

————— **Research Report** —————

**The Heterogeneity of
Treatment Non-Completers**

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The Heterogeneity of Treatment Non-Completers

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EXECUTIVE SUMMARY

Although attrition from correctional programs is a concern in terms of both correctional planning and research on treatment effectiveness, the literature has been difficult to interpret because of a general lack of clarity and consistency in definitions of attrition. Attrition from correctional programs is both an applied and methodological issue. In applied work, non-completers appear to be at higher risk for recidivism than are completers and, therefore, are most in need of treatment. How does one provide adequate treatment to offenders who do not complete programs? Methodologically, non-completers pose a threat to the validity of studies on treatment effectiveness because non-completers are identified in, and removed from, the treatment group, whereas in the no-treatment group, offenders who would have failed to complete the program had they started it typically go unidentified. Thus, effects in favour of treatment can often also be explained by the exclusion of non-completers from the treatment group but not from the no-treatment group.

Variability in the definition of attrition has made it difficult to synthesize the literature to identify predictors of attrition and to develop evidence-based strategies aimed at reducing attrition from correctional programs. Although attrition of all types is a concern for program providers, administrators, and researchers, it is unlikely that non-completers constitute a homogeneous group. There are many reasons why an offender may not complete treatment; only some of these would be expected to involve risk and motivation.

If only certain types of attrition are associated with elevated risk and low motivation, then combining different operational definitions of attrition may yield inconclusive research results and lead to the inefficient management of offenders who do not complete treatment. The purpose of the current research was to explore the extent to which various types of non-completers differ from each other and from completers in terms of their risk, criminogenic need (a.k.a. dynamic risk), and motivation for intervention.

Participants were 7,484 federally sentenced male offenders who had participated in at least one correctional program between April 2002 and March 2004. Because most offenders (67%) participated in only one program during this 2-year period, completion status was examined exclusively for offenders' first program in this time frame. The first program in which offenders participated was most likely to have been a living skills program (46%), a moderate-intensity program (64%), and a program delivered in a medium-security institution (46%).

Three quarters of the offenders completed the program (73%), 5% failed to complete for administrative reasons, 11% did not complete due to personal circumstances, and 11% dropped out or were expelled. *Administrative reasons* refers to non-completion that was generally beyond the direct control of the offender. *Personal circumstances* indicates non-completion because of behaviour outside of the program or due to circumstances unrelated to the program. *Dropout/expulsion* refers to non-completion because of withdrawal or expulsion from the program. In the analyses of group differences, only small or larger effect sizes (Cohen's $d \geq 0.20$) were considered indicative of a meaningful difference.

Dropouts/expulsions were more likely to be Aboriginal than were completers and personal circumstance non-completers; hence, Aboriginal offenders were examined separately from non-Aboriginal offenders. The differences between non-White non-Aboriginal offenders and White offenders, however, were negligible; therefore, White and non-White non-Aboriginal offenders were combined into one non-Aboriginal group.

Among non-Aboriginal men, the greatest distinction generally appeared to be between the dropouts/expulsions and the remaining groups. Compared to completers, dropouts/expulsions a) were younger, b) were higher risk on the SIR-R1, c) had higher levels of static risk, d) had greater criminogenic need, and e) had lower levels of motivation for intervention. The same results were found when the dropouts/expulsions were compared to administrative non-completers. Fewer differences were observed between completers and administrative non-completers and between dropouts/expulsions and personal circumstance non-completers.

Turning to the Aboriginal men, compared to completers, dropouts/expulsions a) were younger, b) had greater criminogenic need, and c) had lower levels of motivation for intervention. Similar differences were found when the dropouts/expulsions were compared to administrative and personal circumstance non-completers. Far fewer differences, however, were found when the administrative and personal circumstance non-completers were compared to the completers.

Thus, for both the non-Aboriginal and Aboriginal offenders, dropouts/expulsions were most distinct from completers in terms of risk, need, and motivation. Perhaps preparatory programs for high risk/need offenders to address responsivity issues, such as low motivation, may reduce the likelihood of dropout/expulsion. In general, attending to the heterogeneity of non-completers may provide greater clarity in research, which may lead to more effective strategies for retaining higher risk offenders in programs, and, ultimately, to greater reductions in recidivism.

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INTRODUCTION

Although attrition from correctional programs is a concern in terms of both correctional planning and research on treatment effectiveness, the literature has been difficult to interpret because of a general lack of clarity and consistency in definitions of attrition. Failure to complete correctional programs is a robust predictor of recidivism, and non-completers are generally higher in risk and lower in motivation than are completers. Attrition from correctional programs is both an applied and methodological issue. In applied work, non-completers are higher risk for recidivism than are completers and, therefore, are most in need of treatment. How does one provide adequate treatment to offenders who do not complete programs? Methodologically, non-completers pose a threat to the validity of studies on treatment effectiveness. Variability in the definition of attrition has made it difficult to synthesize the literature to identify predictors of attrition and to develop evidence-based strategies aimed at reducing attrition from correctional programs. The purpose of the current research was to explore the extent to which various types of non-completers differed from each other and from program completers on measures of risk, criminogenic need, and motivation for intervention.

Offenders who do not receive treatment because of attrition may be the ones who need it the most. Many researchers have found that offenders who fail to complete treatment are higher risk and more likely to recidivate than are offenders who do complete treatment (Daly & Pelowski, 2000; Hanson et al., 2002; Van Voorhis, Spruance, Ritchey, Listwan, & Seabrook, 2004; Wormith & Olver, 2002). This presents an obstacle to one of the principles of effective offender rehabilitation, the *risk principle*, in which intensity of treatment should be matched to the level of risk posed by an offender (Andrews & Bonta, 2003). In other words, the highest risk offenders should receive the most treatment. If the higher risk offenders are not completing treatment, however, it is not possible to provide them with a sufficient amount of treatment. From a correctional planning perspective, then, reducing attrition should be a high priority.

In addition to the challenge attrition poses for the rehabilitation of offenders, it also creates problems for researchers evaluating the effectiveness of correctional programs. In this area of research, treatment condition (treatment vs. no treatment) is generally confounded with treatment completion (Rice & Harris, 2003). More specifically, attrition can have an asymmetrical effect on the groups, such that the non-completers in the treatment group are identifiable but the offenders in the no-treatment comparison group who would have dropped out

of the program remain unidentified. Researchers do not know which or how many of the offenders in the no-treatment group would have failed to complete had they been given the chance to take the program and, thus, the would-be non-completers cannot be removed from the comparison group. Given that non-completers appear to be higher risk, the no-treatment comparison group may be more likely to recidivate simply because it includes an unknown portion of offenders who would have failed to complete the program and not due to the effects of treatment. Researchers have the option of retaining the non-completers as part of the treatment group, but this may not always be an ideal solution (Marshall, 1993).

Attrition is a concern for program providers, administrators, and researchers, but it is unlikely that non-completers constitute a homogeneous group. There are many reasons why an offender may not complete treatment; only some of these would be expected to involve risk. For example, Wormith and Olver (2002) organized attrition into three types: client-initiated dropout, agency-initiated expulsion, and administratively based exit. In the first type, an offender decides to discontinue the program. The second type includes offenders who are expelled for disruptive behaviour or unsatisfactory performance in the program. Finally, administratively based exit refers to attrition due to transfer or release that has “nothing to do with the offender’s need for treatment or performance in it” (p. 449, Wormith & Olver, 2002).

It remains unknown whether offenders who do not complete programs for various reasons differ from each other and from completers in terms of risk, need, and motivation for treatment. We would speculate that non-completers differ from completers only when certain types of attrition are considered. For example, someone who drops out or is expelled from treatment may be higher risk than a completer, whereas an offender who did not complete a program because of administrative reasons may not be higher risk than an offender who completed the program, all other things being equal.

Whereas some researchers have restricted their operational definitions of attrition to dropouts and expulsions (e.g., Beyko & Wong, 2005; Wormith & Olver, 2002), more often investigators have combined different types of attrition (e.g., Craissati & Beech, 2001; Geer, Becker, Gray, & Kraus, 2001; Van Voorhis et al., 2004). Collapsing across attrition types may have been done out of necessity because of insufficient sample size or because more complete information about the reasons for non-completion were unavailable to the researchers. Despite the necessity of general operational definitions of attrition in some cases, their use likely limits

the contribution such research can make to our understanding of treatment non-completion when there is heterogeneity among non-completers. For example, if risk is associated with only certain types of attrition, we may fail to detect this relationship when we collapse across attrition type. Such limitations can hinder our ability to design effective, evidence-based strategies to address the problem of program non-completion.

If only certain types of attrition are associated with elevated risk and low motivation, then combining different operational definitions of attrition may yield inconclusive results. The purpose of the current research was to explore the extent to which various types of non-completers differed from each other and from completers on measures of risk, criminogenic need, and motivation for intervention.

METHOD

Participants

Participants were 7,484 federally sentenced male offenders who had participated in at least one high-, medium-, or low-intensity correctional program between April 2002 and March 2004. Only those with a program start date of January 1, 2002, or later were included. The average age of the offenders at the start of the program was 34.77 years (standard deviation [*SD*] = 10.65) and ranged from 18 to 83.

As shown in Table 1, the majority of the sample consisted of White offenders who were convicted of non-sex offences. An offender was classified as (a) a sex offender if he had any current sexual offence convictions or (b) a non-sex offender if he had no current sexual offence convictions.

For those with determinate sentences ($n = 6,907$), the mean current sentence length was 4.64 years ($SD = 3.99$). A small proportion of the sample (7.7%; 577/7,484) was serving indeterminate sentences (e.g., life).

Women offenders were not included in the current study because the number of women offenders was too low to adequately address our research questions. Specifically, a total of 182 women offenders had participated in correctional programs during the timeframe under study. Of these, 76.9% ($n = 140$) completed the program; 6.0% ($n = 11$) failed to complete due to administrative reasons; 12.6% ($n = 23$) failed to complete due to personal, but not program-related, circumstances; and 4.4% ($n = 8$) dropped out.

Table 1 - Description of Sample on Racial Composition and Offender Type

	<i>N</i>	%
Race	7457	
White	5368	72.0
Aboriginal	1236	16.6
Non-White non-Aboriginal	853	11.4
Current conviction(s)	7482	
Sexual	1325	17.7
Non-sexual	6157	82.3

Note. Total *N* does not equal 7,484 due to missing data.

Measures

Risk was assessed with the Statistical Information on Recidivism - Revised 1 (SIR-R1) scale (for non-Aboriginal offenders only) and the Level of Intervention Based on Static Factors rating (for both non-Aboriginal and Aboriginal offenders). Criminogenic need was measured by the Level of Intervention Based on Dynamic Factors rating. Finally, motivation was defined as the Motivation for Intervention rating.

Statistical Information on Recidivism – Revised 1 (SIR-R1) Scale

The Statistical Information on Recidivism Scale - Revised 1 (SIR-R1; Standard Operating Practices [SOP] 700-04; Nafekh & Motiuk, 2002) is an actuarial instrument designed to estimate risk for recidivism. The original scale, the General Statistical Information on Recidivism Scale, was designed by Nuffield (1982). The SIR-R1 incorporates several individual demographic and criminal history variables, which are weighted according to their association with recidivism. Scores for these individual items are summed for a total score. Almost all of the SIR-R1 items are static in nature. Lower scores are indicative of higher risk for recidivism. Scores are grouped into five categories: *very good* (least likely to recidivate), *good*, *fair*, *poor*, and *very poor* (most likely to recidivate). The SIR-R1 is currently used only with non-Aboriginal male offenders under federal jurisdiction. The measure has demonstrated good reliability

(internal consistency) and predictive validity for general, violent, and sexual recidivism in a variety of samples (Hanson & Morton-Bourgon, 2004; Nafekh & Motiuk, 2002).

Static Risk

Another indication of static risk is the Level of Intervention Based on Static Factors rating (Motiuk, 1997; SOP 700-04). At intake a rating of high, medium, or low is assigned to each offender based on criminal history, offence severity, and, for male non-Aboriginal offenders, the SIR-R1. Considerable involvement with the criminal justice system, many sex offences, extremely severe offences, and, when applicable, a SIR-R1 score indicative of high risk would warrant a rating of *high*. In contrast, an offender would be rated as *low risk* if he had little involvement with the criminal justice system, very few sex offences, low offence severity, and, when applicable, a SIR-R1 score indicative of low risk. Given that the SIR-R1 is only administered to non-Aboriginal male offenders, it contributes to the level of intervention based on static factors only for these offenders. This variable is referred to as *static risk* throughout the remainder of the report.

Criminogenic Needs

Criminogenic need (i.e., dynamic risk) is also assessed at intake and at various points throughout an offender's sentence (Motiuk, 1997; SOP 700-04, paragraph 78). Seven domains are assessed: employment, marital/family, associates/social interaction, substance abuse, community functioning, personal/emotional orientation, and attitude. *Employment* refers to the value placed on work and the role of work in one's life. *Marital/family* concerns the value placed on being with family and the support one derives from them. *Associations/social interaction* involves the value placed on non-criminal associates and the opportunity for positive social interaction. *Substance abuse* refers to the value placed on living without reliance on alcohol and/or drugs. *Community functioning* concerns the value placed on having the knowledge and necessary skills for daily living. *Personal/emotional orientation* involves the value placed on being in control of one's life. Finally, *attitude* refers to the value placed on living in law-abiding ways.

Based on interviews and collateral information, each domain, with the exception of substance abuse and personal/emotional orientation, is rated on a four-point scale from *factor*

seen as an asset to community adjustment to considerable need for improvement. Substance abuse and personal/emotional orientation are rated on a 3-point scale from *no immediate need for improvement* to *considerable need for improvement*.

The Level of Intervention Based on Dynamic Factors is rated, taking into account the severity and number of problems in the seven criminogenic need domains as well as immediate needs (i.e., medical, mental health, suicide risk potential). The Level of Intervention Based on Dynamic Factors rating provides a measure of overall criminogenic need on a 3-point scale: low, medium, or high need. An offender with few dynamic factors identified but rated as *considerable need for improvement* and an offender with multiple dynamic factors identified, regardless of the degree of severity, would be rated as *high need*. In contrast, an offender with no identified dynamic factors (i.e., *asset to community adjustment* or *no immediate need for improvement*) and an offender with relatively few dynamic factors rated as *some need for improvement* would be rated as *low need*. This variable is referred to as *overall criminogenic need* throughout the remainder of the report.

Motivation for Intervention

Motivation for intervention (SOP 700-04) is assessed at intake and again at various points in an offender's sentence. This rating reflects the degree to which an offender recognizes that he or she has a problem, is willing to change, has the ability to change, and has demonstrated positive change in the past. An offender is rated a being high in motivation if he or she is self-motivated and will actively address problem areas. A rating of medium motivation is given for an offender who may not fully accept the overall assessment but will still participate in recommended programs or other interventions. Finally, an offender is rated as being low in motivation if he or she strongly rejects the need for change or is unwilling to participate in recommended programs or other interventions.

Procedure

Data on offenders who had participated in at least one program between April 2002 and March 2004 were gathered from the Correctional Service Canada's (CSC) Offender Management System (OMS). On average, offenders participated in 1.43 programs ($SD = 0.70$, $median = 1$) during the 2-year data collection period. Additional program participation information is presented in Table 2. The majority of offenders (67.4%) participated in only one program during the 2-year data collection period, whereas fewer offenders participated in more than one program. For 44.5% of offenders, the first program in the data collection period was also the first correctional program in their current sentence.

Table 2 - Program Participation

Number of programs	<i>N</i>	%
1	5,045	67.4
2	1,851	24.7
3	460	6.1
4	106	1.4
5	16	0.2
6	6	0.1

Note. $N = 7,484$.

The focus of the remainder of this report is on the first correctional program in which offenders participated during the data collection period. It is important to note that the first correctional program during the data collection period was not necessarily the first one an offender had ever undertaken. We decided to focus on the first program for two reasons. First, the majority of offenders participated in only one program during the data collection period. Second, by focusing exclusively on the first program rather than any program during the data collection period, we avoided confounding number of attempts with likelihood of non-completion. It is conceivable, for example, that an offender may be found to be less likely to complete a program if he were observed over six programs compared to one program (i.e., more programs equal more opportunities for non-completion). Throughout the remainder of this

report, reference to program participation concerns only the first correctional program in which an offender participated during the data collection period, unless otherwise stated.

Definitions of Completion and Non-Completion

Program status is entered into OMS for each offender indicating whether a program has been completed. In cases of non-completion, the status indicates general reasons for this outcome. In the current study, program status entries were organized into four categories: one group of completers and three different types of non-completers. The operational definitions of these groups are as follows. A program was categorized as *completed* if the status was *successful completion* ($n = 5,312$), *attended all sessions* ($n = 182$), or *unsuccessful completion* ($n = 1$). These entries indicate that all or most sessions were attended. *Successful completion* indicates that an offender was compliant and successful in the program, whereas *attended all sessions* and *unsuccessful completion* indicate that an offender completed the program but was unproductive or failed to fully meet the program requirements.

The second category was labeled *non-completion for administrative reasons*, which reflects non-completion that was generally beyond the direct control of the offender. This category incorporates the status entries of *transferred* ($n = 104$), *program cancelled* ($n = 181$), *released* ($n = 52$), *temporarily reassigned* ($n = 1$), and *Warrant Expiry Date (WED) reached* ($n = 40$). In all of these cases, participation was interrupted for reasons that were most often unrelated to the offender's behaviour in or out of the program.

The third category, *non-completion due to personal circumstances*, corresponds to an entry of *incomplete* ($n = 790$). An offender was assigned the status of incomplete if he was unable to complete the program because of his behaviour *outside* of the program or due to circumstances *unrelated* to the program. For example, an offender may no longer be able to attend a program because he was admitted to the hospital or to segregation for misconduct or for his own protection.

The final category was *dropout/expulsion*, which corresponds to *suspension* ($n = 821$). This category was assigned to offenders who withdrew or were expelled from a program. Expulsion would most typically be for unacceptable behaviour or performance within the program.

The data used in the analyses below were drawn from different points in an offender's sentence. The static variables, such as the SIR-R1 scale and risk ratings, were taken from data collected during the Offender Intake Assessment. Other variables, such as criminogenic need, motivation level, and program setting, were taken from the most recent data available at the beginning of the program. In all cases, the variables considered preceded the treatment outcome. For example, the data on criminogenic need used in the current study were measured and reported in OMS prior to the commencement of the program in question. Thus, the study design was predictive.

Analysis Strategy

To assess whether differences existed between completers, administrative non-completers, personal circumstance non-completers, and dropouts/expulsions, one-way ANOVAs and chi-square tests were performed in which each group was compared to each other group. Cohen's d was also computed to provide effect size estimates; that is, an indication of the strength of the relationship between variables. By convention, d of 0.20 or greater is considered a small effect size (Cohen, 1992). Hence, a decision rule was established in which d equal to or greater than 0.20 was considered indicative of a meaningful association. Pairwise comparisons (i.e., analyses in which only two groups are compared at one time) rather than omnibus comparisons (i.e., analyses in which more than two groups are compared at one time) were performed because they provide more specific, meaningful, and useful information for our purposes.

Given the large number of analyses, results were only reported if their corresponding ds were 0.20 or greater. Similarly sized effects are commonly found and considered meaningful in forensic psychology. Cohen's d is roughly twice the size of a correlation coefficient. In their meta-analysis, Gendreau, Little, and Goggin (1996) found that the average correlation with criminal recidivism for many predictors, such as age, criminal history, gender, and criminal companions, ranged from .10 to .18. Furthermore, the items of a validated risk assessment instrument for sexual offenders were individually correlated with sexual recidivism between .10 and .20 (Hanson, 1997). Hence, a correlation of .10 or greater (or d of 0.20 or greater) is often indicative of a meaningful association for researchers and clinicians working with offender populations (see Meyer et al., 2003, for a compilation of effect sizes found in a broader range of

research areas). As mentioned, given the large number of analyses, only the results of analyses yielding d of 0.20 or greater are presented in this report.

Although probability values (e.g., $p < .05$) are more commonly used as a threshold to determine whether an association is meaningful, in light of the large sample sizes involved in many of the analyses in the present study, traditional significance tests were not particularly informative. For example, in some analyses even extremely small effects (e.g., $d = .10$) reached statistical significance ($p < .05$). Nevertheless, significance tests (i.e., ANOVA and chi-square) were performed and are presented in this report for readers who may be interested in this information.

RESULTS

Program data are presented in Table 3. The first program in which offenders participated was most likely to have been a living skills program (46%), a moderate-intensity program (64%), and a program delivered in a medium-security institution (46%).

Table 3 - Program Type, Intensity, and Setting

	<i>N</i>	%
Program type		
Sex offender	685	9.2
Violent offender	348	4.6
Anger management	614	8.2
Substance abuse	1,296	17.3
Family violence	1,115	14.9
Living skills	3,426	45.8
Program intensity		
High	517	6.9
Moderate	4,796	64.1
Low	2,171	29.0
Program setting		
Multi-level security institution	216	2.9
Maximum-security institution	1,177	15.7
Medium-security institution	3,437	45.9
Minimum-security institution	823	11.0
Community	1,831	24.5

Three quarters of the offenders completed the program (73.4%), 5.1% failed to complete for administrative reasons, 10.6% did not complete due to personal circumstances, and 11.0% dropped out or were expelled.

Data on completion status by race are presented in Table 4. Due to missing data, the total sample size in Table 4 and subsequent tables does not equal 7,484 for all variables. To assess whether completion status differed by race, comparisons were performed first on the proportion of White vs. Aboriginal offenders in each group. Of the six analyses involving White and non-Aboriginal offenders, three revealed that treatment outcome did differ as a function of Aboriginal status (i.e., $d \geq .20$). Dropouts/expulsions were more likely to be Aboriginal than were completers ($\chi^2[1, N = 5,566] = 58.50, p < .001, d = .30$), administrative non-completers ($\chi^2[1, N = 1,095] = 9.38, p < .01, d = .20$), and personal circumstance non-completers ($\chi^2[1, N = 1,457] = 28.30, p < .001, d = .28$). Because Aboriginal men were more likely to dropout or be expelled than were White men, they were examined separately in the subsequent analyses. The next set of comparisons was focused on the proportion of White vs. non-White non-Aboriginal offenders in each completion status group. Non-White non-Aboriginal offenders did not differ from White offenders on any of the comparisons (i.e., all $d < .20$); therefore, White and non-White non-Aboriginal offenders were combined into one non-Aboriginal group in the subsequent analyses.

Table 4 - Program Completion Status by Race

Race	Completers (%)	Non-completers (%)		
		Admin	Personal	Dropout
White	72.7	71.8	73.8	65.7
Aboriginal	15.1	18.1	15.3	26.7
Non-White non-Aboriginal	12.2	10.1	10.9	7.6

Note: Admin = Non-completion of correctional program for administrative reasons. Personal = Non-completion of correctional program due to personal circumstances. Dropout = Non-completion of correctional program due to dropout/expulsion.

Non-Aboriginal Offenders

Of the 6,221 non-Aboriginal offenders, 74.7% completed a program, 5.0% failed to complete for administrative reasons, 10.7% did not complete due to personal circumstances, and 9.6% dropped out or were expelled. Age and risk data are presented in Table 5, criminogenic need in Table 6, and motivation for intervention in Table 7. To more closely examine patterns of attrition among non-Aboriginal men, a series of pairwise comparisons was performed for age, risk, need, and motivation. The results are reported below. As previously explained, only results for comparisons that yielded effect sizes of 0.20 or greater are reported.

Comparing Completers to Non-Completers

Completers versus administrative non-completers. Among non-Aboriginal men, completers were lower risk as measured by the SIR-R1, than were those who did not complete because of administrative reasons, $F(1, 4901) = 18.57, p < .001, d = 0.26$. Completers also had higher levels of motivation for intervention, $\chi^2(2, N = 4,265) = 34.48, p < .001, d = 0.22$. No other differences were found between completers and offenders who did not complete because of administrative reasons on any of the variables in Tables 5, 6, or 7; all effect sizes were less than 0.20.

Completers versus personal circumstance non-completers. Completers were older than were those who did not complete due to personal circumstances, $F(1, 5311) = 28.51, p < .001, d = 0.22$. Completers were also lower risk as measured by the SIR-R1, $F(1, 5256) = 140.81, p < .001, d = 0.49$. Completers had higher levels of motivation for intervention, $\chi^2(2, N = 4,612) = 45.84, p < .001, d = 0.26$. Otherwise, the groups did not differ from one another; all other effect sizes were less than 0.20.

Completers versus dropouts/expulsions. Compared to dropouts/expulsions, completers were older, $F(1, 5245) = 76.55, p < .001, d = 0.38$, and lower risk as measured by both the SIR-R1, $F(1, 5186) = 163.00, p < .001, d = 0.56$, and static risk level, $\chi^2(2, N = 4,537) = 21.13, p < .001, d = 0.21$. Completers also had lower overall criminogenic need than the dropouts/expulsions, $\chi^2(2, N = 4,537) = 60.08, p < .001, d = 0.35$. Completers had higher levels of motivation for intervention than the dropouts/expulsions, $\chi^2(2, N = 4,542) = 118.79, p < .001, d = 0.48$.

Comparisons of Subgroups of Non-Completers

Administrative non-completers versus personal circumstance non-completers. Compared to offenders who did not complete due to personal circumstances, those who did not complete because of administrative reasons were lower risk as measured by the SIR-R1, $F(1, 959) = 14.97, p < .001, d = 0.27$. All other effect sizes were less than 0.20.

Administrative non-completers versus dropouts/expulsions. Compared to dropouts/expulsions, administrative non-completers were older, $F(1, 906) = 12.89, p < .001, d = 0.25$, and lower risk as measured by both the SIR-R1, $F(1, 889) = 23.61, p < .001, d = 0.34$, and the static risk rating, $\chi^2(2, N = 862) = 11.86, p < .01, d = 0.24$. Administrative non-completers had lower overall criminogenic need than did the dropouts/expulsions, $\chi^2(2, N = 862) = 23.67, p < .001, d = 0.35$. Administrative non-completers also had higher levels of motivation for intervention than did dropouts/expulsions, $\chi^2(2, N = 863) = 23.92, p < .001, d = 0.25$.

Personal circumstance non-completers versus dropouts/expulsions. Personal circumstance non-completers were more likely than were dropouts/expulsions to have lower overall criminogenic need, $\chi^2(2, N = 1,209) = 13.53, p < .01, d = 0.21$. Turning to motivation for intervention, personal circumstance non-completers had higher levels of motivation for intervention than did dropouts/expulsions, $\chi^2(2, N = 1,210) = 16.22, p < .001, d = 0.21$. All other effect sizes were less than 0.20.

Table 5 - Risk by Attrition Type Among Non-Aboriginal Male Offenders

	Completers	Non-completers		
		Admin	Personal	Dropout
Age	a	ab	bc	c
<i>Mean (M)</i>	36.03	34.53	33.64	31.90
<i>Standard deviation (SD)</i>	(10.98)	(10.99)	(9.58)	(10.13)
SIR-R1	a	b	c	c
<i>M</i>	-0.13	-2.76	-5.13	-5.79
<i>SD</i>	(10.33)	(9.58)	(8.48)	(8.43)
Static risk	a	a	ab	b
Low	11.3%	9.6%	8.4%	6.5%
Moderate	44.1%	49.1%	47.3%	40.1%
High	44.6%	41.3%	44.2%	53.4%

Note: Admin = Non-completion of correctional program for administrative reasons. Personal = Non-completion of correctional program due to personal circumstances. Dropout = Non-completion of correctional program due to dropout/expulsion. When groups do not share at least one letter in common with another group in that row on a particular variable, it indicates that the comparison yielded an effect size of 0.20 or greater.

Table 6 - Criminogenic Need by Attrition Type Among Non-Aboriginal Male Offenders

Need	Completers (%)	Non-completers (%)		
		Admin	Personal	Dropout
	a	a	a	b
Low	6.5	5.5	3.0	1.6
Moderate	36.7	36.2	33.8	25.5
High	56.8	58.4	63.3	72.9

Note: Admin = Non-completion of correctional program for administrative reasons. Personal = Non-completion of correctional program due to personal circumstances. Dropout = Non-completion of correctional program due to dropout/expulsion. When groups do not share at least one letter in common with another group in that row on a particular variable, it indicates that the comparison yielded an effect size of 0.20 or greater.

Table 7 - Motivation by Attrition Type Among Non-Aboriginal Male Offenders

Motivation	Completers (%)	Non-completers (%)		
		Admin	Personal	Dropout
	a	b	b	c
Low	13.4	25.6	23.3	28.9
Moderate	64.4	52.9	59.8	61.6
High	22.2	21.5	16.9	9.5

Note: Admin = Non-completion of correctional program for administrative reasons. Personal = Non-completion of correctional program due to personal circumstances. Dropout = Non-completion of correctional program due to dropout/expulsion. When groups do not share at least one letter in common with another group in that row on a particular variable, it indicates that the comparison yielded an effect size of 0.20 or greater.

Aboriginal Offenders

Of the 1,236 Aboriginal offenders, 67.1% completed a program, 5.5% failed to complete for administrative reasons, 9.7% did not complete due to personal circumstances, and 17.7% dropped out or were expelled. A parallel set of analyses to those conducted above was performed with only the Aboriginal male offenders. Each group was compared to each other group on age and risk (Table 8), overall criminogenic need (Table 9), and motivation for intervention (Table 10).

Comparing Completers to Non-Completers

Completers versus administrative non-completers. Among Aboriginal men, completers had higher overall criminogenic need than administrative non-completers, $\chi^2(2, N = 835) = 2.52$, $p > .05$, $d = 0.20$. The two groups did not differ on any of the other variables considered in Tables 8, 9, and 10; all effect sizes were less than 0.20.

Completers versus personal circumstance non-completers. Completers did not differ from those who did not complete due to personal circumstances on any of the variables considered; all effect sizes were below 0.20.

Completers versus dropouts/expulsions. Compared to dropouts/expulsions, completers were older, $F(1, 1046) = 25.31$, $p < .001$, $d = 0.38$, and had lower overall criminogenic need, $\chi^2(2, N = 983) = 12.64$, $p < .01$, $d = 0.27$. Completers also had higher levels of motivation for intervention than did the dropouts/expulsions, $\chi^2(2, N = 988) = 22.59$, $p < .001$, $d = 0.34$. Only one effect size was less than 0.20.

Comparisons of Subgroups of Non-Completers

Administrative non-completers versus personal circumstance non-completers. Administrative non-completers did not differ from those who did not complete due to personal circumstances; all effect sizes were below 0.20.

Administrative non-completers versus dropouts/expulsions. Administrative non-completers were older, $F(1, 285) = 2.205$, $p > .05$, $d = 0.21$, and lower in static risk, $\chi^2(2, N = 274) = 4.43$, $p > .05$, $d = 0.22$, than were dropouts/expulsions. Administrative non-completers were also lower in overall criminogenic need than were dropouts/expulsions, $\chi^2(2, N = 274) = 13.49$, $p < .01$, $d = 0.54$. Administrative non-completers had higher levels of motivation for intervention than did the dropouts/expulsions, $\chi^2(2, N = 275) = 17.02$, $p < .001$, $d = 0.47$.

Personal circumstance non-completers versus dropouts/expulsions. Personal circumstance non-completers were older than were dropouts/expulsions, $F(1, 337) = 3.46$, $p < .10$, $d = 0.21$. Compared to dropouts/expulsions, personal circumstance non-completers had lower static risk, $\chi^2(2, N = 329) = 4.63$, $p < .10$, $d = 0.22$, and lower overall criminogenic need, $\chi^2(2, N = 329) = 12.28$, $p < .01$, $d = 0.37$. The personal circumstance non-completers had higher levels of motivation for intervention than did the dropouts/expulsions, $\chi^2(2, N = 330) = 11.21$, $p < .01$, $d = 0.24$.

Table 8 - Risk by Attrition Type Among Aboriginal Male Offenders

	Completers	Non-completers		
		Admin	Personal	Dropout
Age	a	a	a	b
<i>M</i>	33.17	31.41	31.43	29.66
<i>SD</i>	(9.36)	(9.25)	(8.49)	(8.31)
Static risk	ab	a	a	b
Low	5.1%	7.9%	2.5%	2.4%
Moderate	31.6%	27.0%	37.3%	26.1%
High	63.3%	65.1%	60.2%	71.6%

Note: Admin = Non-completion of correctional program for administrative reasons. Personal = Non-completion of correctional program due to personal circumstances. Dropout = Non-completion of correctional program due to dropout/expulsion. When groups do not share at least one letter in common with another group in that row on a particular variable, it indicates that the comparison yielded an effect size of 0.20 or greater.

Table 9 - Criminogenic Need by Attrition Type Among Aboriginal Male Offenders

Need	Completers (%)	Non-completers (%)		
		Admin	Personal	Dropout
	a	b	ab	c
Low	2.3	3.2	0.8	0.9
Moderate	26.3	34.9	32.2	15.6
High	71.4	61.9	66.9	83.4

Note: Admin = Non-completion of correctional program for administrative reasons. Personal = Non-completion of correctional program due to personal circumstances. Dropout = Non-completion of correctional program due to dropout/expulsion. When groups do not share at least one letter in common with another group in that row on a particular variable, it indicates that the comparison yielded an effect size of 0.20 or greater.

Table 10 - Motivation by Attrition Type by Among Aboriginal Male Offenders

Motivation	Completers (%)	Non-completers (%)		
		Admin	Personal	Dropout
	a	a	a	b
Low	17.1	15.9	22.0	24.1
Moderate	63.7	60.3	60.2	69.8
High	19.2	23.8	17.8	6.1

Note: Admin = Non-completion of correctional program for administrative reasons. Personal = Non-completion of correctional program due to personal circumstances. Dropout = Non-completion of correctional program due to dropout/expulsion. When groups do not share at least one letter in common with another group in that row on a particular variable, it indicates that the comparison yielded an effect size of 0.20 or greater.

DISCUSSION

The primary purpose of the present research was to investigate the extent to which heterogeneity exists among offenders who fail to complete correctional programs. Our results suggest that there are meaningful differences on risk, need, and motivation between those who complete correctional programs and different types of non-completers. More specifically, dropouts/expulsions were generally higher risk, higher need, and had lower levels of motivation for intervention than offenders who completed a program. The administrative and personal circumstance non-completers, however, generally appeared to occupy a middle ground between the completers and dropouts/expulsions. This pattern of results suggests that there is heterogeneity among offenders who fail to complete programs and that those non-completers who dropout or are expelled from a program may be most distinct from completers in terms of risk, need, and motivation.

This pattern was generally found for both non-Aboriginal and Aboriginal male offenders. Only small or larger effect sizes (Cohen's $d \geq 0.20$) were considered indicative of a meaningful difference. Among the non-Aboriginal men, compared to completers, dropouts/expulsions a) were younger, b) were higher risk on the SIR-R1, c) had higher levels of static risk, d) had greater criminogenic need, and e) had lower levels of motivation for intervention. The same results were found when the dropouts/expulsions were compared to administrative non-completers. Fewer differences were observed between completers and administrative non-completers and between dropouts/expulsions and personal circumstance non-completers. The largest effect sizes were generally found in the comparisons between completers and dropouts/expulsions.

Turning to the Aboriginal men, compared to completers, dropouts/expulsions a) were younger, b) had greater criminogenic need, and c) had lower levels of motivation for intervention. Similar differences were found when the dropouts/expulsions were compared to administrative and personal circumstance non-completers. Far fewer differences, however, were found when the administrative and personal circumstance non-completers were compared to the completers. Thus, for both the non-Aboriginal and Aboriginal offenders, dropouts/expulsions were most distinct from completers in terms of risk, need, and motivation.

These results have implications for both practice and research. In terms of practice, we

found that the offenders who faced the greatest reintegration challenge (i.e., high-risk and high-need) were also those most likely to dropout or be expelled from treatment. This makes it difficult to adhere to the risk principle, in which high-intensity treatment is directed to offenders higher in risk and need (Andrews & Bonta, 2003). The offenders who are dropping out or being expelled from programs are those who are higher in risk and need and, thus, require the most treatment.

This apparent impasse may be remedied by attending to the responsivity principle, which states that the style of intervention should be tailored to an offender's learning style, motivation, and cognitive functioning (Andrews & Bonta, 2003). Perhaps delivery of preparatory programs to these high-risk/high-need offenders to address responsivity issues, such as low motivation, may reduce the likelihood of dropout/expulsion, and, ultimately, reduce the likelihood of recidivism. Preliminary evidence suggests that such programs, delivered prior to commencement of the program proper, can be successful in increasing motivation for treatment and in reducing recidivism (Malcolm, Marshall, & Marshall, 2004; Moulden, Marshall, & Marshall, 2004). Although directing preparatory efforts to high-risk/need and low-motivation offenders may reduce dropout/expulsion rates, reducing the rates of other types of attrition may be best addressed through administrative channels (c.f., Wormith & Olver, 2002).

With regard to research, the results of this study suggest that more specific definitions should be used in program attrition research. Researchers attempting to identify predictors of non-completion, for example, would likely be more successful if they considered dropouts/expulsions separately rather than collapsing across all types of attrition. In addition, our results suggest that dropout/expulsion may pose the greatest threat to the validity of investigations into the effectiveness of treatment (Rice & Harris, 2003). In general, attending to the heterogeneity of non-completers may provide greater clarity in research, which may lead to more effective strategies for retaining higher risk offenders in programs, and, ultimately, to greater reductions in recidivism.

Some caution is warranted in interpreting the results of the current study. Although we were interested in different types of attrition, this endeavor was somewhat limited by the program status categories used in OMS, on which we relied. For example, we were unable to separate dropouts from expulsions because both were indicated with the status code "suspended" in OMS. Wormith and Olver (2002) did, however, find that dropouts and expulsions were similar in terms of risk, motivation, and recidivism. Thus, combining these two groups may be

acceptable. For the remaining non-completers, however, finer examination of heterogeneity may soon be possible. More detailed information on reasons for non-completion of treatment is now being gathered in the new Offender Management System Renewal Program Performance Measure (PPM) application, which was released in November 2005 (P. Chitty, personal communication, November 28, 2005). For example, in the database analyzed in the current report, failure to complete a program because of medical reasons or admittance to segregation were both coded as *incomplete* (non-completion due to personal circumstances). In the new PPM application, more specific reasons for non-completion can be entered and, thus, examined separately.

A second concern is that the large number of statistical comparisons performed makes it likely that some of the associations found between variables that were judged to be meaningful (i.e., effect size ≥ 0.20) may have occurred by chance, when in fact the true effect size may be lower (Cohen, 2003; Howell, 1997). The liberal approach, however, is arguably justified because the purpose of the current paper was more exploratory than confirmatory in nature given the virtual absence of investigations into the heterogeneity of treatment non-completers in the published literature (Cohen, 2003). A final concern is that women offenders were not included in this research. Data from too few women offenders were available to permit investigation with this group.

In terms of future research, the development of measures with which to estimate dropout/expulsion risk would be useful. Measures of this sort could be used in correctional planning to identify offenders most at risk of dropout/expulsion and to target them with preparatory programs. These efforts could prove effective at conserving scarce resources and reducing recidivism. In addition, researchers investigating the effectiveness of correctional programs could use such measures to identify and control for would-be dropouts/expulsions in comparison groups, thereby increasing the internal validity of their studies. We have developed a screening version of such a measure (Nunes & Cortoni, 2006).

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