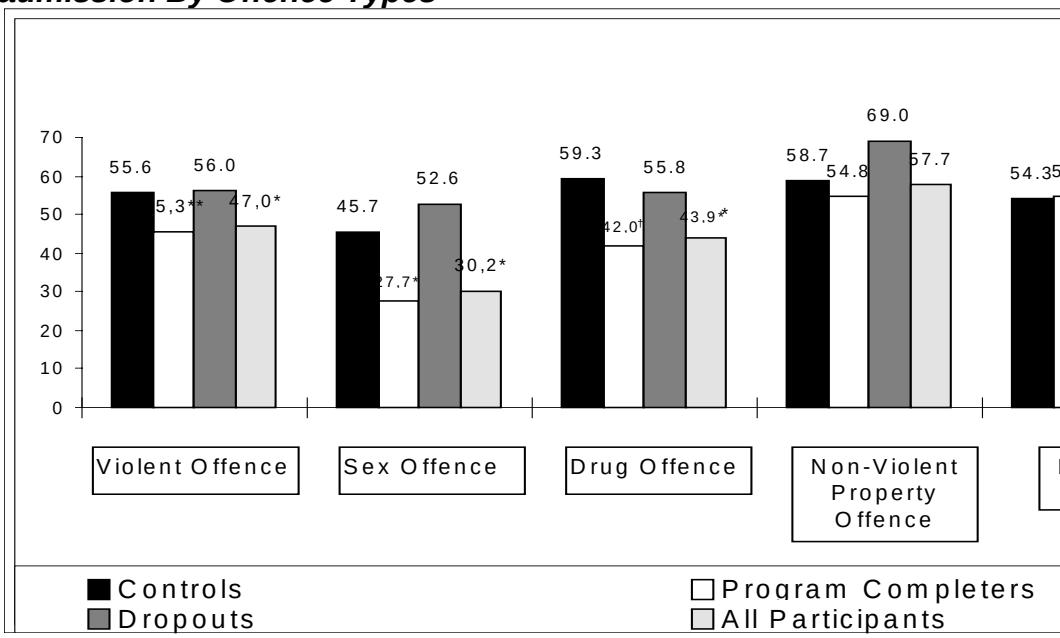




Groupe témoin | Ont terminé le programme | Ont abandonné le programme | Tous les participants

* $p < .05$, ** $p < .02$, † $p < .01$, †† $p < .1$

Figure 7
Readmission By Offence Types



*p<.05 **p<.02, +p< .01

Most striking is the relatively strong program effect for sex offenders, a group for which there is inconsistent evidence regarding treatment efficacy (Gordon, Holden and Leis, 1991). About 27% of sex offenders who completed Cognitive Skills Training were readmitted during the follow-up period compared to 45.6% of sex offenders in the waiting list control group. The difference in readmissions represents an overall reduction of recidivism of 39.4%. There was also a 57.8% drop in official reconvictions associated with program completion among sex offenders. In addition to the encouraging results on post-release outcomes, sex offenders were also more likely than other offence groups to successfully graduate from the program. The overall drop-out rate (i.e., for any reason) was 9.9% among sex offenders compared to 15.1% among non sex offenders ($\chi 2=9.124$, $p<.003$).

Two other offence groups showed positive responses to Cognitive Skills Training: violent offenders and drug offenders. As Figure 7 shows, there were significant reductions in any readmissions and reconvictions for both of these groups. There was a

reduction of 18.5% in readmissions among violent offenders and a reduction of 29.1% among drug offenders. The rate of reductions associated with program completion for new offences was 35.3% among violent offenders and 36.3% drug offenders. The results for violent offenders are important given public pressure on the correctional system to develop treatment methods for addressing problems within this group of high profile offenders.

Robbery offenders were not included in the violent offender group described above. The outcome results for robbery offenders indicated that this group appears generally resistant to program influences on recidivism. The readmission rates for robbery offenders in the program completer and waiting list control groups were identical (54%). While robbery offenders who had completed the program were slightly less likely to have reconvictions for new offences, the difference was not statistically significant. Figure 7 shows that the pattern of results for non-violent property offenders were very similar to robbery offenders. It appears that program completion among violent (i.e. robbery offenders) and non-violent property offenders is not sufficient to produce changes in the chances of recidivism.

By definition, robbery and non-violent property offenders were more likely to fall within the high-risk (68%) rather than low-risk group (32%) according to the risk measure we employed. However, there was a minority of low-risk property offenders. In order to determine whether or not low-risk property offenders might show a better response to treatment than their high-risk counterparts, we performed a breakdown of outcomes by risk level for the combined property groups. However, no pattern of statistically significant differences for either risk categories emerged from these analyses.

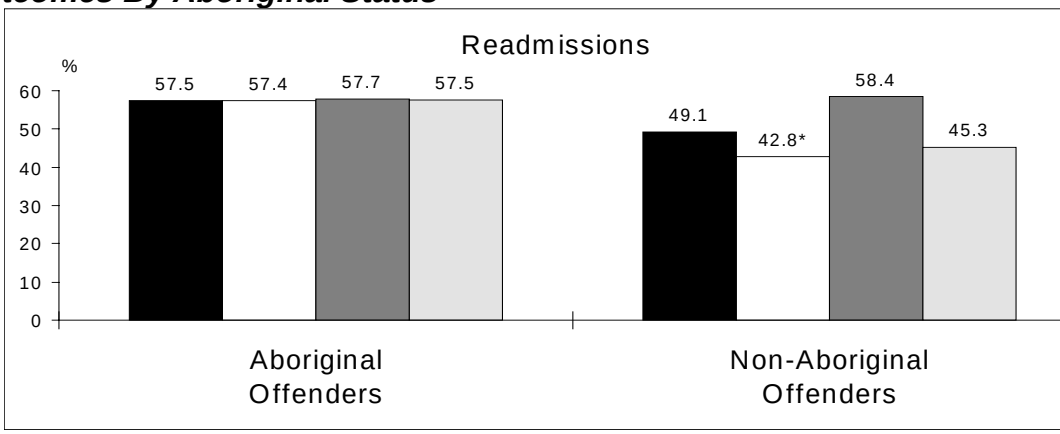
Aborignal Status

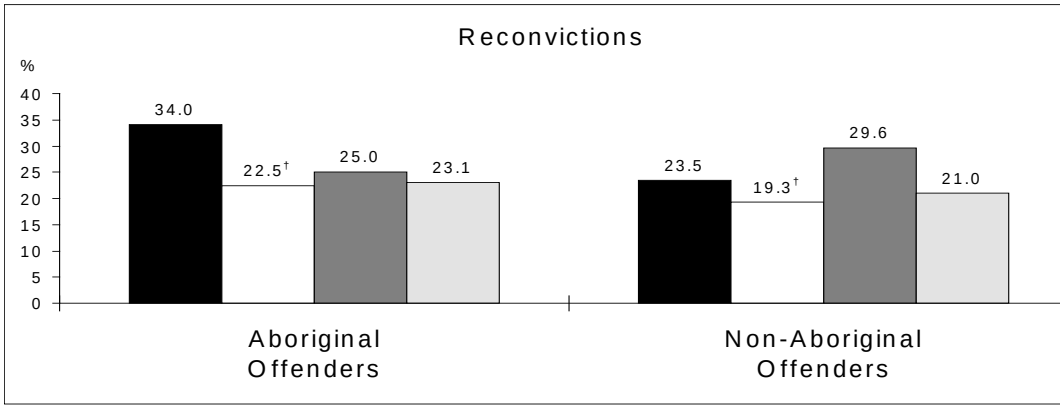
The relative success of the program with Aboriginal and non-Aboriginal offenders has been raised frequently. Figure 8 charts the outcome statistics for both groups (see also Table B12, Appendix B). The sub-sample of Aboriginal offenders (n=268) is considerably smaller than the sub-sample of non-

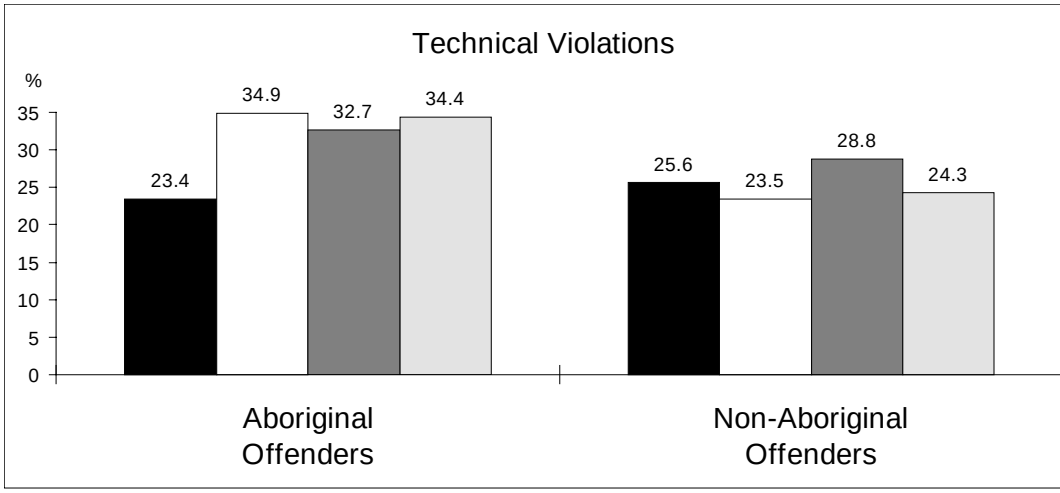
Aboriginal offenders (n=1857). The relatively small waiting list control group (n=47) for Aboriginal offenders results in considerable loss of statistical power for comparisons with non-Aboriginal waiting list control group members. However, we can comment on some trends in the data presented in Figure 8.

Among Aboriginal offenders, program completers and waiting list control group members were readmitted at the same rates (57%), suggesting no overall impact of the program on readmissions. For reasons that are not clear from the available data, Aboriginal offenders who had completed the program had a higher rate (34.9%) of technical violations than waiting list controls (23.4%). The difference was not sufficiently large to produce a statistically significant effect in this sample, but the pattern is nevertheless striking. While it might appear at first glance that the program had no influence on outcomes with this group, there was a non-significant trend ($p<.1$) favoring a reduction in new offences for Aboriginal offenders who completed the program. Assuming the lack of significance relates to the small sample size, the reduction in new offences

Figure 8
Outcomes By Aboriginal Status







Controls Completers Dropouts All Participants

* $p < .04$, † $p < .1$

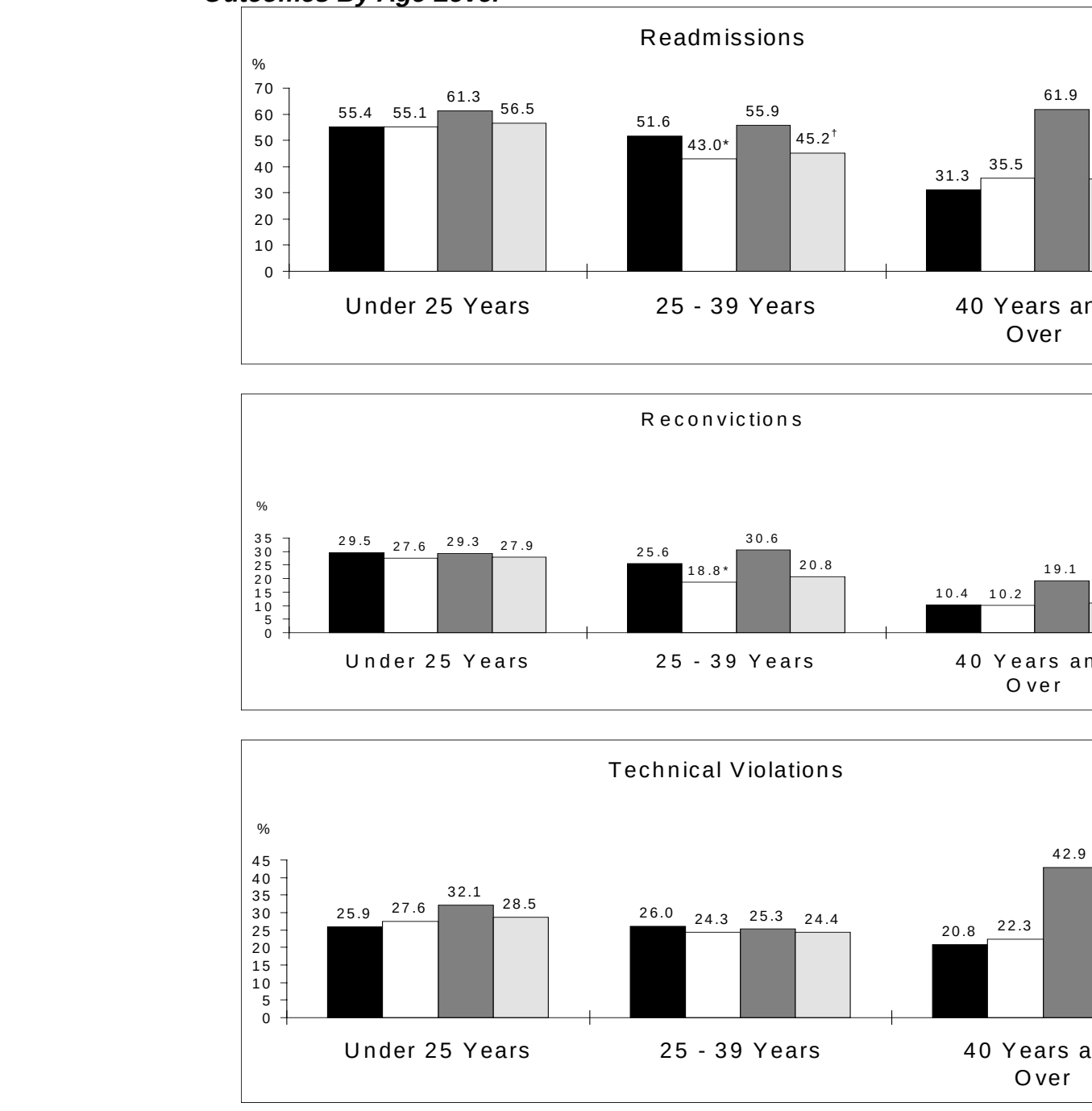
associated with program completion among Aboriginal participants was 33.9%.

There is the possibility that the reduction in reconvictions was an artifact of the increased number of Aboriginal offenders who were readmitted on technical violations of supervision rather than a genuine program effect. For example, it may be that there were fewer reconvictions in the program completer group because of the early removal of high-risk offenders through technical violations. While there is a possibility that the program produces no effects on recidivism, Aboriginal offenders may benefit from the program in other ways (e.g., institutional adjustment). Hence, the potential of the program for addressing the programming needs of Aboriginal offenders should not be discounted in the absence of other programs which might be proven more appropriate for this group.

Age

Figure 9 shows release outcomes for three age groups: under 25 years, 25 to 39 years, and 40 years and over (see also Table B10, Appendix B). The majority of offenders who participated in Cognitive Skills Training were between the ages of 25 and 39 at the time the program was delivered (59.3%). About 27% of offenders were under 25 years and 13.5% were 40 years or older. For the most part, the results by age group mirror the pattern observed earlier for risk level and reflect the fact that younger offenders are at higher risk of recidivism. Figure 9 suggests that the greatest impact on recidivism occurred for offenders in the middle range category (i.e., 25 - 39 years), while offenders in the youngest and oldest age categories exhibited no significant program response. It was not surprising to find a lack of effect among offenders under age 25. However, the finding of no effect among offenders in the 40 and over group was unanticipated. The possibility that this group is too low in risk or need to benefit from programming can be ruled out since the overall recidivism rate for the 40 and over group was 34.5%. The data provide no indication as to why this phenomena occurred. It is possible that offenders in the older age category are less motivated to participate because of the predominantly younger age composition of the program participants.

Figure 9
Outcomes By Age Level



* $p < .03$, † $p < .1$

Time to Release

The argument is frequently advanced that offenders should be exposed to correctional interventions as close as possible to their probable release dates. According to this argument, if released at a time when attitudinal changes and skills acquired from programs are still fresh, offenders will be more likely to succeed in the *real-world* application of their learning. Others argue that offenders should be engaged in a treatment process at the beginning of their sentences so that they can maximize the amount of time required to integrate program induced change before returning to the community. The current data do not provide a definitive conclusion about which position is correct. However, there is an indication that longer waiting periods between program completion and release do not dampen program effects.

We compared the outcomes for offenders released within 6 months of completing the program to outcomes for offenders released after periods which extended beyond 6 months. Contrary to expectations, Table 12 indicates that offenders who were released 6 months or more after receiving the program exhibited superior performance than their counterparts who were released in closer proximity to program completion. In part, this effect resulted because of the relatively superior post-release performance attributed to the sex offender and violent offender groups and the poorer outcomes among non-violent property offenders. Offenders who had violent or sex offences were somewhat more likely to wait longer periods before release while non-violent property offenders were more likely to be granted release sooner after program completion. We conducted further analysis by offender sub-groups (e.g., release type, risk level, offence type) to determine whether or not earlier release resulted in better release outcomes for specific sub-groups. However, no statistically significant differences emerged from these analysis. While offenders who were given earlier releases demonstrated generally poorer release outcomes, there is no evidence to suggest that early release after program participation interfered with the impact of the program. One possibility is that offenders who remained incarcerated for longer periods following participation in Cognitive Skills Training would have greater opportunity to complete other programs in the Living Skills Series or Substance Abuse programs such as OSAPP. The extended incarceration period may have afforded these

offenders with the time necessary to address additional criminogenic needs which contributed to their release success.

Table 12
Outcomes By Proximity of Release to Program Completion

Recidivism	Released Within Six Months				Releases After Six Months or More			
	Control	Program Completers	Drop-outs	All Program Participants	Control	Program Completers	Drop-outs	All Program Participants
Readmission (%) (n)	48.0 118	46.2 392	58.5 83	48.0 475	54.2 65	45.2 210	56.9 58	47.2 268
No Readmission	52.0 128	53.77 456	41.55 59	52.0 515	45.8 55	54.8 255	43.1 44	52.8 299
		χ^2=.232		χ^2=.997		χ^2=3.105 p < .1		χ^2=1.888
Reconvictions	19.9 49	21.1 179	30.3 43	22.4 222	33.3 40	20.2 94	30.4 31	22.1 125
		χ^2=.164		χ^2=.723		χ^2=9.295 p < .01		χ^2=6.914 p < .01
Technical Violations	28.1 69	25.1 213	28.2 40	25.5 253	20.8 25	25.0 116	26.5 27	25.2 143
		χ^2=.856		χ^2=.636		χ^2=.882		χ^2=1.032
Totals (2041)	246	848	142	990	120	456	102	567

Reconviction Type

Another area of investigation concerned the extent to which Cognitive Skills Training had effects on the reduction of reconvictions for specific offence types. The comparisons for reconviction type by program participation groups are presented in Table 13. There were significantly lower rates of reconvictions for sex offences and non-violent property offences for program completers. We also observed a non-significant trend showing a reduction in violent offences ($p<.1$). Using the rates for the waiting list control group members as expected rates, there was a 69% reduction in sex offences and a 33.8% reduction in non-violent property offences associated with completion of the program.

Although the rate of reconvictions for all types of offences is relatively high for this sample (21.8%), the base rates for specific offence types are understandably low. For example, the overall reconviction rate for sex offences was 0.61% for the sample or 13 offences. However, given the gravity of this offence type, the reduction of 69% associated with program completion is not trivial. While only 6 out of 1,444 program completers in this sample committed new sex offences, applying the rate for the waiting list control group implies that 19 offenders would have had reconvictions for new sex offences if they had not completed the program. While we observed only non-significant trends for the non-sexual violence reconviction type, employing the same mathematical logic, the number of reconvictions for violent offences would increase from 57 to 88 in the absence of programming for the completer group. Using these assumptions, we would also expect that the number of non-violent property offences would rise from 121 to 183.

Table 13
Types of Reconviction Offences by Program Status

Offence Types For Reconvictions	Program Status			
	Control	Program Completers	Drop-outs	All Program Participants
Violent Offence (%) (n)	6.1 23	4.0 57	6.0 18	4.3 75
		χ^2=3.219 p < .1		χ^2=2.225
Sex Offence	1.3 5	0.4 6	0.7 2	0.5 8
		χ^2=4.088 p < .05		χ^2=3.797 p < .05
Drug Offence	2.9 11	2.2 31	2.3 7	2.2 38
		χ^2=.761		χ^2=.729
Non-Violent Property Offence	12.7 48	8.4 121	13.9 42	9.3 163
		χ^2=6.555 p < .01		χ^2=3.859 p < .05
Robbery Offence	3.2 12	2.8 40	3.3 10	2.9 50
		χ^2=.170		χ^2=.101
Totals (2125)	379	1444	302	1746

Program Drop-outs

A practical problem in the implementation of Cognitive Skills Training concerns the number of offenders who do not complete the program. The overall completion rate for the program is 86%. This leaves about 3 of every 20 participants who fail to complete all components of the program. Drop-outs are wasteful of scarce programming resources when it is considered that most sites continuously maintain waiting lists of offenders who need the program and are considered appropriate candidates. Moreover, drop-outs loose personally in that they are denied or refuse an opportunity to acquire important skills for their institutional adjustment, release readiness, and post-release community adjustment. The characteristics of program completers and drop-outs are compared in Table 14. The full sample of Cognitive Skills Training participants were used for these analysis including 500 drop-outs and 3,031 program graduates.

Table 14 shows that the two groups were found to be significantly different on a number of characteristics. In comparison to program graduates, drop-outs tended to be younger at the time the program was offered, have a history of at least one revocation while under federal community supervision, were serving shorter sentences, more likely to be Aboriginal offenders, and were serving a second federal term. In addition, there were significantly more non-violent property offenders among the drop-outs, as well as fewer offenders with sex, and drug offences. Lifers were also under-represented among the drop-out group. The existence of several of these factors coupled with a noticeably low level of motivation among program referrals may be an indicator that a particular referral may not complete the program. It would be difficult to set a policy using the factors mentioned above as exclusion criteria to deny the program to potential drop-outs. However, the above factors when combined with obvious resistance on the part of the offender may give reason to place the offender on a waiting list and offer the treatment space to an offender who is more likely to benefit at that time.

Table 14
Comparison of Program Completers and Drop-outs

Characteristics	Program Completers % / Mean (n=3030)	Drop-Outs % / Mean (n=500)	Chi-Square / T-Values
% First Federal Admission	56.9	49.2	32.63 p<.01
Mean Sentence Length (s.d.)	5.2 (4.1)	4.2 (3.1)	t=6.2 p<.0001
Indeterminate Sentence	11.5	6.0	13.62 p<.001
% Offence Type			
Violent	51.8	47.6	2.96
Sex Offence	15.1	9.9	9.2 p<.01
Robbery	34.2	36.4	0.84
Other Non-Violent Property Offence (e.g., B&E)	38.1	52.9	39.23 p <.001
Drug Offence	20.6	14.5	9.86 p<.01
% Aboriginal Status	11.3	16.2	9.68 p < .01
Mean Age at Program Start Date (s.d.)	32.1 (8.7)	29.6 (7.2)	t=6.66 p<.0001

Discussion

The results of the current study furnish much needed information for addressing questions about the effectiveness of Cognitive Skills Training for federal offenders. When asked whether or not rehabilitation works, the findings permit greater confidence in responding that the Correctional Service of Canada offers programs that help reduce recidivism. The current data also allow us to provide evidence that programming works with some groups of offenders who are the greatest source of fear among members of the public (e.g., violent offenders, sex offenders). Not surprisingly, the data also suggest that the program is not a panacea and that some groups derive few benefits in terms of recidivism reduction. These findings direct attention to areas which must become the subject of further analysis by program developers in order to maximize the effectiveness of the program.

The pattern of findings involving modest effects in the full sample with larger and smaller effects emerging across various sub-groups, demonstrates the complexity of studying the effectiveness of correctional interventions. The differential impact of the program confirms the conclusions of Andrews et al. (1990) who have argued that programs work under particular conditions. The lack of an overall impact in full samples of participants can sometimes result in the dismissal of programs that are highly effective with certain sub-groups. While the effects of Cognitive Skills Training were modest in magnitude when examined in the larger sample of all participants who received the program, impressive reductions in recidivism were recorded for some offender sub-groups who represent substantial proportions within the federal offender population.

The effects associated with risk of recidivism provided important information about offenders who need more than Cognitive Skills Training for successful release. While it was expected that high-risk offenders would gain most from completing Cognitive Skills, the data did not support the assumptions for offenders who received the program in institutional settings. On the other hand, low-risk offenders appeared to benefit from the program regardless of whether they received it in institutional or community sites. Generally, program assignment is based on the principle that offenders who are at high-risk of recidivism should be given priority for treatment. It is assumed that allocation of services to low-risk offenders is wasteful because the latter group recidivate at rates which are too low to be affected by interventions.

The current results demonstrating that lower risk cases derived greater benefit from the program in both community and institutional settings does not necessarily contradict the theory and program selection practices currently employed. All of the participants were identified as high cognitive need cases through the assessment process which screened-out offenders who were already exhibiting adequate cognitive skills. As a group, members of the Cognitive Skills Training sample were high-risk offenders by any standard. The overall recidivism rate was in the 50% range for the full sample: close to 40% among low-risk cases and close to 60% among high-risk cases. The 50% of our sample who fell within the lower extremes of risk on our measure can be considered high-risk when we compare their recidivism rate to the rates for other samples of low-risk offenders. Compared to the 40% reincarceration rate observed for our low-risk cases, Bonta and Motiuk (1992) reported a rate of 24% for a sample of low-risk offenders who had been serving provincial terms of incarceration in the province of Ontario. The rate for our low-risk federal sample can also be compared with an Ontario probation sample, where the low-risk group exhibited a recidivism rate of approximately 10% (Andrews, Kiessling, Robinson, and Mickus, 1986) and a recidivism rate of 3% in a Newfoundland probation sample (Robinson and Porporino, 1989). As we alluded to earlier, It is likely that the current high-risk offenders represent the extreme of high-risk, while the low-risk cases represent a medium range among federal offenders. Andrews, Bonta and Hoge who formulated the risk principle (1990) argue that medium to high-risk offenders benefit most from treatment, but not necessarily the highest risk offenders. Our findings for offenders who received the program in institutions are consistent with this position.

The examination of offender need scores was also informative about the differential impact of the program. While we must express caveats regarding our reduced statistical power as a result of missing need scores, the findings were in conformity with current thinking about how level of need interacts with treatment outcome. The data suggest low-need, and especially low-need/low-risk cases, do not require intervention. Their readmission rates remained minimal (i.e., under 15% for readmissions and under 3% for reconvictions) regardless of whether they completed the program. Hence, when program seats are scarce, the most prudent method of reducing waiting lists would be to eliminate low-need/low-risk offenders using the quantitative assessment tools which are currently available for measuring these constructs. The procedure could eliminate up to 25% of offenders who were

referred and identified as eligible for the program. Programming resources could then be allocated to the higher need cases.

When examined by need level, the outcome data reflected a pattern already observed for risk level whereby the treatment response seemed to diminish at the highest need levels. It would be dangerous to use these findings to establish a principle to exclude tougher cases from programming because it does not "seem" to make a difference with these cases. It may be that higher risk cases could benefit from a larger dosage of the program, or a dosage delivered by a different modality. Our data provides grounds for optimism about the possibility of higher risk cases showing greater response to community-based programs where meaningful reductions in readmissions and reconvictions were associated with both the low-risk and high-risk groups. Another possibility is that the higher risk cases will benefit from a combination of Cognitive Skills Training, which provides a foundation in basic cognitive skills, with complementary cognitive-based programming which addresses other areas of assessed need (e.g., substance abuse, family violence programming, anger and emotions management, leisure education, and parenting skills). The Correctional Service of Canada's Living Skills Program, of which Cognitive Skills Training is the core component, offers a well-designed menu of cognitive based programming to address various needs. In addition, the Service offers the Offender Substance Abuse Pre-Release Program, a cognitive-based intervention for substance abusers. As the number of offenders who complete these programs grows, it will be possible to conduct research aimed at determining whether Cognitive Skills Training is most effective when combined with interventions to address other more specific criminogenic needs

Turning to program impact across release types, it is important to point out that the rates of readmissions for discretionary release did not exceed the rates for the waiting list control group even though the rate of granting discretionary release increased for program participants. A potential danger is that some offenders who are inappropriate candidates for release are mistakenly awarded early release because they have been *treated*. This danger of *false positives* can never be ruled out entirely. It is likely that some offenders who should not receive early release will always *slip through the cracks* whenever program completion is a prominent component in the release readiness equation calculated by decision-makers. The modest increase (13.8%) in the number of offenders who were granted discretionary release suggests that

decision-makers were not mislead into believing that programming provides a guarantee of community success for all offenders.

The overall rates of recidivism for day parole and full parole cases were not greatly affected by completion of Cognitive Skills Training. Initially it may be surprising that statutory release cases appeared to have a greater response to the intervention. The performance of the statutory release cases can be explained in part because the type of offenders who tend to receive statutory over discretionary releases actually made the greatest gains from completion of the program (e.g., sex offenders, violent offenders). Among the discretionary release groups, on the other hand, the rather meager differences in recidivism between the participants and waiting list control groups may have resulted because of a degree of homogeneity of risk for recidivism among discretionary release offenders. The homogeneity may be imposed through the release decision making process. It is likely that some measure of equivalence between two the comparison groups occurred by virtue of the fact that decision-makers decided that the offenders were prepared for release after assessing a diversity of pertinent factors. The similarities in the patterns of recidivism for the *treated* and *untreated* offenders may have resulted from this standardization process.

Perhaps a more realistic mark of program success is that the recidivism rate did not increase for treated cases who received discretionary release. This suggests that the gains made in getting offenders out faster were not lost through higher recidivism. A reasonable interpretation of the current data is that more offenders were released early as a result of their participation in Cognitive Skills Training because the skills they acquired during the program helped prepare them for an earlier return to the community.

The differential impact of the program by offence type raises a number of questions for further research and a series of issues for Living Skills Program implementation staff to study. The research results were impressive with respect to program impact on sex offenders, violent offenders and drug offenders. At the same time, the relative success with these offence groups should not lead to the conclusion that all sex offenders, violent offenders, and drug offenders will be influenced to the same degree upon program completion. All offenders who were considered eligible for the program were selected because they possessed characteristics that suggested they were good program candidates. Not all violent, sex, or drug offenders manifest the cognitive deficits the program targets, and not all offenders in these offence categories would

possess the level of motivation required to benefit from participation. Therefore, claims of success with these groups must be qualified to suggest that the program works well with violent, sex, and drug offenders who meet the program selection criteria. Therefore, to maintain success with these groups of offenders, Cognitive Skills Training delivery staff should preserve the current program selection criteria.

The recidivism rates for robbery offenders and non-violent property offenders, individuals who possessed the highest risk for recidivism according to several indices, were not greatly influenced by the program. One possibility is that the offenders who gained most from their participation were easily able to identify with and apply the skills to regulate their behaviour (e.g., sex offenders, violent offenders). The program content and style of Cognitive Skills Training (e.g., focus on deficits in offender processing of social information) are highly consistent with models that have been recently proposed as promising methods of treatment for violent offending by Serin and Kuriychuk (1994). These offenders may have been somewhat more motivated to work with the program and gain the requisite skills to avoid reincarceration. It may be that a minimum level of motivation and insight is necessary to sufficiently integrate the program skills so that they are available when needed in the community following release.

There is the possibility that the property offenders who showed a poor response to the program may have vigorous pro-criminal attitudes which inhibit their ability to completely commit themselves to the application of the cognitive skills. For example, robbery offenders had the highest rates for the diagnosis of anti-social personality disorder than any other offence group in a mental health survey conducted by the Correctional Service of Canada (Motiuk and Porporino, 1991). There is also evidence that robbery offenders score higher on the related construct of psychopathy as measured by the Psychopathy Checklist (Hare & Forth, 1993). Some evidence that psychopaths are not easily influenced by correctional interventions has been advanced by researchers (Ogloff, Wong, and Greenwood, 1990; Rice, Harris and Cormier, 1992) . If the criminal attitude profile of property offenders is characterized by a resistance to pro-social lifestyles, Cognitive Skills Training may not produce the intended effects until such motivational factors are addressed. Research using measures of criminal sentiments, which were administered on a pre- and post-test basis with Cognitive Skills Training participants, may provide further insight into the question of moderating effects of attitudes on treatment outcome. The criminal attitude measures will be

examined in a subsequent study using the release sample reported here.

Substance abuse problems, which are known to be correlated with criminal behaviour (Robinson, Porporino, and Millson, 1991) and recidivism (Motiuk and Brown, 1993) among federal offenders, may also figure in the poorer response exhibited by property offenders. Robbery and break and entry offences appeared to be closely linked to the commission of crimes among federal offenders (Robinson, Porporino, and Millson, 1991). The latter offences are those most frequently committed while under the influence of alcohol or drugs. Offenders who possess the kinds of substance abuse problems which figure prominently in their patterns of criminal activity, are likely to require specific substance abuse interventions in addition to Cognitive Skills Training.

As we mentioned above, offenders who do not show significant treatment gains from institutional programs, may achieve a better integration of the skills when completing the program in the community. This may be particularly relevant for the higher risk offence groups discussed above. The results for community sites demand careful assessment to determine how Correctional Service Canada can best exploit community settings to maximize success. It is not surprising that intervention with offenders in the "immediate" context of the community would have the greatest potential for the prevention of recidivism. In such settings offenders are acquiring and practicing critical new behaviours which can be reinforced immediately. We know that for many offenders on conditional release there are many situations involving impulsive decisions about whether or not to become involved in the commission of new crimes (e.g., see Zamble and Quinsey, 1991). Offenders may be able to understand and integrate new behaviour much more quickly because community programs keep them focused on how their behaviour has immediate consequences for staying on the street or returning to prison. Hence, programming may not only emphasize the latency of reincarceration for offenders who are at high-risk, but it can direct offenders to employ appropriate strategies for avoiding the undesirable outcome. Programming in the community setting may be more compelling for offenders because they are repeatedly reminded of the importance of using the skills "now".

Community-based Cognitive Skills Training may exert a powerful supervision effect because offenders are more frequently in contact with correctional authorities. The regularity of their exposure to pro-criminal models in a friendly programming setting may be an

important adjunct to the supervision they receive from parole officers. Community programming may simply serve to increase an offender's exposure to pro-social contacts. It is also likely that parole officers can play a greater role in reinforcing the treatment gains made by offenders when the programming occurs in the community.

Unfortunately, it may be unreasonable to expect that all high-risk offenders will comply with the demands of session attendance for community programs. Cognitive Skills Training consists of 36 sessions and it is unlikely that the full content of the program could be effectively imparted in fewer sessions. A programming alternative which deserves attention for higher risk cases is the *booster* approach. Post-treatment booster sessions have proven very effective in a variety of settings involving interventions that deal with behavioural problems (Whishman, 1990; Paquin and Perry, 1990). Maletzkey (1980) reported enhanced effects with booster sessions following a treatment for sex offenders and success using this technique with substance abusers has been documented (Botvin, Baker, Filazzola and Botvin, 1990;). There have also been examples in treatments for adolescents with behavioural problems and delinquents (Bry and Krinsley, 1992; Lochman, 1992), whereby pro-social behaviours were maintained using booster sessions following more structured treatment. Success with booster sessions have also been reported with social skills training (Lindeman, Fox & Redelheim, 1993; Verduyn, Lord, and Forrest, 1990) and with assertiveness training (Baggs and Spence, 1990). While high-risk offenders might not agree to complete a lengthy and intensive community program form scratch, they may be willing to participate in booster sessions if they have already completed Cognitive Skills Training in the institutional setting.

Booster sessions would provide many offenders with the extra assistance they need in following-through with the application of skills they have only managed to acquire on a theoretical level. To guarantee maximum effectiveness, the booster method should only be applied to offenders who have successfully completed the full curriculum and appear to have a need for further reinforcement of the skills. Where available, parole officers may want to refer high-risk cases at crucial periods in their community supervision, or the attendance of booster sessions might be employed as a release condition. There is also an indication that offenders would take advantage of booster sessions if they were offered. A community follow-up study based on interviews with 80 Cognitive Skills Training graduates[11] indicated that the majority felt boosters would

be a good idea. About 74% of graduates who had been successful in the community following release said they would use booster sessions and 97% of recidivists claimed that they would take advantage if the service was available. A manual for booster sessions has been developed by Correctional Service Canada Living Skills Coaches and the feasibility of its application warrants serious consideration as one strategy for exploiting the potency of programming in community settings.

The findings regarding the impact of the program on Aboriginal offenders are somewhat equivocal and do not provide the desired degree of clarity regarding whether or not Cognitive Skills Training works with this group of offenders. The most reasonable answer supplied by the current data is that there are no indications that the program has a deteriorating effect on the outcomes for Aboriginal offenders. Clearly, the high rate of readmissions exhibited by these offenders (57%) argues cogently for the development of strategies for assisting Aboriginal offenders in their community adjustment. There may be important impacts of the program on Aboriginal offenders that are not visible using the current examination of recidivism outcomes and there would be no empirical justification for excluding Aboriginal offenders from eligibility criteria. However, the current findings show that we need to do more in-depth research on the effectiveness of the program with Aboriginal offenders, perhaps with a greater qualitative component.

The current report has focused on the impact of Cognitive Skills Training on post-release recidivism - the dimension of program outcome which receives the greatest attention in evaluating program effectiveness. However there are other spheres of offender adjustment which may qualify as equally meaningful outcome dimensions. Perhaps the most obvious and immediate outcome concerns the influence of Cognitive Skills Training on the institutional adjustment for the majority of offenders who complete the program while incarcerated. In some jurisdictions (e.g., British Prison Service), the impact on institutional adjustment is seen as a primary motivation for implementing programs in prison settings and potential effects on post-release recidivism are viewed as more distant possibilities. Each session of Cognitive Skills Training focuses on concrete skills which can be directly practiced in the institutional setting. The emphasis on effective interpersonal relationships through assertiveness, objective evaluation of criticism, negotiation and other cognitive skills find critical applications in inmate dealings with staff and other inmates.

Anecdotal evidence offered by Cognitive Skills Training coaches provides rich examples of how inmates have unexpectedly and sometimes creatively applied a recently learned skill to solve a typical difficulty which emerges in the course of institutional life: requesting privileges, avoiding confrontations with other inmates, avoiding the negative influence of others, accepting negative outcomes without violent reaction. For example, correctional or case management staff have described instances involving inmates who, contrary to well-established patterns of impulsive or inadequate responding to environmental cues, surprise staff by reacting calmly or constructively when faced with a difficult situation. The program's contribution to more harmonious inmate management deserves research attention. Positive effects of Cognitive Skills Training may justify the delivery of the program to more difficult cases (e.g., high-risk) or long term inmates, even when the impact on recidivism may be unlikely or exists in the remote future.

There is also qualitative evidence, described in a forthcoming study (Mirabelli, Robinson and Weekes, in preparation), that even program completers who have recidivated, attempt (albeit unsuccessfully) to use the skills covered in the program. In a series of post-release interviews with randomly selected recidivists and non-recidivists who had completed Cognitive Skills Training, the majority within both groups of offenders were able to furnish many accounts of how they applied cognitive skills following release. Many of the accounts, even among recidivists, described situations where reinvolvement in specific crimes was avoided through the careful application of a newly mastered cognitive skill. Frequently, the skill involved creatively declining invitations of criminal peers to join in the commission of illegal acts. Obviously, for many program completers who are readmitted, the skills are not consistently applied in all situations. Nevertheless, the data provided by offenders suggest that, while a complete cessation of criminal activity may not always occur, there may be reductions in crime as a result of program participation that are not reflected in recidivism rates.

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Appendix A
Offender Selection Criteria

OFFENDER SELECTION CRITERIA

FOR THE
COGNITIVE SKILLS TRAINING PROGRAM

SEPTEMBER, 1993

About The Program

Description:
This program was developed for offenders with deficits in self-control, interpersonal problem-solving, social perspective taking and critical reasoning skills which have led them in the past to criminal behaviour. Offenders who lack these skills and whose criminal behaviour would benefit from learning these skills are considered appropriate candidates for treatment.

The program is made up of 36, two-hour sessions, offered two to five times per week. On average, a program can be completed in about eight weeks.

The Cognitive Skills Training Program is the core component of almost all other Living Skills Programs, with the exception of *Community Integration.* Offenders who need Cognitive Skills Training are eligible to take other Living Skills components upon completion of the Cognitive Skills Training program provided that they meet those selection criteria.

Program Goals:
The goals of the Cognitive Skills Training Program are to teach offenders the following skills:

- critical thinking, problem-solving and decision-making;
- general strategies for recognizing problems, analyzing them, conceiving and considering non-criminal alternatives;
- to view frustrations as a problem-solving task and not just as a personal threat;
- how to formulate plans;
- to calculate the consequences of their behaviour - to stop and think before they act;
- to go beyond an egocentric view of the world, and consider and comprehend the thoughts and feelings of other people;
- to think logically, objectively and rationally without over-generalizing, distorting facts and externalizing blame onto others;

- to develop the abilities to regulate their own behaviours so that their pro-social behaviour is not dependent on external controls (i.e., prison, the police).

Notes to Case Managers

This is a tool that will help you to identify and refer the most suitable candidates for the Cognitive Skills Training Program. Offenders who meet these criteria and who require this program should be referred in a timely fashion (about 6 months prior to requiring the program). The Living Skills Coach will complete a more comprehensive assessment to determine the appropriateness of the referral. In an institution, the referral is made via the Program Board and therefore, it is important that Case Managers are making the best referrals, so that the number of inappropriate referrals is minimized.

By targeting the most appropriate candidates, this will ensure that the program will have the greatest impact on reducing recidivism. This program has demonstrated success with appropriate referrals (high-risk/high-need offenders) and ineffective with inappropriate referrals (low-risk/low-need). As well, by referring offenders in a timely manner you will be helping to streamline those offenders who require the program prior to release or prior to other program participation.

You should keep a copy of this form which can be used in the future as a guideline to assess improvements in the offender's thinking and behaviour, especially as they relate to meeting the objectives in the Correctional Plan.

Selection Criteria For The Cognitive Skills Training Program

Date of Referral: _____ Referred by: _____

Name of Referral:_____ FPS:_____ SIR Score: _____

Instructions:

Rate the following statements for the offender that you are screening. Provide concrete, recent examples for each behaviour that rates a "very often" or a "sometimes" rating.

Consider a variety of situations when making these ratings:

- Include thinking and behaviours that occur on the range, during work hours, in the Visiting area, in school, in yard, in shops, in meal room, on the street, etc.

- Include interactions with other offenders, security staff, family, teachers, parents, shop instructors, programming staff, etc.

SELECTION CRITERIA FOR THE COGNITIVE SKILLS TRAINING PROGRAM

COGNITIVE DEFICITS	(1) RARELY /NEVER A PROBLEM	(2) SOMETIMES A PROBLEM	(3) VERY OFTEN A PROBLEM
1. PROBLEM RECOGNITION Does not recognize the early signs or cues that lead to interpersonal problems. Examples: Is told to do something a number of times, not realizing that negative consequences will occur.			
2. PROBLEM SOLVING Does not solve interpersonal problems of day-to day living. Examples: Uses quick, instant solutions; uses aggression to solve problems, complains a lot to staff instead of solving own problems; is withdrawn, depressed, isolated; uses drugs/alcohol when stressed; uses crime to get money.			
3. ALTERNATIVE THINKING Does not think of alternatives to problems when they occur. Examples: Sticks with one thing (or idea) even if getting nowhere; keeps phoning girlfriend/boyfriend after they say they don't want to visit; can only see one possible reason/explanation for something ("The Parole Board just wants to keep me in") and then doesn't change anything to improve situation.			

	(1) RARELY /NEVER A PROBLEM	(2) SOMETIMES A PROBLEM	(3) VERY OFTEN A PROBLEM
4. GOAL ATTAINMENT Not able to break a large goal into smaller steps that are more attainable. Examples: Puts future (job, school, relationship) on hold while waiting for magical solution of release. "I'll wait 'till I get out" - wants to be a tradesperson when gets out but does nothing while in prison to attain intermediate goals.			
5. CAUSAL THINKING Does not see the cause and effect relationship between his/her actions and another's behaviour. Examples: Constant mouthing off to staff and then expects support for requests; doesn't work to full capacity and expects pay level increase.			
6. EGOCENTRICITY Considers only his/her own emotional states, thoughts and views, disregarding those of others. Examples: Constant arguing over points of view; inability to accept contrary opinions ("mine is the only right one"); feels threatened by other people and ideas that are different than own (e.g., racist, sexist).			

	(1) RARELY /NEVER A PROBLEM	(2) SOMETIMES A PROBLEM	(3) VERY OFTEN A PROBLEM
7. SOCIAL PERSPECTIVE-TAKING Does not understand and read social expectations and interpret the actions of others. Examples: Uses offensive language in inappropriate places; thinks others are laughing/talking about him/her; thinks someone is "coming on" to him/her when they're not interested.			
8. EMPATHY Lacks awareness and sensitivity to other people's thoughts or feelings. Examples: Inability to listen; makes decisions without considering others in his/her life; does not consider the victims.			
9. RELATIONSHIPS Does not form acceptable relationships with people - particularly those in positions of authority. Examples: Has poor relationships with staff; cannot keep long-term relationships or relationships of equal power; is manipulative ("a user") in relationships; has few ties with family members; is the ring leader on the range or was the leader in his/her crime; and uses other people for own benefit.			

	(1) RARELY /NEVER A PROBLEM	(2) SOMETIMES A PROBLEM	(3) VERY OFTEN A PROBLEM
10. IMPULSIVITY Has the tendency to be action-oriented, non-reflective and impulsive. Examples: Not able to resist temptation; not able to stop and think before acting; sacrifices long-term rewards for short-term/instant gratification; repeats the same crimes over and over, never looking back on past consequences; doesn't work toward UTA's (long-term) and takes ETA to get out for a day (short-term) .			
11. CRITICAL THINKING Does not think about a situation and analyze it before reacting. Examples: Reacts poorly to Summary Reports, without thinking through what they intend/mean; cannot understand reasons behind situations; externalizes blame; rationalizes behaviour.			
12. RIGID THINKING Thinks rigidly and habitually in situations. Examples: Cannot accept new ideas and new information to make changes; does not look beyond his/her own rigid view of the world.			

	(1) RARELY /NEVER A PROBLEM	(2) SOMETIMES A PROBLEM	(3) VERY OFTEN A PROBLEM
13. CONCRETE THINKING Is very concrete in his/her thinking. Examples: Cannot think in the future or the abstract; present-oriented; inability to imagine "If you can't see it or feel it, then it doesn't exist".			
TOTAL POINTS	__ x 1 = __	__x 2 = __	__x 3 = __ Total Points ____

Appendix B
Detailed Tabulations

Table B1
Outcomes By Program Status

Recidivism	Program Status			
	Control	Program Completers	Drop-outs	All Program Participants
Readmission (%) (n)	50.1 190	44.5 642	58.2 176	46.9 818
No Readmission	49.9 189	55.5 802	41.7 126	53.2 928
		χ^2=3.893 p < .05		χ^2=1.345
Reconviction	24.8 94	19.7 284	28.8 87	21.3 371
		χ^2=4.815 p < .03		χ^2=2.300
Technical Violation	25.3 96	24.8 358	29.5 89	25.6 447
		χ^2=.046		χ^2=.012
Totals (2125)	379	1444	302	1746

Table B2
Outcomes By Needs Levels

Need Level	Recidivism									Totals
	Readmission			Reconvictions			Technical Violations			
	%	n	χ^2	%	n	χ^2	%	n	χ^2	
Low-need										
Control	14.3	4		0.0	0		14.3	4		28
Completers	9.6	13	0.558	2.2	3	0.629	7.4	10	1.429	136
Drop-outs	12.5	2		6.3	1		6.3	1		16
All Participants	9.9	15	0.489	2.6	4	0.754	7.2	11	1.538	152
Medium-need										
Control	44.4	16		27.8	10		16.7	6		36
Completers	32.8	57	1.796	13.2	23	*4.774	19.5	34	0.16	174
Drop-outs	48.0	12		32.0	8		16.0	4		25
All Participants	34.7	69	1.261	15.6	31	†3.150	19.1	38	0.118	199
High-need										
Control	70.6	24		47.1	16		23.5	8		34
Completers	56.7	72	2.151	30.7	39	†3.188	26.0	33	0.085	127
Drop-outs	78.3	18		39.1	9		39.1	9		23
All Participants	60.0	90	1.318	32.0	48	†2.771	28.0	42	0.28	150

* $p < .03$, † $p < .1$

Table B3
Outcomes By Risk and Need Levels

Needs Level	Low Risk									Total	High Risk									Total
	Readmission			Reconvictions			Technical Violations				Readmission			Reconvictions			Technical Violations			
	%	n	x^2	%	n	x^2	%	n	x^2		%	n	x^2	%	n	x^2	%	n	x^2	
Low Need																				
Control	5.9	1		0.0	0		5.9	1		17	30.0	3		0.0	0		30.0	3		10
Completers	3.5	3	0.228	0.0	0	s.o.	3.5	3	0.228	87	21.7	10	0.314	6.5	3	0.689	15.2	7	1.224	46
Drop-Outs	0.0	0		0.0	0		0.0	0		9	28.6	2		14.3	1		14.3	1		7
All Participants	3.1	3	0.322	0.0	0	s.o.	3.1	3	0.322	96	22.6	12	0.251	7.6	4	0.806	15.1	8	1.297	53
Medium Need																				
Control	41.2	7		29.4	29.4		11.8	2		17	50.0	9		27.8	5		22.2	4		18
Completers	21.7	21	†2.977	10.3	10.3	*4.619	11.3	11	0.003	97	42.9	30	0.296	18.6	13	0.746	24.3	17	0.034	70
Drop-Outs	11.1	1		0.0	0.0		11.1	1	0.003	9	68.8	11		50.0	8		18.8	3		16
All Participants	20.8	22	†3.391	9.4	9.4	*5.461	11.3	12		106	47.7	41	0.032	24.4	21	0.09	23.3	20	0.009	86
High Need																				
Control	62.5	10		37.5	37.5		25.0	4		16	77.8	14		55.6	10		22.2	4		18
Completers	37.7	20	†3.067	20.8	20.8	1.856	17.0	9	0.517	53	73.9	51	0.113	40.6	28	1.301	33.3	23	0.823	69
Drop-Outs	100.0	5		40.0	40.0	1.496	60.0	3		5	75.0	12		43.8	7		31.3	5		16
All Participants	43.1	25	1.893	22.4	22.4		20.7	12	0.137	58	74.1	63	0.105	41.2	35	1.248	32.9	28	0.797	85

*p< ,04 †p<.10

Table B4
Outcomes for Community Institutional Sites

Recidivism	Community				Institution			
	Control	Program Completers	Drop-outs	All Program Participants	Control	Program Completers	Drop-outs	All Program Participants
Readmission (%) (n)	50.1 190	30.5 40	60.3 35	39.7 75	50.1 190	45.9 602	57.8 141	47.7 743
No Readmission	49.87 189	69.5 91	39.66 23	60.3 114	49.9 189	54.2 711	42.2 103	52.3 814
		χ^2=15.101 p < .001		χ^2=5.533 p < .02		χ^2=2.167		χ^2=.710
Reconvictions	24.8 94	8.4 11	22.4 13	12.7 24	24.8 94	20.8 273	30.3 74	22.3 347
		χ^2=16.025 p < .001		χ^2=11.225 p < .001		χ^2=2.784 p < .1		χ^2=1.097
Technical Violations	25.3 96	22.1 29	37.9 22	27.0 51	25.3 96	25.1 329	27.5 67	25.4 396
		χ^2=.536		χ^2=.180		χ^2=.012		χ^2=.002
Totals (2041)	379	131	58	189	379	1313	244	1557

Table B5
Outcomes By Risk Level Among Community Participants

Recidivism	Low-risk				High-risk			
	Control	Program Completers	Drop-outs	All Program Participants	Control	Program Completers	Drop-outs	All Program Participants
Readmission (%) (n)	41.6 72	30.6 19	63.2 12	38.3 31	57.4 112	32.6 15	60.7 17	43.2 32
No Readmission	58.4 101	69.4 43	36.84 7	61.7 50	42.6 83	67.4 31	39.3 11	56.8 42
		χ^2=2.316		χ^2=.256		χ^2=9.204 p < .002		χ^2=4.344 p < .04
Reconvictions	20.2 35	9.7 6	31.6 6	14.8 12	30.3 59	10.9 5	25.0 7	16.2 12
		χ^2=3.530 p < .1		χ^2=1.073		χ^2=7.172 p < .007		χ^2=5.443 p < .02
Technical Violations	21.4 37	21.0 13	31.6 6	23.5 19	27.2 53	21.7 10	35.7 10	27.0 20
		χ^2=.005		χ^2=.137		χ^2=.571		χ^2=.001
Totals (2041)	173	62	19	81	195	46	28	74

Table B6
Outcomes By Risk Level Among Institutional Participants

Recidivism	Low-risk				High-risk			
	Control	Program Completers	Drop-outs	All Program Participants	Control	Program Completers	Drop-outs	All Program Participants
Readmission (%) (n)	41.6 72	33.4 223	44.4 40	34.7 263	57.4 112	58.7 358	66.2 100	60.2 458
No Readmission	58.4 101	66.6 444	55.6 50.0	65.3 494	42.6 83	41.3 252	33.8 51	39.8 303
		χ^2=4.039 p < .05		χ^2=2.889 p < .1		χ^2=.095		χ^2=.487
Reconvictions	20.2 35	13.6 91	17.8 16	14.1 107	30.3 59	29.8 182	38.4 58	31.5 240
		χ^2=4.676 p < .04		χ^2=4.045 p < .05		χ^2=.012		χ^2=.119
Technical Violations	21.4 37	19.8 132	26.7 24	20.6 156	27.2 53	28.9 176	27.8 42	28.7 218
		χ^2=.218		χ^2=.052		χ^2=.203		χ^2=.164
Totals	173	667	90	757	195	610	151	761

Table B7
Outcomes by Violent vs. Non-Violent Offence Types

Recidivism	Violent Offenders				Non-Violent Offenders			
	Control	Program Completers	Drop-outs	All Program Participants	Control	Program Completers	Drop-outs	All Program Participants
Readmission (%) (n)	55.6 95	45.3 295	56.0 70	47.0 365	45.9 95	43.9 346	59.2 103	46.6 449
No Readmission	44.4 76	54.75 357	44 55	53.0 412	54.1 112	56.2 443	40.8 71	53.4 514
		χ^2=5.776 p<.02		χ^2=4.131 p<.05		χ^2=.227		χ^2=.037
Reconvictions	32.8 56	21.2 138	31.2 39	22.8 177	18.4 38	18.5 146	27.6 48	20.2 194
		χ^2=10.088 p < .001		χ^2=7.513 p<.007		χ^2=.002		χ^2=.343
Technical Violations	22.8 39	24.1 157	24.8 31	24.2 188	27.5 57	25.4 200	31.6 55	26.5 255
		χ^2=.121		χ^2=.148		χ^2=.410		χ^2=.097
Totals	171	652	125	777	207	789	174	963

Table B8
Outcomes by Sex vs. Non-Sex Offence Types

Recidivism	Sex Offenders				Non-Sex Offenders			
	Control	Program Completers	Drop-outs	All Program Participants	Control	Program Completers	Drop-outs	All Program Participants
Readmission (%) (n)	45.7 21	27.7 47	52.6 10	30.2 57	50.9 169	46.7 594	58.2 163	48.8 757
No Readmission	54.4 25	72.35 123	47.37 9	69.8 132	49.1 163	53.3 677	41.8 117	51.2 794
		χ^2=5.441 p<.02		χ^2=4.005 p<.05		χ^2=1.834		χ^2=.481
Reconvictions	19.6 9	8.2 14	26.3 5	10.1 19	25.6 85	21.2 270	29.3 82	22.7 352
		χ^2=4.885 p < .03		χ^2=3.190 p<.10		χ^2=2.901 p < .10		χ^2=1.297
Technical Violations	26.1 12	19.4 33	26.3 5	20.1 38	25.3 84	25.5 324	28.9 81	26.1 405
		χ^2=.978		χ^2=.790		χ^2=.005		χ^2=.094
Totals	46	170	19	189	332	1271	280	1551

Table B9
Outcomes by Drug vs. Non-Drug Offence Types

Recidivism	Drug Offenders				Non-Drug Offenders			
	Control	Program Completers	Drop-outs	All Program Participants	Control	Program Completers	Drop-outs	All Program Participants
Readmission (%) (n)	59.3 48	42.0 142	55.8 29	43.9 171	47.8 142	45.2 499	58.3 144	47.6 643
No Readmission	40.7 33	57.99 196	44.23 23	56.2 219	52.2 155	54.8 604	41.7 103	52.4 707
		χ^2=7.843 p<.006		χ^2=6.405 p<.02		χ^2=.623		χ^2=.003
Reconvictions	36.8 29	22.8 77	32.7 17	24.1 94	21.9 65	18.8 207	28.3 70	20.5 277
		χ^2=5.862 p < .02		χ^2=4.758 p<.03		χ^2=1.454		χ^2=.276
Technical Violations	23.5 19	19.2 65	23.1 12	19.7 77	25.9 77	26.5 292	30.0 74	27.1 366
		χ^2=.728		χ^2=.570		χ^2=.036		χ^2=.174
Totals	81	338	52	390	297	1103	247	1350

Table B10
Outcomes by Non-Violent Property Offences

Recidivism	Offenders With Non-Violent Property Offences				Offenders Without Non-Violent Property Offences			
	Control	Program Completers	Drop-outs	All Program Participants	Control	Program Completers	Drop-outs	All Program Participants
Readmission (%) (n)	58.7 121	54.8 362	69.0 120	57.7 482	40.1 69	35.8 279	42.4 53	36.7 332
No Readmission	41.3 85	45.23 299	31.03 54	42.3 353	59.9 103	64.2 501	57.6 72	63.3 573
		χ^2=1.004		χ^2=.070		χ^2=1.148		χ^2=.728
Reconvictions	33.0 68	31.3 207	40.2 70	33.2 277	15.1 26	9.9 77	13.6 17	10.4 94
		χ^2=.208		χ^2=.002		χ^2=4.017 p <.05		χ^2=3.265 p<.10
Technical Violations	25.7 53	23.5 155	28.7 50	24.6 205	25.0 43	25.9 202	28.8 36	26.3 238
		χ^2=.447		χ^2=.123		χ^2=.059		χ^2=.126
Totals	206	661	174	835	172	780	125	905

Table B11
Outcomes by Robbery vs. Non-Robbery Offence Types

Recidivism	Robbery Offenders				Non-Robbery Offenders			
	Control	Program Completers	Drop-outs	All Program Participants	Control	Program Completers	Drop-outs	All Program Participants
Readmission (%) (n)	54.3 76	54.6 281	61.7 71	55.9 352	47.9 114	38.9 360	55.4 102	41.6 462
No Readmission	45.7 64	45.4 234	38.26 44	44.1 278	52.1 124	61.1 566	44.6 82	58.4 648
		χ^2=.003		χ^2=.117		χ^2=6.385 p < .02		χ^2=3.156 p<.10
Reconvictions	30.0 42	26.6 132	34.8 40	27.3 172	21.9 52	16.4 152	25.5 47	17.9 199
		χ^2=1.077		χ^2=.416		χ^2=3.868 p < .05		χ^2=1.988
Technical Violations	24.3 34	28.9 149	27.0 31	28.6 180	26.1 62	22.5 208	29.9 55	23.7 263
		χ^2=1.180		χ^2=1.048		χ^2=1.368		χ^2=.595
Totals	140	515	115	603	238	926	184	1110

Table B12
Outcomes by Aboriginal Status

Recidivism	Aboriginal Offenders				Non-Aboriginal Offenders			
	Control	Program Completers	Drop-outs	All Program Participants	Control	Program Completers	Drop-outs	All Program Participants
Readmission (%) (n)	57.5 27	57.4 97	57.7 30	57.5 127	49.1 163	42.8 545	58.4 146	45.3 691
No Readmission	42.6 20	42.6 72	42.31 22	42.5 94	50.9 169	57.3 730	41.6 104	54.7 834
		χ^2=.000		χ^2=.000		χ^2=4.311 p < .04		χ^2=1.572
Reconvictions	34.0 16	22.5 38	25.0 13	23.1 51	23.5 78	19.3 246	29.6 74	21.0 320
		χ^2=2.620 p < .1		χ^2=2.486		χ^2=2.886 p < .1		χ^2=1.020
Technical Violations	23.4 11	34.9 59	32.7 17	34.4 76	25.6 85	23.5 299	28.8 72	24.3 371
		χ^2=2.223		χ^2=2.133		χ^2=.670		χ^2=.239
Totals	47	169	52	221	332	1275	250	1525

Table B13
Outcomes By Age Group

Age Group	Recidivism									Totals
	Readmission			Reconvictions			Technical Violations			
	%	n	χ^2	%	n	χ^2	%	n	χ^2	
Under 25 Years Old										
Control	55.4	62		29.5	33		25.9	29		112
Completers	55.1	210	0.002	27.6	105	0.156	27.6	105	0.121	381
Drop-outs	61.3	65		29.3	31		32.1	34		106
All Participants	56.5	275	0.046	27.9	136	0.106	28.5	139	0.317	487
25 - 39 Years Old										
Control	51.6	113		25.6	56		26.0	57		219
Completers	43.0	362	5.141*	18.8	158	4.962*	24.3	204	0.293	841
Drop-outs	55.9	95		30.6	52		25.3	43		170
All Participants	45.2	457	2.961†	20.8	210	2.446	24.4	247	0.246	1011
40 Years Old and Over										
Control	31.3	15		10.4	5		20.8	10		48
Completers	35.5	67	0.029	10.2	21	0.002	22.3	46	0.051	206
Drop-outs	61.9	13		19.1	4		42.9	9		21
All Participants	35.2	80	0.279	11.0	25	0.015	24.2	55	0.253	227

* $p < .03$, † $p < .1$