

————— **Research Report** —————

**Anger Management Programming for Offenders:
The Impact of Program Performance Measures**

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**Anger Management Programming for Offenders:
The Impact of Program Performance Measures**

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Executive Summary

The present investigation is an extension of a previous controlled outcome evaluation of CSC's Anger and Emotions Management program (Dowden, Blanchette, & Serin, 1999). Although the previous study explored the effectiveness of an institutional anger management program for federal male inmates, dropout and institutional incident data were not available at the time of the final report. The present study includes this additional information to explore three major research questions.

The first issue was the impact of Anger Management programming on the frequency of institutional incidents. More specifically, treatment completers and comparison group subjects were compared to explore whether participation in an Anger Management program was associated with a significant reduction in inappropriate institutional behaviour. Interestingly, there were no significant differences documented between the number of both general and violent institutional incidents recorded for the treatment and comparison groups. However, differences in terms of time cohort may have influenced these findings.

Another area of interest was the recidivism rates for the treatment, comparison and dropout groups. Survival analyses were conducted on the rates of both non-violent (defined as any new conviction for a non-violent offence) and violent recidivism for all three groups. An overall survival analysis revealed that significant differences existed between the non-violent recidivism rates for the dropouts (52%), the untreated (30%) and the treated (10%) group subjects ($\chi^2 = 31.55, p < .001$). Further exploration of the data demonstrated that the dropout group recidivated at a significantly higher rate than either of the remaining groups ($p < .05$). An identical pattern of results was found when analyses focused on violent recidivism with the dropouts (40%) once again having the highest rate of violent reoffending compared to the untreated (17%) and the treated (5%) groups ($\chi^2 = 30.93, p < .001$).

Finally, the incremental contribution of participation in an Anger Management program to the issue of recidivism prediction was explored through logistic regression analysis. The results revealed that successful completion of an Anger Management program was associated with reduced levels of reoffending once several significant predictors of post-release outcome were statistically controlled. This finding strengthens the conclusion that the observed reductions in recidivism are attributable to participation in the program and not to other important variables such as risk level and program performance history.

An important contribution regarding this research involves the introduction of the program performance variable. This study marks the first attempt to develop a program performance composite variable and statistically control for the program performance histories of offenders when evaluating a program. The variable exhibited a strong association with recidivism reduction ($r = .32$) and, more importantly, was the strongest individual predictor of recidivism. Therefore, future

research should examine the utility of this construct across separate samples of offenders to determine its generalizability.

Finally, and related to the previous point, despite the strong predictive utility of the program performance variable, the positive impacts of participating in Anger Management programming were maintained even when controls for this variable were introduced.

In conclusion, the results from the present study suggest that issues surrounding program attrition differentially impact the effectiveness of the CSC institutional Anger Management programming. Directions for future research include incorporating waiting list control groups and a systematic appraisal of offender motivation to eliminate confounds. The effectiveness of this program modality to other offender populations (i.e. women) must also be investigated.

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Introduction

The provision of effective correctional programming to offender populations has been a focus of the Correctional Service of Canada (CSC) since the early 1980's. To this end, several different programs have been introduced which incorporate the principles of effective correctional intervention outlined by many proponents of the rehabilitation literature (Andrews & Bonta, 1998; Andrews, Bonta, & Hoge, 1990; McGuire, 1995). One of the most frequently used intervention strategies by CSC to deal with violent offenders has been the Anger and Emotions Management program (Serin & Brown, 1997) which is a component of the Life Skills programs.

Despite the general acceptance of anger control programs to address violence, little treatment outcome research has formally evaluated its impact on recidivism (Hughes, 1993; Hunter, 1993; Serin & Brown, 1997). The few studies that do exist have, for the most part, been encouraging in terms of reductions in levels of both general and violent reoffending (Dowden, Blanchette, & Serin, 1999; Hughes, 1993; Marquis, Bourgon, Armstrong & Pfaff, 1996). A recent study conducted by Dowden et al. (1999) was a large scale controlled outcome evaluation of an Anger Management program and provided the impetus for the present investigation. Accordingly, the results of this earlier study will be discussed briefly.

Dowden et al. (1999) evaluated the effectiveness of CSC's institutional Anger and Emotions Management program for federal male inmates. Within this study, the majority (86%) of the treatment and control group subjects were matched on age, incoming offence and Statistical Information on Recidivism (SIR-R) risk group while the remaining participants were matched on age and incoming offence. The large sample size (N = 220) also enabled the authors to explore the differential impacts of Anger Management program participation on groups distinguished by risk level (low versus high).

Notably but not unexpectedly, the risk level of the treatment population moderated the effectiveness of the Anger Management program. More specifically, participation in the program yielded significant reductions in both general and violent recidivism for the higher-risk cases, however these reductions in recidivism were not evident for the

lower-risk cases. This finding supported the risk principle of case classification presented by Andrews and his colleagues (Andrews & Bonta, 1998).

Despite these promising results, dropout data were unavailable for inclusion in the initial report. In addition, although the recidivism data provided strong evidence supporting the effectiveness of the Anger Management program, a more immediate outcome measure (i.e., institutional incidents) was not included in the analyses. Institutional incident data may provide an indication of how program participation aided offenders to deal more effectively with their immediate environment. Also, in the long term, it is important to determine whether intermediate gains predict more distal outcomes such as recidivism.

Description of the Program¹

The Anger and Other Emotions Management program is a cognitive-behavioral intervention delivered within 25 two-hour sessions. The program targets several criminogenic need areas of offenders such as increased self-management and self-control skills, effective problem-solving, effective communication, identifying high-risk situations (within the context of a Relapse Prevention model) as well as examining and correcting the thinking errors that underlie emotions-based aggression, through prosocial skills training.

Staff members are selected according to the characteristics of effective correctional staff outlined by Andrews and Kiessling (1980). Each staff member has been trained and certified in the training model. Regular supervision and scheduled site audits are also used to maintain program integrity. The facilitators use modeling, role-playing coupled with constructive feedback on skill performance and homework exercises to deliver the program material.

¹ A more detailed description of the program is available in the original report.

Purpose of Present Study

The purpose of the present study was to explore the impact of the Anger Management program on dropouts. In addition, various indices of program performance were examined to examine their potential moderating impact on the effectiveness of the program.

Method

The present investigation compared three separate groups of federal male offenders. These included offenders who had completed an institutional Anger Management program, a matched comparison group of untreated offenders, as well as a group of offenders who dropped out of the program.² Since this study was an extension of the original controlled outcome study conducted by Dowden, Blanchette and Serin (1999), only those analyses that were not included in the original report are presented here. The data used for this study were collected from the Offender Management System (OMS; an automated database) and Canadian Police Information Center (CPIC) records.

The first set of analyses compared the successful treatment completers with the dropouts on several demographic and risk/need variables. These analyses provided important information regarding the comparability of the two groups that could influence the institutional incident or recidivism analyses. In addition, an investigation of these variables may also highlight offender characteristics that are predictive of treatment completion. This information could ultimately be used to identify suitable program participants.

Institutional incident data were also explored within this study. An institutional incident was defined as any act by an offender that resulted in a disciplinary hearing. Various behaviours were classified as institutional incidents such as possession of contraband, possession of a weapon, assault, disruptive behaviour etc. Several analyses explored between-group differences in the occurrence of both general and violent institutional incidents. This provided an opportunity to explore the impact of Anger Management participation on immediate institutional behavior.

All three groups were compared regarding: non-violent and violent recidivism. Finally, logistic regression analysis was employed to examine the relative contribution of both client and treatment variables in the prediction of recidivism. To eliminate risk as a source of potential bias, all significant predictors of recidivism were introduced

² This is a cohort across several years and the numbers do not represent the actual drop-out rate for AEMP which is 17% (Stewart, personal communication).

into a logistic regression analysis. A conservative approach was taken whereby all of the significant predictors of recidivism were entered first to maximize their contribution to explained variance. Anger Management participation was entered on the last block to examine whether a significant reduction in recidivism was maintained within the treatment group once statistical controls were introduced for other potential moderators of post-release outcome.

To identify which variables would be subjected to the logistic regression analyses, several potential predictors of recidivism were selected from the available data. As mentioned previously, only those predictors that were significantly associated with recidivism were allowed to enter the logistic regression.

A program performance variable was also created using procedures originally introduced by Burgess (1928) and later adopted by Nuffield (1982). Five different program performance measures were included in the final formulation of this variable. These included participation in any core programs, participation in any institutional programs (Individual Counseling), participation in any support programs (e.g. Private Family Visits), any successful program completion and any unsuccessful program completion.

Core programs included Living Skills, Substance Abuse, Sex Offender Treatment, and Family Violence and programs that addressed Academic skill deficits. Support programs included activities such as Alcoholics Anonymous and visitation programs, whereas institutional programs were coded as any program type that did not fit within any of the previous two categories.

The final contributor to the composite program performance variable considers whether the offender successfully or unsuccessfully completed his previous program requirements. A successful program completion was defined as completing the program as well as adequately fulfilling all of the program skill requirements as judged by the program facilitator. It should be noted that the offender only needed to successfully or unsuccessfully complete one program to be coded in these respective categories.

The first stage in developing the composite program performance score involved determining the base rate of recidivism for the entire sample (24.1%). Next, the recidivism rate for each level of each contributing program participation variable was calculated and subtracted from the base rate for the entire sample. For every 5% difference in recidivism, a score of +1 or -1 was assigned to this level, depending on the direction of the difference. For example, if the difference was plus or minus ten percent, a score of plus or minus 2 was given. In addition, a predictor level was scored as zero if that level had a rate of recidivism that was within 5% of the base rate.

An example may more clearly illustrate the above statistical procedures. The rate of recidivism for offenders who did not participate in any core program during their period of incarceration was 46.7%, which translates into a 22.6% ($46.7 - 24.1$) difference in recidivism. Using the 5% standard introduced previously, offenders who did not participate in a core program would be given a score of +4. A "+" sign was used because offenders in this group were more likely to recidivate than the study sample (as reflected by the base rate). Clearly, one of the problems of the Burgess method concerns potential shrinkage in cross-validating samples. The rates of recidivism for each level of the predictor variables and their subsequent Burgess weights are presented in Table 1.

After these weights had been calculated, a composite program performance score was determined based on the simple summation of the weights for each of the four variables. A categorical three-level program performance variable was derived from these scores with specific attention paid to identifying approximately equal partitions of the data that were also conceptually meaningful. These categories were ranked in order from poor (+4 to +12) to excellent (-6 to -4) past program performance.

Table 1. Rate of recidivism and subsequent Burgess weight given to each program performance variable

Variable	Rate of Recidivism	Burgess score (n)
Base rate	24.1%	
Core program (0)	46.7%	+4 (62)
Core program (1)	15.8%	-1 (158)
Institutional program (0)	44.4%	+4 (64)
Institutional program (1)	16%	-1 (156)
Support program (0)	26.7%	0 (180)
Support program (1)	12.5%	-2 (40)
Successful program (0)	48.3%	+4 (58)
Successful program (1)	15.4%	-1 (162)
Unsuccessful program (0)	29.8%	+1 (124)
Unsuccessful program (1)	16.7%	-1 (96)

Results

Demographic Information

Between-group comparisons were conducted on several different demographic characteristics. Analyses revealed that members of the dropout group ($M = 32.4$ years, $SD = 8.44$) were significantly younger than the treatment group completers ($M = 35.6$ years, $SD = 8.61$), $t(296) = 2.72$, $p < .01$. Dropouts also had a significantly higher proportion of racial minority offenders (42%) than the treatment group (16%), $\chi^2 = 15.54$, $p < .001$.

Criminal Risk Assessment

The Criminal Risk Assessment component of the OIA database provided detailed information pertaining to the criminal history record of each offender. More specifically, details of past and current criminal offences were extracted from this database for between-group comparisons. In addition, the overall risk level (low, medium, or high) assigned to each offender at intake was also analysed for potential between-group differences.

Overall risk ratings were available for 92 of the Anger Management participants and 76 of the dropout subjects. Chi-square analyses demonstrated that the distribution of risk level categorizations was significantly different between the dropouts and treatment completers ($\chi^2 = 10.72$, $p < .01$). Importantly, although the dropout group had more moderate risk cases (66% versus 41%), the treatment group had a higher proportion of high-risk cases (50% versus 32%).

Analyses were also conducted on selected criminal history risk factors/variables. More specifically, between-group differences in youth and adult court history were examined. Interestingly, there were no significant between-group differences found on any of the adult- or youth-court variables.

Dynamic Factors Identification and Analysis

Using the Dynamic Factors Identification and Analysis (DFIA) component of the OIA process, the treatment group completers were also compared to the dropouts on between-group differences in terms of criminogenic needs. These need areas are grouped into seven domains, with each domain consisting of multiple individual indicators. These domains include associates/social interaction (11 indicators), attitude (24 indicators), community functioning (21 indicators), employment (35 indicators), marital/family (31 indicators), personal/emotional (46 indicators) and substance abuse (29 indicators).

Offender needs are rated on a four-point continuum with the scores ranging from “asset to community adjustment”³ to “significant need for improvement.” Ratings for each of these variables are provided by the case management officers after careful consideration of several sources of information such as the DFIA indicators, psychological evaluations, reports from staff and any other sources of pertinent information. DFIA data were available for 92 Anger Management participants and 76 of the dropout subjects.

The scores on each of these domains were dichotomized to ease interpretation. More specifically, ratings of “asset to community adjustment” and “no need for improvement” were not considered to represent a problem area whereas ratings of “some need for improvement” and “significant need for improvement” were considered to represent a problem area for the offender. The percentages of Anger Management and comparison group offenders who had an identifiable problem in any of the seven domains are presented on next page.

³ This rating is not applicable to substance abuse domain and personal/emotional domain.

Table 2. Overall Need Ratings for Anger Management and Comparison Groups

Type of Need	Treatment Completers (N = 92)	Dropout Group (N = 71)
Associates	76.1 %	80.3 %
Attitudes	62.0 %	60.6 %
Community Functioning	54.4 %	69.0 %
Employment	77.2 %	87.3 %
Marital/Family	70.7 %	73.2 %
Personal/Emotional	94.6 %	94.4 %
Substance Abuse	85.9 %	84.5 %

Table 2 clearly indicates that these groups of offenders show difficulties in a large number of need areas. The dropout group had a higher proportion of offenders who experienced problems in each need domain (with the exception of attitudes), yet when compared to the treatment completers, none of these differences yielded a significant between-group difference. These results suggest that both groups of offenders are comparable in terms of criminogenic need.

Institutional Incidents

Although post-release outcome has been routinely used to evaluate the effectiveness of correctional treatment programs, an equally important consideration is their impact on institutional behaviour. Reductions in recidivism are an important correctional goal, however, increased manageability of offenders has clear advantages to institutional staff.

Before any analyses could be conducted on the institutional incident data, preliminary analyses had to be conducted to equate the two groups on their time-at-risk before release for engaging in an incident. This time frame was easily determined for the treatment group as the offenders' files were searched for incidents between the completion date of the Anger Management program and their subsequent release date. However, to calculate the number of institutional incidents committed by the comparison group in a comparable amount of time, an equivalent time-before-release variable had to be constructed. The mean number of days between the end date of

the treatment program and release was calculated for the treatment group. This mean time before release was then used as the time frame to search for institutional incidents for the dropout group before release. This ensured that both groups had an identical mean time-at-risk before release. However, this manipulation of the data was not without compromise as both groups came from different time cohorts.

Both groups of offenders had an approximately equal number of offenders involved in an institutional incident during the time-at-risk period. However, a higher percentage of treatment completers (56%) were involved in an incident than the comparison group (48%). Analyses also revealed that the Anger Management ($M = 0.70$; $SD = 1.72$) and comparison group offenders ($M = .51$; $SD = 1.28$) engaged in an equal number of incidents during their time-before-release period. In addition, no significant difference was found between the frequency of pre- and post-program institutional incidents for the Anger Management participants.

It was hypothesized that completion of the Anger Management program would reduce the frequency of violent institutional incidents committed by the offenders. The data failed to reveal a significant between-group difference and, in fact, the treatment group had a higher (but not significant) proportion of offenders (10%) who committed a violent incident post-treatment in comparison to the comparison group (5%). The low base rate of institutional incidents is certainly worthy of note.

The final set of analyses explored the mean time-to-failure (i.e. institutional incident) for each group. Once again statistical analyses failed to reveal a significant between-group difference. However, in this case, the mean amount of time before an incident for the treatment group ($M = 140.2$ days, $SD = 150.04$) was longer than for the comparison group ($M = 124.6$ days, $SD = 97.97$).

These findings suggest that participation in the Anger Management program did not decrease the frequency of institutional incidents incurred by the treatment group but may have delayed involvement. That these groups came from separate time cohorts, however, compromises the generalizability of these results. OMS was only implemented nation-wide in 1994 and thus tracking of institutional incident data was less reliable before that time.

Post-Release Outcome

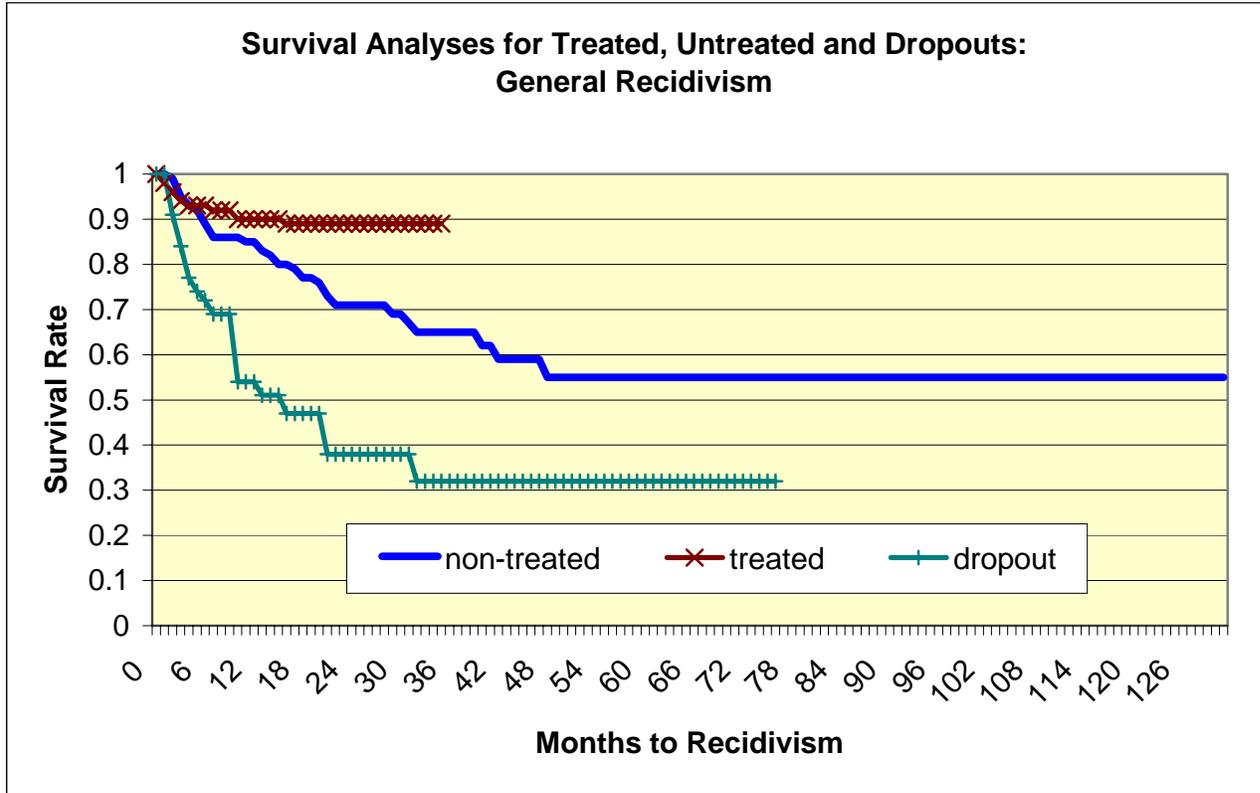
Although the between-group institutional incident comparisons provided additional data regarding the Anger Management program, the primary focus of the present investigation was to examine the effectiveness of participation in an Anger Management program on recidivism.

Non-violent Recidivism

For the present investigation, non-violent recidivism was defined as a conviction for a new non-violent offence. A survival analysis was employed to equate all three groups on time-at-risk.

Preliminary analysis of the data revealed that within a three-year follow-up period, the recidivism rates for the dropout, comparison and treatment group subjects were 52%, 30% and 10% respectively. Not surprisingly, a survival analysis revealed that the three survival curves were significantly different ($\chi^2 = 31.55, p < .001$). Follow-up survival analyses also demonstrated that the dropout group recidivated at a significantly higher rate than either the treatment ($\chi^2 = 32.45, p < .001$) or comparison group ($\chi^2 = 14.88, p < .001$) subjects. Finally, the recidivism rate for the treatment group was significantly lower than that reported for the comparison group ($\chi^2 = 5.32, p < .05$). The average time to failure was 7 months for the treatment group and 12.7 months for the comparison group. Also of those who failed, 34% of the comparison group and 55% of the treatment group did so within the first 6 months of release. The survival curves for both the treatment and comparison group subjects are presented in Figure 1.

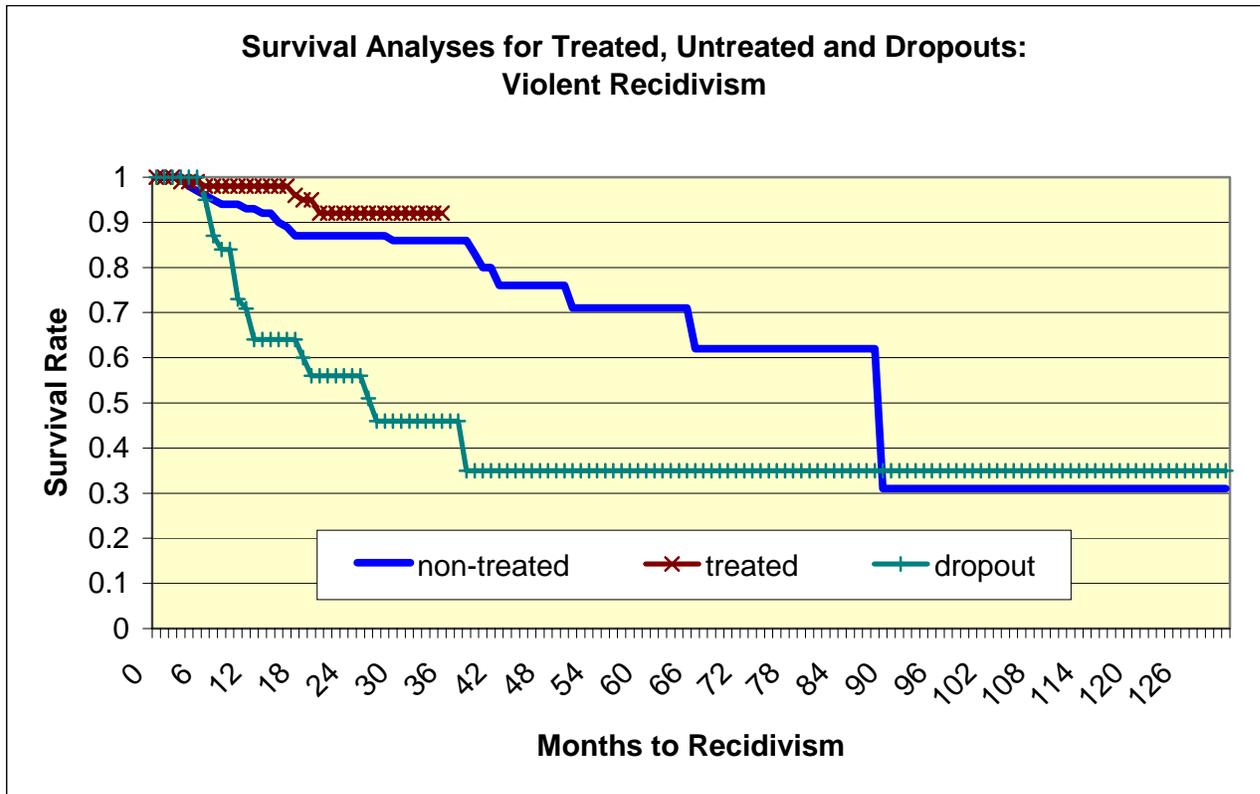
Figure 1. Comparison of Non-violent Recidivism Survival Rates for the Anger Management and Matched Comparison Group Samples



Violent Recidivism

Within a three-year follow-up period, the recidivism rates for the treatment, comparison and dropout group subjects were 5%, 17%, and 40% respectively. Once again, the survival analysis for the three groups revealed significant between-group differences in the survival rates for violent recidivism ($\chi^2 = 30.93, p < .001$). As was the case for non-violent recidivism, follow-up survival analyses revealed that the dropout group had a significantly higher recidivism rate than either the treatment ($\chi^2 = 29.32, p < .001$) or comparison groups ($\chi^2 = 16.45, p < .001$). Interestingly, the survival rates for the treatment and comparison groups were similar. It would seem the risk-level differentiation used by Dowden et al. (1999) highlights the necessity of considering offender risk in the evaluation of correctional programming. The corresponding survival rates for these groups are presented in Figure 2.

Figure 2. Comparison of Violent Recidivism Survival Rates for the Anger Management and Matched Comparison Group Samples



Predictors of Recidivism

Despite the strong support provided for the effectiveness of the Anger Management program within the survival analyses, additional analyses were conducted to explore the incremental contributions of program participation to higher rates of release success. Consequently, we selected several potential predictor variables of recidivism from our available data bank.

For the purposes of these analyses, we used a broader definition of recidivism that entailed any return to custody for a violent or non-violent offence. Both indices of recidivism were aggregated as the utility of running two separate analyses for the determination of significant predictors for both violent and non-violent recidivism seemed quite limited given the small number of violent failures.

The zero-order correlations between each of the predictor variables selected and recidivism are presented in Table 3. Only those variables that had a significant univariate relationship with recidivism were allowed to enter further analyses.

Table 3. Zero-order correlations between each predictor and recidivism

Predictors (N = 220)	Correlation with Recidivism
Age	-.03
SIR group	-.18**
Program Performance Variable	.32**
Time-at-risk in the community	-.26**
Institutional Incident (Yes/no)	.02
Young Offender History	-.10
Age (25 and under; 25-35; 36 and over)	.03
Current Violent Offence	-.06

Logistic regression analysis was employed since a dichotomous measure of post-release outcome (i.e., success vs. failure) was used. The variables were entered simultaneously, with the significant predictor variables entering the regression in the first block and treatment group (i.e. Anger Management vs. Comparison) entering on the final step. This allowed us to examine whether participation in the Anger Management program contributed significantly to recidivism prediction once the influence of each of the significant predictors was statistically controlled.

The results of the logistic regression revealed that participation in the Anger Management program maintained a significant relationship with recidivism ($p < .05$) even after controlling for the other significant predictors of recidivism. This finding is important as it demonstrates more clearly that the observed reductions in reoffending may be attributed to participation in the Anger Management program and not to other extraneous factors (such as past program performance).

Since the program performance variable had a strong association with post-release outcome, controls for the potentially biasing effects of this variable were introduced

by matching the Anger Management and comparison group offenders on the three-level program performance variable. This matching procedure reduced our sample to 41 matched pairs who were matched on age, SIR-R, incoming offence and program performance. The time-at-risk for both groups was approximately equal, thus eliminating the need for survival analysis. Follow-up analyses revealed that although the comparison group recidivated at a rate that was almost three times as high as the Anger Management group (19.5% vs. 7.3%), this difference was not statistically significant, $F(1,80) = 2.65$, $p < .11$, $\text{Eta} = .18$. However, the strong, albeit not significant, reductions in recidivism realized by the Anger Management group enhance our confidence that the positive program effects are in fact influenced by Anger Management participation and not other factors such as program performance and risk.

One final analysis was conducted using the program performance variable. As this variable has strong implications for future program evaluations and to test the experimental rigor of this variable, the offender risk level (as measured by the SIR-R) was introduced into a logistic regression analysis first followed by the program performance variable on the second block. This allowed the static offender risk variable to explain the maximum of variance at the outset while potentially minimizing the role of program performance. The results revealed that past program performance still contributed significantly to the prediction of recidivism beyond risk grouping. This finding bodes well for the utility of this composite variable. It also highlights the necessity for program evaluators to attend to the influence of past program performance on outcome. The past program performance histories of the offenders have a strong influence on the obtained results.

Discussion

The purpose of the present investigation was to provide an extended exploration of the effectiveness of an institutional Anger Management program. The program was delivered to a sample of 110 adult male federal offenders who were essentially matched to a comparison group on risk rating, age and incoming offence. Data from 78 dropout subjects were also included in the final analyses for comparative purposes, given the criticism often raised by failing to consider this when reviewing program evaluation results. (Quinsey, Rice, Harris, & Lalumière, 1993).

Surprisingly, the frequency of institutional incidents was the same for both the treatment completers and comparison group subjects within several sets of analyses. These findings apply to the frequency, seriousness and time until first incident. However, the low base rate of institutional incidents may have limited statistically significant findings from emerging. Also, many of the individuals included in the comparison group were incarcerated pre-1994 which was the year that the OIA was implemented. Therefore, tracking of institutional incidents before this period was less reliable, perhaps affecting the results.

In terms of recidivism, it appeared that partial participation in the program, (i.e. dropouts) was not associated with significant reductions in reoffending. In fact, the dropouts were associated with significantly increased rates of recidivism compared to the treatment completers and comparison group subjects. However, potential moderating factors such as motivation level may have interfered with these findings. Future program evaluation research should ensure that measures of offender motivation are available so that the potentially moderating effects of client motivation may be controlled. In addition, the introduction of a waiting list comparison group could also address this issue methodologically. Such rigor would enable us to draw more concrete conclusions regarding the impact of program participation on recidivism.

Interestingly, participation in the Anger Management program was associated with strong reductions in reoffending even when controls were introduced for several other significant predictor variables through logistic regression analysis. This finding

highlights the effectiveness of this particular program and the potential value of broadening the scope of the availability of the program.

The methodology by which these results were achieved must also be highlighted. More specifically, other significant predictors of recidivism were entered first into the regression analysis, thus maximizing the opportunity of these variables to predict recidivism. In other words, Anger Management participation would only be considered if it contributed *unique* variance to the final equation. This more conservative approach still resulted in significant program effects of Anger Management participation.

Further to this point, matching the Anger Management and comparison groups of offenders on age, risk, incoming offence, and program performance revealed that the Anger Management group had a violent recidivism rate that was almost three times lower than the comparison group, and eight times lower than the dropouts. Combining this finding with the results from the previous logistic regression and survival analyses implies that the observed reduction in reoffending for the Anger Management group is strongly influenced by their successful program completion.

Directions for Future Research

Although this study provided supportive evidence for the effectiveness of institutional Anger Management programming, future research must expand on the findings presented here.

Clearly, more work needs to be done on the applicability of the Anger Management program to women offenders. Recent meta-analytic findings (Dowden & Andrews, 1999) demonstrated that the "promising" and "less promising" targets outlined by Andrews and Bonta apply equally well to women offenders. More specifically, programs that targeted antisocial cognitions (one of which was anger management) produced a mean effect size of .38. The strength of the findings from the present study in combination with the meta-analytic evidence is support that the Anger Management program should broaden its scope to include women offenders.

There is also a paucity of research examining "what works" for violent Aboriginal offenders. Subsequent research could try to investigate program effectiveness, moderated by ethnicity factors.

Finally, the program performance variable introduced in this study has considerable promise for future studies involving correctional treatment program evaluation. The main purpose of conducting any controlled outcome evaluation is to demonstrate that the program you are evaluating is achieving its goal, typically, to reduce offender recidivism. Fundamental, however, is the need to ensure the treatment and comparison groups subjects are as equivalent as possible. Although the preferred strategy is to randomly assign offenders to treatment and comparison groups, this is not always possible. Therefore, controlling for factors that may influence recidivism is important. Otherwise, the difference between success rates of the two groups may not be due to the program itself, rather due to other extraneous variables. An illustration may make this point more clear.

For example, consider that one wanted to evaluate a cognitive-behavioral treatment program for first-time federal male inmates who were over 50 years old at the time of their incarceration. If the evaluators selected a comparison group made up of 15-17

male juvenile repeat offenders, critics could rightly argue that the effectiveness of the program was confounded with the age of the participants. More specifically, the fact that the cognitive-behavioral treatment group recidivated less than the comparison group would not be surprising as age has been found to be a significant predictor of recidivism. Therefore, the conclusion that the program was effective would be invalid as this result could be alternatively explained. Consequently, the evaluators would have to more effectively ensure that the treatment and comparison group offenders were as similar as possible on potentially confounding variables.

Although this is an extreme example, it illustrates the necessity of employing a rigorous methodological framework when evaluating any correctional treatment program. The issue of program performance and history is often overlooked when trying to equate the groups. This is problematic, as the offenders who have participated in the program of interest have also undoubtedly participated in other treatment programs (Mailloux & Serin, 2000). Therefore, as illustrated in the previous example, the effectiveness of a particular intervention may be masked by the program participation histories of offenders in either the treatment or comparison groups.

The program participation histories of the treatment group may augment the effectiveness of the intervention in several ways. First, it is possible that the effectiveness of a particular program may not simply be a result of the program itself but augmented by another program in which the offenders had previously participated. Furthermore, it is possible that the treatment group participated in a significantly greater number of correctional intervention programs than the comparison group (i.e., dosage). Thus, it may not be the particular intervention but the sheer exposure to various treatment programs. Finally, it may be that the offenders in the treatment group more frequently successfully complete their assigned programs and this increased manageability led to their acceptance into the program under investigation. In other words, these offenders may have been more motivated. Considering drop-outs may address this, but there a range of program non-completions: refusals, being ejected, transfer, and dropouts. Similar research should be conducted with more specific definitions of noncompletion.

The program participation histories of the comparison group may also attenuate the effectiveness of the program. For example, the comparison group offenders may have participated in more treatment programs than the treatment group. More importantly, the comparison group may have participated in more programs that targeted criminogenic as opposed to noncriminogenic needs than the treatment group. Finally, staff may not be equal in skill and this could differentially affect post-program performance (Serin & Preston, 2001).

Therefore, a program performance variable such as introduced in this study should be more fully explored in the future. In this manner, a standardized program performance variable may be developed. In particular, analyses should be conducted to explore whether making the variable more sensitive to the frequency of programs taken increases its predictive utility. For example, does changing the different contributors to the Burgess weights from dichotomous to continuous have any impact on the predictive utility of the program performance variable? Notwithstanding encouraging results for the CSC anger control program, much more research is required to more clearly distill the essential program components.

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