



Home Office

Pathfinder programmes in the Probation Service: a retrospective analysis

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Foreword

Working directly with offenders in order to reduce their levels of reoffending is part of the work of the Probation Service. The advent of Pathfinder Programmes represents a new approach to this task of reducing crime. The current report details an empirical evaluation, based on retrospective data, of the impact of the first wave of Pathfinder Programmes in the Probation Service. As the type of work encompassed by such programmes – structured interventions directed at dynamic criminogenic needs in order to impact directly on factors associated with offending – is set to become a part of the work of probation staff it follows that such evaluations are critical in order to inform future work.

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Summary

The findings are presented of an evaluation, based on a retrospective data analysis, of the aggregated effects on reconviction of several offending behaviour programmes. The data analysis used two designs: the first looked at the differences in reconviction rates of three groups, offenders who were allocated to and completed a programme, offenders allocated to a programme but who failed to complete, and a comparison group of offenders not allocated to a programme; the second design combined the allocated offenders into one group, with the same comparison group. The process of data cleaning and matching resulted in a substantial attrition rate from the original figures, but nevertheless a large sample of offenders was able to be entered into the analysis. The main finding from the three-group analyses indicated that, controlling for salient population factors, there was a lower rate of reconviction in the completer group as compared to non-completers and comparison groups. However, this effect was reversed when the two-group design was used. A subsidiary analysis looking at the effect of classifying correctly by risk band those offenders completing programmes suggested that correct allocation has the optimum effect in terms of impact upon reconviction. A range of explanations for the findings is presented, highlighting the need to understand the role of non-completion of a programme in understanding fully the impact of programmes on reconviction.

1. Introduction

The Crime Reduction Programme and Pathfinder programmes

The Home Office's Crime Reduction Programme (CRP) was established to develop and implement a national evidence-based crime reduction strategy. The CRP is based on a review of research evidence, with specific emphasis placed on the findings of large-scale systematic reviews of the research literature on the outcomes of work with offenders (Home Office, 1998). One area highlighted by the CRP as being of importance in reducing crime was the need to work effectively with offenders, an emphasis that led to the development of Pathfinder programmes for offenders serving Probation Orders. The first set of programmes were designated as Pathfinders in 1998 and implemented in 2000, with the intention that further programmes would be developed over the following years.

The evaluation of the Pathfinder programmes was emphasised from the outset, with a long-term evaluation process put into place for each programme. The Prison Service has reported a number of outcome studies for both cognitive skills programmes (Cann, Falshaw, Nugent, & Friendship, 2003; Friendship, Blud, Erikson, & Travers, 2002; Friendship, Blud, Erikson, Travers, & Thornton, 2003) and sex offender treatment programmes (Beech, Erikson, Friendship, & Ditchfield, 2001; Friendship, Mann, & Beech, 2003) with generally positive findings, in terms of a treatment effect, from the mainly prison-based studies. However, two studies did not find a treatment effect when dropouts from treatment were included in the analyses (Cann *et al.*, 2003; Falshaw *et al.*, 2003). For the offending behaviour Pathfinder programmes in the Probation Service the evaluations were carried out by research teams at the Universities of Leicester and Liverpool. The evaluation strategy undertaken for each Pathfinder programme involved various strands: (1) A process evaluation to examine the effect of implementation and delivery on the success of the programme; (2) An outcome evaluation to examine the effect of the Pathfinder programmes on reducing re-offending; (3) A cost-effectiveness analysis, both in general terms and comparatively across the programmes. The first strand of the evaluation has been completed (Hollin, McGuire, Palmer, Bilby, Hatcher, & Holmes, 2002), the current report presents an overview of the results from the first of the outcome evaluations. This study, which we label a "Retrospective Study", gathered data on offenders on probation who were identified as completing a programme between 2000 and 2001 and the data were gathered in retrospect, that is after the offenders had completed the programme.

Pathfinder programmes in the current study

In this report, the emphasis lies in analysis of the aggregated data across programmes, although most offenders completed one of the three cognitive skills programmes. For information, the programmes included in the analyses are outlined below.

Think First

Think First was developed as a general offending behaviour programme for groupwork with offenders (McGuire, 2000). It is based on cognitive-behavioural principles and addresses offenders' social cognitive deficits, with an explicit focus on how these deficits lead to offending. Think First consists of 22 2-hour programme sessions along with pre- and post-programme sessions to increase motivation and conduct relapse prevention work. In the study reported here 1,262 offenders had been allocated to this programme and 480 (38.03%) had completed.

Reasoning and Rehabilitation (R & R)

The Reasoning and Rehabilitation (R & R) Programme is a general offending behaviour programme that was originally developed in Canada (Ross, Fabiano, & Ewles, 1988) and later revised for use in the English and Welsh Probation Service (Porporino & Fabiano, 2000). Based on cognitive-behavioural theory, R & R addresses the skill deficits commonly associated with offending, and aims to replace them with new cognitive skills to help prevent offenders from reoffending. The R & R

Programme (2000 versions) is delivered in 38 2-hour sessions. In the study reported here 250 offenders had been allocated to this programme and 53 (21.20%) had completed.

Enhanced Thinking Skills (ETS)

The Enhanced Thinking Skills (ETS) Programme was developed by the English and Welsh Prison Service (Clark, 2000) as a shorter alternative to the R & R programme. As such it targets the same behaviours as R & R, and also uses a cognitive-behavioural framework. ETS is run over 20 2-hour sessions, with follow-up work for offenders to complete between sessions. In the study reported here 629 offenders had been allocated to this programme and 182 (28.93%) had completed.

Priestley One-to-One

The Priestley One-to-One Programme is a general offending behaviour programme designed for one-to-one delivery with offenders who are considered unsuitable for groupwork or no groupwork provision is available (Priestley, 2000). Offenders' needs are identified at the beginning of the programme before moving onto a series of exercises designed to teach and improve social skills, problem solving, self-management, empathy, goal setting, and attitudes and values about crime. The Priestley One-to-One Programme consists of 20 weekly 1-hour sessions. In the study reported here 27 offenders had been allocated to this programme and 19 (70.37%) had completed.

Addressing Substance-Related Offending (ASRO)

ASRO is an offending behaviour programme, consisting of 20 two-hour sessions, developed for offenders who abuse substances (McMurrin & Priestley, 1999). The programme is based on cognitive-behavioural principles and designed for groupwork with offenders. As substance abuse can be a crime in itself (e.g., possession of drugs) or be related to the commission of other offences (e.g., stealing to buy drugs), the programme has a number of aims. These aims include enhancing motivation to change, teaching skills to increase self-control and decrease the likelihood of relapse, and encouraging offenders to change their lifestyles to reduce their risk of relapse into substance use and further offending. In the study reported here 62 offenders had been allocated to this programme and 14 (22.58%) had completed.

Inspection of the distribution of numbers across programmes shows that the majority of the Experimental Group (96.01%) have been engaged in a general offending programme based on the cognitive skills model.

2. Methodology

Study design

The study used a quasi-experimental design in gathering data on two groups of offenders. The first group were labelled the Experimental Group, which was composed of all the offenders allocated to one of the above programmes. The second group, labelled the Comparison Group, was formed from offenders sentenced during 2001 to a Probation Order without a requirement to attend an offending behaviour programme. For purposes of analysis, the Comparison Group were matched with the Experimental Group on several key variables. With regard to matching, there are several possible strategies that may be used. One widely used approach is to match treatment and comparison samples in terms of population characteristics, on selected key variables (in this case gender, age, OGRS2 score, and offence history). An alternative is to use one-to-one matching, in which for every member of the treatment sample, a matched sub-set is identified within the comparisons and a single match drawn randomly. The first of these strategies, population-matching, was chosen for several reasons. First, given the significant attrition of data (as documented below) it was feared that further losses might accrue due to difficulties in obtaining suitable matches. Second, population-based matching is a standard and widely accepted strategy in the published literature on programme impact evaluation (Rossi, Freeman, & Lipsey, 1999). Third, multivariate analyses can be used to take account of sample differences statistically rather than by study-design means. Finally, one-to-one matching is a time-consuming procedure and given the scale of this study it was judged unrealistic to conduct such a process.

The central research question to be addressed here is whether there are lower rates of reconviction for those offenders allocated to a programme, the Experimental Group, as compared to the Comparison Group. However, an immediate issue which arises here concerns the composition of the Experimental Group. In practice, as documented in previous studies (e.g., Cann *et al.*, 2003), the Experimental Group typically divides into two subgroups: (1) those offenders who were allocated to treatment but did not complete a programme, either because they did not start the programme or because they dropped out of the programme, we call these offenders "Non-completers"; (2) those offenders who completed the programme, which we term "Completers".

The pressing question of concern is whether Pathfinder programmes impact on rates of offending. There are two approaches to try to answer the question of the effectiveness of an intervention. The first approach is to compare directly the reconviction rates of *all* those offenders allocated to treatment (here called the Experimental Group) with those who did not take part in the treatment (here called the Comparison Group). In a Randomised Control Trial (RCT) – which this study is not – this approach would be called "Intention to Treat" (ITT) analysis. With a RCT an ITT analysis is based on the premise that those randomly allocated to Treatment or Placebo conditions have previously been assessed as being in need of the treatment (Hollis & Campbell, 1999; Sherman, 2003). By comparison, the present design has the significant limitations that there was no randomisation to condition, nor was there any stated intention to treat the Comparison Group: therefore we cannot be sure that the Experimental and Comparison Groups would have been similarly judged as appropriate for treatment. Further, in terms of research practice, a large-scale RCT employing ITT analysis would typically be used with a treatment of established efficacy. Using the Medical Research Council framework, the current study is analogous to an Exploratory Trial "In which evidence is collected on, for example, the appropriate control group, sample size calculations, outcome measures, and expected recruitment rates" (Everitt & Wessely, 2003). In offender treatment, Lipsey (1999) has suggested that there is a requirement to demonstrate whether, in fact, offender treatment programmes actually "work" in practice. One way to demonstrate that a treatment is effective in the sense that it delivers the outcome that it claims (as opposed to being implemented effectively when it is made available) is to see what happens when treatment is completed. Thus, the second approach is to analyse the effects of "Treatment Received" (TR) by attempting statistically to control for the factors that may be associated with completion and non-completion of the intervention in comparing outcomes for a group judged suitable for treatment and with a matched comparison group. In other words, do offenders on probation who *complete* an offending behaviour programme differ in their rates of reconviction from offenders who do not complete or take part in a programme?

Thus, there are two approaches that can be taken in the current analysis: first, to approach the data in the sense of an exploratory trial or demonstration study so that, given the centrality of “dosage” in determining programme effectiveness, the outcome evaluation would necessarily focus on those offenders who complete a programme. The second approach is to disregard programme completion and simply compare all those allocated to treatment (the Experimental Group) with the Comparison Group. We judge that the design of this study favours the former approach, but we will undertake both approaches for the sake of completeness.

Offender samples

Experimental Group

The Experimental Group was composed of offenders sentenced to a Probation Order, during 2000 and 2001, with a requirement to attend one of the five offending behaviour programmes noted above (Think First, R & R, ETS, Priestley One-to-One, ASRO). The initial data were provided by 26 Probation Areas in England and Wales but after the data were cleaned only 16 areas were included in the final analysis. All offenders in the Experimental Group were sentenced between January 2000 and December 2001.

Comparison Group

A Comparison Group was assembled by taking a random group of offenders sentenced during 2001 to a Probation Order without a requirement to attend an offending behaviour programme. These offenders were drawn from the Probation Index database and came from eight Probation Areas.

Data collection

Experimental Group

Probation Areas were asked to provide the following information relating to offenders’ participating in the programmes: name, gender, date of birth, CRN/PNC number, index offence, date of sentence, order type, order length, programme allocated, programme status, start date of programme, last session attended, date of last session attended, and attendance record. However, across areas consistent information was available only for name, gender, index offence, date of sentence, and allocated programme.

Comparison Group

The data drawn from the Probation Index provided the following information on offenders in this group: name, gender, date of birth, index offence, date of sentence, and order type.

Offenders’ Index

Information about the offenders’ reconvictions was obtained from the Offenders’ Index: this included data relating to offence type, date of reconviction, and OGRS2 scores.

Data cleaning and database matching

As data were drawn from three different sources – Probation Area records, the Offenders’ Index, and the Probation Index – it was crucial that the database to be used for the analysis was as complete and error-free as possible. Given the nature of the research design, in which the statistical control of key variables is critically important, the concern was to produce as “clean” a dataset as possible with a minimal number of missing, incomplete, or conflicting fields. A step-by-step process was followed to cross-check the reliability of the information from the three sources, allowing cases to be added and removed as the process progressed. An offender was omitted from the sample when no satisfactory match could be made on key information across the databases, when there were large amounts of missing data, when key identifying variables (e.g., date of birth) were incorrect and could not be corrected or verified, when databases contained “duplicates” (e.g., the same individual had several different offence codes and appeared in databases as several different offenders), and when offenders had completed programmes outside the time frame of this study. (Where there was a disagreement between OI information and Probation Area information, for consistency the OI

information was retained because, as with most variables, only OI information was available for the comparison group.) Thus, at this stage in the analysis a string of decisions were made to allow the cleanest full dataset that could be achieved to emerge. This process resulted in considerable loss of cases in both the Experimental Group (loss of about 5,500 cases out of about 8,000 records) and Comparison Group (loss of about 3,000 cases out of about 5,800 records). The largest single cause of lost cases was missing, incomplete, and conflicting information across the databases (almost 4,500 cases), followed by duplication (over 2,000 cases). This stringent cleaning produced a full dataset on over 4,800 offenders, making this the single largest study of programme effectiveness in probation yet reported.

A comparison of those offenders lost from the study with those retained in the Experimental Group suggested no fundamental differences other than that those retained were more likely to have a previous reconviction. A comparison of those retained with the National Probation statistics suggested a similar distribution of offence types, with perhaps more acquisitive offenders and fewer violent offenders, and an age distribution with more older and fewer younger offenders. These differences most probably reflect the effects of the selection criteria for offending behaviour programmes.

Strategy for analysis

The first step in the analysis is a straightforward description of the characteristics of the various groups. The second step moves beyond description to begin to consider the effect of programmes on reconviction. Using contingency tables, the reconviction data were collated, again by group, for inspection and for preliminary univariate analysis. Following the preliminary analysis, the third step was to use multivariate analysis, allowing statistical control over critical variables, to refine the univariate analyses using more complex statistical techniques. The procedure was repeated for the two designs – Completers versus Non-completers versus Comparison Group; then Experimental Group versus Comparison Group– to contrast the two approaches.

The basis of the multivariate analysis is to control key variables with known associations with the outcome (reconviction in this study), thereby to determine if another variable (participating in treatment) is related to reconviction. The first stage of the multivariate analysis, in this case sequential logistic regression, produces a model that shows whether key variables (such as age and OGRS2 score) predict the outcome (i.e., reconviction). In the second stage of the analysis, a new variable (e.g., level of treatment received) is added to the model formed by the original variables to produce a second model: “The difference between the two models is evaluated to determine if [the additional variables] significantly add to the prediction afforded by [the original variables]” (Tabachnick & Fidell, 2001, p. 533). If the additional variables improve significantly the accuracy of the model then they can be said to have an impact on the outcome over and above the original variables. Thus, first controlling statistically for key variables across the different groups then allows the effects, if any, of treatment on reconviction to emerge. With this approach it is important to control as many key variables as possible. In the current data set there were four variables that were identified as important for control purposes in the statistical analyses.

Control variables

First, *offender age* is important both from a broad criminological perspective, in that patterns of offending are related to age (Farrington, 2002), and also because it is clear that age is significantly correlated with the type of criminogenic risk factors addressed in the Pathfinder programmes (Hollin & Palmer, 2003; Hollin, Palmer, & Clark, 2003). Second, given the importance of *risk of reoffending* and the likelihood that very high risk offenders are more resistant to treatment (Robinson, 1995), the OGRS2 scores are of particular interest in this study. The Offender Group Reconviction Scale (OGRS) uses a range of variables to produce an estimate of risk of reconviction (Copas & Marshall, 1998; Taylor, 1999). Third, although heavily weighted towards males, there were some females in the sample and, given the differences between the criminal activities of men and women (Moffitt, Caspi, Rutter, & Silva, 2001), *gender* was included in the list of control variables. Finally, given the likelihood that type of offence is related to reconviction, *offence type* was also included in the list of control variables. Given that the time period between date of sentence and the end of the study period will vary from offender to offender, “*time at risk*” was also controlled in the analyses.

3. Findings

Descriptive statistics

The basic descriptive statistics for the Experimental and Comparison Groups are shown in Table 3.1. In all tables, where information regarding Index Offence is presented, the offences have been categorised according to OGRS2 categories.

Table 3.1: Experimental and Comparison Groups

	Experimental Group (N = 2230)	Comparison Group (N = 2645)
Male ^a	2016 (90.4)	2156 (81.5)
Female ^a	214 (9.6)	489 (18.5)
Age (years)	26.51 (7.8)	29.65 (9.5)
OGRS2	63.17 (21.7)	51.23 (27.5)
No. previous convictions	8.33 (8.8)	7.06 (8.1)
<i>Index offence</i>		
Burglary ^a	216 (9.7)	210 (7.9)
Criminal Damage ^a	93 (4.2)	143 (5.4)
Fraud and Forgery ^a	145 (6.5)	110 (4.2)
Motor ^a	65(2.9)	20 (0.8)
Other ^a	852 (38.2)	1030 (38.9)
Sexual ^a	2 (0.1)	58 (2.2)
Theft and Handling ^a	659 (29.6)	807 (30.5)
Violence ^a	198 (8.9)	267 (10.1)
<i>Time at Risk^b</i>	564.5 (128.29)	808.76 (194.93)

^a Categorical variables where the number in parentheses is a percentage; in other cases the figure is a mean with standard deviation in parentheses.

^b Time at risk is measured in days from the date of sentence to the end point of the study.

Comparison of the two groups revealed significant differences in age, $t(4873) = 12.40, p < .001$, OGRS2 scores, $t(4873) = 16.61, p < .001$, number of previous convictions, $t(4873) = 5.22, p < .001$, and time at risk, $t(4873) = 50.64, p < .001$. There was a significant difference in the distribution of males and females across the two condition, $\chi^2(1) = 77.51, p < .001$.

Table 3.2 presents a description of the data when the Experimental Group is divided into Completer and Non-completer Groups. (The Comparison Group remains unchanged, of course, but is shown for ease of reference.) As can be seen from Table 3.2, from the 2230 offenders allocated to programmes there were 748 completers, which translates to a completion rate of 33.54 per cent.

Table 3.2: Completer, Non-completer, and Comparison Groups

	<u>Completers</u> (N= 748)	<u>Non-completers</u> (N= 1482)	<u>Comparison Group</u> (N = 2645)
Male ^a	680 (90.91)	1336 (90.15)	2156 (81.5)
Female ^a	68 (9.09)	146 (9.85)	489 (18.5)
Age	27.59 (8.6)	25.97 (7.3)	29.65 (9.5)
OGRS2	57.71 (22.2)	65.93 (20.9)	51.23 (27.5)
No. PreCons	7.77 (8.8)	8.61 (8.9)	7.06 (8.1)
<i>Index offence</i>			
Burglary ^a	65 (8.7)	151 (10.2)	210 (7.9)
Criminal damage ^a	34 (4.5)	59 (4.0)	143 (5.4)
Fraud and forgery ^a	51 (6.8)	94 (6.3)	110 (4.2)
Motor ^a	10 (1.3)	55 (3.7)	21(0.8)
Other ^a	318 (42.5)	534 (36.0)	1030 (38.9)
Sexual ^a	0 (0)	2 (0.1)	58 (2.2)
Theft and handling ^a	187 (25.0)	472 (31.8)	807 (30.5)
Violence ^a	83 (11.1)	115 (7.8)	267 (10.1)
<i>Time at risk^b</i>	577.73 (133.16)	557.84 (125.27)	808.76 (194.93)

^a Categorical variables where the number in parentheses is a percentage; in other cases the figure is a mean with standard deviation in parentheses.

^b Time at risk is measured in days for each offender from the date of sentence to the end point of the study.

A one-way analysis of variance (ANOVA) revealed a significant effect for age across the three groups, $F(2, 4874) = 85.70, p < .001$: post hoc Scheffe tests showed all pairwise comparisons were significant. A similar one-way ANOVA for OGRS2 scores revealed an identical pattern as for age in terms of both main effect, $F(2, 4874) = 166.56, p < .001$, and all pairwise comparisons; with the same pattern repeated for time at risk, $F(2, 4874) = 12887.33, p < .001$. For number of previous convictions, the ANOVA gave a significant main effect, $F(2, 4874) = 16.12, p < .001$; however, only the pairwise comparison between Non-completers and Comparison Groups reached significance. There was a significant difference in the distribution of males and females across the three conditions, $\chi^2(2) = 77.74, p < .001$.

Table 3.3 gives a description of the data according to Reconviction status across Experimental and Comparison Groups, and Table 3.4 shows the same information with the Experimental Group broken down into Completer and Non-completer Groups. These are the data to be entered into the multivariate analysis.

Table 3.3: Reconviction in Experimental and Comparison Groups

	Experimental Group (N = 2230)		Comparison Group (N= 2645)	
	Reconvicted (n = 1558)	Not reconvicted (n = 672)	Reconvicted (n = 1532)	Not reconvicted (n = 1113)
Male ^a	1408 (69.8)	608 (30.2)	1289 (59.8)	867 (40.2)
Female ^a	150 (70.1)	64 (29.9)	243 (49.7)	246 (50.3)
Age	25.78 (7.29)	28.22 (8.64)	27.40 (7.87)	32.75 (10.72)
OGRS2	67.71 (20.0)	52.66 (21.86)	62.31 (24.32)	35.99 (24.11)
No. Precons	9.02 (9.62)	6.75 (6.43)	8.87 (9.07)	4.57 (5.74)
<i>Index offence</i>				
Burglary ^a	175 (81.0)	41(19.0)	158 (75.2)	52 (24.8)
Criminal damage ^a	64 (68.8)	29 (31.2)	87 (60.8)	56 (39.2)
Fraud and forgery ^a	93 (64.1)	52 (35.9)	47 (42.7)	63 (57.3)
Motor ^a	51 (78.5)	14 (21.5)	15 (75.0)	5 (25.0)
Other ^a	529 (62.1)	323 (37.9)	463 (45.0)	567 (55.0)
Sexual ^a	2 (100)	0 (0)	14 (24.1)	44 (79.9)
Theft and handling ^a	511 (77.5)	148 (22.5)	631 (78.2)	176 (21.8)
Violence ^a	133 (67.2)	65 (32.8)	117 (43.8)	150 (56.2)
<i>Time at risk^b</i>	572.88 (134.48)	545.10 (110.30)	818.64 (189.96)	795.16 (200.87)

^a Categorical variables where the number in parentheses is a percentage; in other cases the figure is a mean with standard deviation in parentheses.

^b Time at risk is measured in days for each offender from the date of sentence to the end point of the study.

It can be seen that 69.87 per cent of offenders were reconvicted in the Experimental Group compared to 57.92 per cent of the Comparison Group. It should be noted that these are raw percentages in the sense that the significant variations between the groups, that might attenuate the differences in reconviction, remain uncontrolled.

Table 3.4: Reconviction in Completer, Non-completer, and Comparison Groups

	<u>Completers</u> (N= 748)		<u>Non-completers</u> (N= 1482)		<u>Comparison Group</u> (N= 2645)	
	<u>Reconvicted</u>	<u>Not reconvicted</u>	<u>Reconvicted</u>	<u>Not reconvicted</u>	<u>Reconvicted</u>	<u>Not reconvicted</u>
Male ^a	370 (54.4)	310 (45.6)	1038 (77.7)	298 (22.3)	1289 (59.8)	867 (40.2)
Female ^a	38 (55.9)	30 (44.1)	112 (76.7)	34 (23.3)	243 (49.7)	246 (50.3)
Age	26.26 (7.75)	29.20 (9.37)	25.61 (7.11)	27.22 (7.71)	27.40 (7.87)	32.75 (10.72)
OGRS2	64.11 (20.53)	50.02 (21.83)	68.99 (19.66)	55.36 (21.59)	62.31 (24.32)	35.99 (24.11)
No. Precons	8.75 (10.34)	6.60 (6.28)	9.11 (9.36)	6.89 (6.59)	8.87 (9.07)	4.57 (5.74)
<i>Index offence</i>						
Burglary ^a	43 (66.2)	22 (33.8)	132 (87.4)	19 (12.6)	158 (75.2)	52 (24.8)
Criminal damage ^a	20 (58.8)	14 (41.2)	44 (74.6)	15 (25.4)	87 (60.8)	56 (39.2)
Fraud and forgery ^a	25 (49.0)	26 (51.0)	68 (72.3)	26 (27.7)	47 (42.7)	63 (57.3)
Motor ^a	7 (70.0)	3 (30.0)	44 (80.0)	11 (20.0)	15 (75.0)	5 (25.0)
Other ^a	147 (46.2)	171 (53.8)	382 (71.5)	152 (28.5)	463 (45.0)	567 (55.0)
Sexual ^a	0	0	2 (100)	0 (0)	14 (24.1)	44 (79.9)
Theft and handling ^a	121 (64.7)	66 (35.3)	390 (82.6)	82 (17.4)	631 (78.2)	176 (21.8)
Violence ^a	45 (54.2)	38 (45.8)	88 (76.5)	27 (23.5)	117 (43.8)	150 (56.2)
<i>Time at risk^b</i>	597.64 (144.57)	553.84 (113.72)	564.10 (129.65)	536.15 (106.11)	818.64 (189.96)	795.16 (200.87)

^a Categorical variables where the number in parentheses is a percentage; in other cases the figure is a mean with standard deviation in parentheses.

^b Time at risk is measured in days for each offender from the date of sentence to the end point of the study.

As shown in Table 3.5, it can be seen that 54.55 per cent of offenders were reconvicted in the Completers Group, 77.60 per cent in the Non-completers Group, and 57.92 per cent in the Comparison Group. As before, these are raw percentages with group variations remaining uncontrolled.

Analysis A: Reconviction by completion status

The first level of multivariate analysis compared the frequency of reconviction of Completer, Non-completer, and Comparison Groups.

Table 3.5: Reconviction Status by completion status

	Completers (%)	Non-completers (%)	Comparison Group (%)
Reconvicted	408 (54.5)	1150 (77.6)	1532 (57.9)
Not Reconvicted	340 (45.5)	332 (22.4)	1113 (42.1)
Total	748 (100.0)	1482 (100.0)	2645 (100.0)

Non-parametric analysis showed that the frequency distribution in Table 3.5 differed significantly from chance, $\chi^2(2) = 188.21$, $p < 0.001$. Inspection of the figures shows that the Completers have the lowest reconviction rate and the Non-completers the highest.

However, given the previously established differences between the groups, it is clearly necessary to control for variations in age, level of risk, and so on.

Multivariate analysis

A sequential logistic regression was carried out to examine the effect of the treatment in the prediction of group membership with respect to reconviction outcome (i.e. reconvicted and not reconvicted). First, the control variables age, OGRS2 score, sex, offence type, and time at risk were entered into the analysis and they produced a good model fit (i.e. discrimination between the groups). The addition of treatment group in to the analysis led to a statistically significant improvement in the model provided by age, OGRS2 score, sex, offence type, and time at risk alone. This analysis therefore points to a significant treatment effect on rate of reconviction when key variables are controlled statistically. The full model gave a correct overall classification of cases of 72.7 per cent, with classification more accurate for reconvicted (85.2%) rather than non-reconvicted (51.0%) offenders.

In order to look at the “pairwise” comparisons between the three groups the same analysis was repeated but with pairs of groups, rather than all three simultaneously, entered into the model generated by the four control variables.

Completers vs. Non-completers

The frequency of reconviction in the Completers Group was 54.54 per cent as compared to 77.60 per cent in the Non-completers Group. The addition of group led to a significant improvement in the model provided by age, OGRS2 score, sex, offence type, and time at risk alone. The analysis indicated that when the other variables are controlled statistically Non-completers were significantly more likely to be reconvicted than Completers.

Completers vs. Comparison

The frequency of reconviction in the Completers Group was 54.54 per cent as compared to 57.92 per cent in the Comparison Group. The addition of group led to a significant improvement in the model provided by age, OGRS2 score, sex, offence type, and time at risk. The analysis indicated that when the other variables are controlled statistically Completers were significantly less likely to be reconvicted than offenders in the Comparison group.

Non-Completers vs. Comparison

The frequency of reconviction in the Non-completers Group was 77.60 per cent as compared to 57.92 per cent in the Comparison Group. The addition of group led to a significant improvement in the model provided by age, OGRS2 score, sex, offence type, and time at risk. The analysis showed that when the other variables are controlled statistically Non-completers were significantly more likely to be reconvicted than offenders in the Comparison group.

Analysis B: Reconviction by Experimental and Comparison Status

Multivariate analysis

A sequential logistic regression was carried out to examine the effect of group membership in the prediction of group membership with respect to reconviction status. First, age, OGRS2 score, sex, offence type, and time at risk were entered into the analysis and they produced a good model fit (i.e., discrimination between the groups). The addition of group led to a significant improvement in the model provided by age, OGRS2 score, sex, offence type, and time at risk alone. This finding suggests that when the key variables are statistically controlled the Experimental Group were significantly more likely to be reconvicted than the Comparison Group.

Supplementary analysis: eligibility and outcome

To be eligible for a Pathfinder programme offenders should have an OGRS2 score of between 31 per cent and 74 per cent. However, inspection of the distribution of OGRS2 scores suggested that the scores of some offenders who had completed programmes were outside the correct range. The following supplementary analyses look at offenders who had completed programmes but either had OGRS2 scores that were lower than 31 per cent (“Too Low”), between 31 per cent and 74 per cent (“Appropriate”), or higher than 74 per cent (“Too High”). The reconviction data for the three groups (Completer, Non-completer, and Comparison) according to the three risk bands (Low, Appropriate, High) are shown in Table 3.6.

Table 3.6: Frequency of Reconviction Status by “Appropriateness risk band”

	Group	Too Low	Appropriate	Too High
		n	n	n
<i>Reconvicted</i>	Completer	31	218	159
	Non-completer	53	567	530
	Comparison	215	716	601
<i>Not reconvicted</i>	Completer	80	211	49
	Non-completer	48	211	73
	Comparison	558	446	109

The frequencies in Table 3.6 can be converted into percentage reconviction rates: e.g., there are 111 (31+80) “Too Low-completers”, so percentage reconvicted for these particular offenders is 31/111 or 27.93 per cent.

Table 3.7: Percentage reconviction by “Appropriateness risk band”

	Group	Too Low	Appropriate	Too High
		Completer	27.93	50.82
<i>Reconviction rate</i>	Non-completer	52.48	72.88	88.39
	Comparison	27.81	61.62	84.65

Inspection of the tables shows that for the Completers the lowest reconviction rate is for those offenders whose risk is too low for entry into a programme: it can be seen their reconviction rate

matches that of the low risk Comparison Group. In other words, for low risk offenders there is a low rate of reconviction apparently irrespective of whether or not the offenders have participated in a programme, but note the detrimental effect of being a non-completer in the low risk cohort. For the “Too High” band there is, as would be expected, a high rate of reconviction: interestingly, while the comparison and the non-completers show similar levels of reconviction, there is a lower rate of reconviction for the high risk offenders who complete a programme. This observation suggests that a treatment effect may be present even when a programme is delivered to inappropriate offenders. Finally, Completers in the Appropriate band are those offenders for whom the targeting is correct and hence a treatment effect should be evident and, indeed, the figures indicate that this is the case.

Multivariate analysis

A sequential logistic regression was carried out to examine the effect of treatment and an offender’s appropriateness for treatment (as assessed by OGRS2 scores) in the prediction of group membership with respect to reconviction outcome (i.e. reconvicted and not reconvicted). First, age, sex, offence type, and time at risk were entered into the model, followed by group (Completer, Non-completer, Comparison), and finally by appropriateness (Too Low, Appropriate, Too High). The addition of appropriateness led to a significant improvement in the model provided by age, sex, offence type, time at risk, and group. Correct classification of cases overall was 72.8 per cent, with classification more accurate for those who had been reconvicted (85.8%) than compared to those who had not (50.1%).

In order to look at the “pairwise” comparisons between the three appropriateness groups the same analysis was repeated but with pairs of groups, rather than all three simultaneously, entered into the model generated by the three control variables and group.

Too Low vs. Appropriate

The frequency of reconviction in the Too Low Group was 30.36 per cent as compared to 63.36 per cent in the Appropriate Group. The addition of group led to a significant improvement in the model provided by age, sex, offence type, time at risk, and group. The analysis indicated that the Appropriate Group were significantly more likely to be reconvicted than the Too Low Group, when the other variables are controlled statistically.

Too Low vs. Too High

The frequency of reconviction in the Too Low Group was 30.36 per cent as compared to 84.81 per cent in the Too High Group. The addition of group led to a significant improvement in the model provided by age, sex, offence type, time at risk, and group. The analysis indicated that the Too Low Group were significantly less likely to be reconvicted than offenders in the Too High group, when the other variables are controlled statistically.

Appropriate vs. Too High

The frequency of reconviction in the Appropriate Group was 63.36 per cent as compared to 84.81 per cent in the Too High Group. The addition of group led to a significant improvement in the model provided by age, sex, offence type, and group. The analysis showed that the Appropriate Group were significantly less likely to be reconvicted than offenders in the Too High Group, when the other variables are controlled statistically.

4. Discussion

The first point to emerge from this study is with regard to the effect of type of study design on the findings. When all the offenders put forward for a programme (the Experimental Group) are compared to a matched comparison group, with statistical control of key variables, there is no difference in the reconviction rates of the two groups. This null finding parallels a recent prison service study employing this design in which no treatment effect was found (Cann *et al.*, 2003). Does this mean that programmes do not produce a treatment effect in terms of a reduction in reconviction? This lack of effect could be taken as one interpretation of the findings, however there are two other possibilities. The first explanation may lie in the weaknesses of this research design. While the Experimental and Comparison groups were matched on several variables, they were not matched on others, such as suitability for a programme, which if controlled might produce a difference in outcome; nor was there random allocation to Experimental and Comparison Groups.

The second explanation is that the null finding is almost certainly influenced by the high rate of non-completion within the Experimental Group. It could be argued that as only one-third of the offenders in the Experimental Group actually completed a programme this lack of a treatment effect actually points to a failure of implementation rather than programme failure. Given that the data in this study were collected when Pathfinder programmes were first being implemented in the Probation Service this explanation may have some value. The comparison of the current findings with the forthcoming Prospective Study will be illuminating in this respect.

The findings from the "Treatment Received" design show that those offenders on probation who complete a programme show significantly lower reconviction rates than both those who fail to complete and the untreated comparison group. Further, the magnitude of the treatment effect is increased when the analysis is sharpened to take into account appropriate and inappropriate programme allocation. When separated into Appropriate and Too High and Too Low groups, the treatment effect remained for the appropriate group but was less apparent for the other two groups. Theoretically, this pattern of findings is in accord with the risk principle as formulated by Andrews and Bonta (2003).

Do these findings provide evidence of that programmes produce a treatment effect in terms of lower reconviction? Certainly, the findings are in line with a treatment effect, as would be consistent with a previous evaluation of a sex offender treatment programme in Probation (Beech, Erikson, Friendship, & Ditchfield, 2001) and with the aims and design of the Pathfinder projects. This finding is also consistent with Cann *et al.* (2003) who also found a treatment effect when non-completion was controlled. However, there are several alternative explanations to consider.

First, could the effect be due to the high numbers of lost cases? As far as it was possible to test, we could find no systematic differences between offenders lost from the study and those remaining in the study. However, data were consistently lost from some probation areas rather than others. It is possible, therefore, that the areas that had good data collection systems were delivering programmes to a higher standard, thereby introducing a "quality" bias into the data: it is known that there are organisational variations across probation services in strategies for delivery of offending behaviour programmes (Hollin *et al.*, 2002). Of course, this does not negate a treatment effect, but suggests it needs a high organisational performance to be evident and would probably be weakened by more inclusive national sampling.

Second, could the treatment effect be a selection effect? In other words, are the completers those offenders who would not have committed more offences even without participating in a programme? This possibility was addressed, as far as possible, by using multivariate statistics to control for criminogenic factors, such as age and level of risk, that are predictive of recidivism. When these predictive factors are controlled, the treatment effect continues to be evident, suggesting that the effect is reasonably robust. However, it is possible that there are other factors, such as motivation for change, that are acting as a means of self-selection but which are not part of this study. An allied explanation is that the whole sample is biased and not representative of offenders on probation: however, matching the sample characteristics against the national profile did not produce any notable discrepancies.

Third, in this study the data were aggregated, so is it possible that one or two “high performing” programmes gave the treatment effect? The wider analysis found that there was a reasonable consistency of effect across all the programmes, with no notable high performing programme. Further, the programmes included in this study were dominated by cognitive skills programmes, the first to be introduced into the Probation Service on a large scale, the effects of a broader range of programmes remains to be seen.

While the findings of this study suggest a possible a treatment effect, we do not have treatment output data to allow an analysis of the relationship between the effects of treatment at an individual level (i.e., process) and later reconviction (i.e., outcome).

Finally, there is a point to be made about Non-completers. Accepting the newness of programmes in the Probation Service and inappropriate allocation into programmes, nevertheless the findings here do suggest that is there cause for concern about offenders who fail to engage or dropout of offending behaviour programmes. Indeed, it will be recalled that “Dosage” was one of the Accreditation Criteria by which a programme was judged to have the potential to impact on offending. As the evidence accumulates, it is becoming apparent that for an offender to start a programme but to fail to complete may be disadvantageous with regard to offender recidivism (Cann, *et al.*, 2003; Hanson *et al.*, 2002; Wormith & Olver, 2002). Further, in the broader context of milieu treatments, Lipton, Pearson, Cleland, and Yee’s (2002) analysis led them to conclude that “Overall, it seems fair to say that there is a significant time in treatment effect upon the favourableness of recidivism outcomes” (p. 62). We signal the issue of non completion and time actually engaged in treatment as a potential concern that arises from this and other studies and which merits careful consideration in future programme evaluations.

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