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Does Forum Sentencing reduce re-offending?

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Forum Sentencing is an adult-focussed restorative justice program that operates in two NSW sites: Liverpool and Tweed. Under the scheme, young adults who meet certain eligibility and suitability criteria can have their matter dealt with by way of a community conference rather than being dealt with in a conventional court setting. The aim of the current study was to determine whether offenders who are dealt with by way of a Forum Sentence are less likely to re-offend than those sentenced in the usual way. Forum Sentencing participants were compared with a matched sample of offenders who met the eligibility criteria for Forum Sentencing but who were sentenced in a conventional court. The two groups were compared on four measures: (a) the proportion within each group who were reconvicted of a further offence within one year of being sentenced, (b) the proportion within each group who were convicted for two or more offences within one year of being sentenced, (c) the time to first reconviction and (d) whether, on average, the Forum Sentencing group committed less serious offences than the comparison group. No evidence emerged that Forum Sentencing participants performed better on any of these outcomes.

KEYWORDS: Sentencing, restorative justice, conferencing, propensity score matching, recidivism

INTRODUCTION

The Forum Sentencing scheme (formerly known as the Community Conferencing for Young Adults Pilot Program) commenced in September 2005 at two NSW sites: one metropolitan local[1] court (Liverpool, in south-western Sydney) and a non-metropolitan local court circuit (encompassing Tweed Heads, Murwillumbah, Byron Bay and Mullumbimby Local Courts). This scheme operates as an alternative to regular court sentencing procedures in much the same way as Youth Justice Conferences operate for young offenders. Under the scheme, adults who meet certain eligibility and suitability criteria can be dealt with at a community conference rather than by regular court sentencing procedures. The eligibility and suitability criteria are described in greater detail elsewhere (People & Trimboli 2007) and are only summarised here.

To be eligible, offenders must (a) be aged between 18 and 24 years, (b) plead or be found guilty, (c) be facing the likelihood of a prison sentence, (d) not be charged with any offences that would exclude them from participating (i.e. strictly indictable offences and indictable offences that cannot be dealt with summarily exclude offenders from participating), (e) not have a prior record of any offences that would exclude them from participating (e.g. drug importation, firearms offences), and (f) be prepared to participate. In addition to these eligibility criteria, the Program Administrator makes an assessment as to whether a particular offender is suitable for the program. Factors taken into consideration include whether the offender: accepts responsibility for the offence, accepts the facts, has an understanding of the process involved, is willing to actively participate in deciding how to make reparations for the offence and understands that the conference is only part of the sentencing process. The Administrator also takes into account the nature of the relationship between the victim and the offender (see People & Trimboli 2007 for more detail).

Ordinarily, a conference involves a facilitator, the offender, the offender's support people, the victim and the victim's support people meeting to discuss the offence and to come up with an intervention plan to repair the damage done by the offence. Intervention plans can involve a range of actions, including making an apology and/or financial reparation to the victim, undertaking community work or addressing factors that might underlie the offending behaviour (e.g. treatment for substance misuse). Forum Sentencing is based on the principles of restorative justice – a broad term that refers to offenders and victims coming together to work out what to do about a particular offence (Marshall 1999). Restorative justice programs typically aim to repair the harm done to victims through a process of negotiation and mediation, and to reduce rates of offending through a process of re-integrative shaming. The theoretical underpinning of re-integrative shaming is that respectfully disapproving of a person's actions can have a positive

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shaming effect and reduce an offender's likelihood of re-offending (Braithwaite 1989).

In 2005, the Bureau undertook an evaluation of the Forum Sentencing scheme to ascertain levels of participant and stakeholder satisfaction with the program, whether the proceedings led to an increase in acceptance of responsibility by the offenders, whether the program reached the intended recipients and the overall rate of re-offending among Forum Sentencing participants (People & Trimboli 2007). The evaluation revealed that victims, offenders and their support people were generally very satisfied with the program. This finding is consistent with a large number of prior evaluations of restorative justice programs (Sherman & Strang 2007). Stakeholders were also mostly satisfied with the Forum Sentencing program, although some suggested that changes could be made to enhance program effectiveness. One particular issue of note was the high number of conferences held where there was no direct victim. Many of these involved motor vehicle regulatory offences. In response to the initial evaluation report, a number of changes to the Forum Sentencing Regulation were recommended and were subsequently approved by Cabinet in July 2008. These changes included removing regulatory driving offences where there is no direct victim from the eligibility criteria, removing the upper age limit, excluding offenders who have previously been sentenced to a term of imprisonment or a suspended term of imprisonment, allowing some offenders charged with non-intimate[2] domestic violence offences onto the program and, critically, having 'reducing re-offending' as an explicit aim of the program.

Despite the widespread uptake of restorative justice programs in many western countries, evidence for their effectiveness in reducing recidivism is limited. The Canberra Re-integrative Shaming Experiments (RISE) – which used the gold standard random allocation to treatment and control conditions – provided evidence that youth conferencing works for some groups (e.g. younger people) but not for everyone (Sherman et al. 2000). Sherman and Strang (2007) reached a similar conclusion in their review of 36 restorative justice evaluations. While there was evidence of substantial reductions in offending among some groups of offenders, others showed no reduction. Sherman and Strang concluded that restorative justice programs appear to work better among more serious offenders, such as those convicted for violent crimes. That restorative justice interventions might not be particularly effective among less serious offenders is supported by a recent long-term re-analysis of the RISE drink-driving study, which found no effect of conferencing on risk of re-offending (Tyler et al. 2007).

Relatively few studies have explicitly tested the effect of adult-focussed restorative justice programs on recidivism risk and there have been no systematic reviews of restorative justice programs among this target group. Shapland and colleagues (2008) from the Centre for Criminological Research at the University of Sheffield recently completed an evaluation of three adult-based schemes in the United Kingdom. While they found no impact of these programs on the likelihood of committing any new offence or on the seriousness of re-offending, they did find a positive treatment effect for frequency of re-offending when pooled across the three programs. Triggs (2005) followed a cohort of offenders dealt with under the New Zealand Court-referred Restorative Justice Pilot for two years following their participation in the program. Like Forum Sentencing, the New Zealand scheme is adult-focussed and is perhaps the most similar to Forum Sentencing in terms of its operation. Triggs found no statistically significant effect of the program on the overall likelihood of re-offending within two years, the time take to re-offend, the seriousness of re-offending or in the likelihood of receiving a subsequent prison sentence.

While the initial evaluation of Forum Sentencing examined rates of re-offending and found that very few offenders returned to court for new offences, the short follow-up period (mean = 4.8 months) and lack of a suitable comparison group did not allow for any rigorous comparative analysis of recidivism rates. The aim of the current study was to build on the earlier evaluation to assess whether offenders who had been Forum Sentenced as at 30 September 2007[3] had a lower likelihood of re-offending relative to a matched comparison group. To address this aim, the cohort of all offenders who had been sentenced under the scheme was identified and matched to the Bureau's re-offending database (ROD) (Hua & Fitzgerald 2006) to determine whether they had any new offences recorded after being Forum Sentenced. Offenders who matched the Forum Sentencing group on known eligibility criteria and who were sentenced via conventional means were also selected from ROD and served as a comparison group.

The specific aims of this evaluation were to assess whether Forum Sentencing participants:

1. were less likely than comparison offenders to re-offend within 12 months;
2. re-offended more slowly than those in the comparison group;
3. re-offended less frequently within 12 months than those in the comparison group; and/or
4. committed less serious offences than those in the comparison group (if they did re-offend).

It is important to point out that all of the offenders included in this analysis went through the Forum Sentencing scheme prior to the regulatory changes that came into force in July 2008. One of the major changes to the eligibility criteria was to exclude driving offenders from the pool of eligible offenders. In order to assess whether Forum Sentencing would be effective in reducing re-offending as it currently operates, the analyses were also re-run with driving offenders removed from the sample.

METHOD

SELECTION OF FORUM SENTENCING AND COMPARISON GROUPS

The Case Co-ordinators in the two court locations where Forum Sentencing operates provided the Bureau with the names of all offenders who had been Forum Sentenced between 1 October 2005

and 19 May 2008. The Co-ordinators also included the date on which the court had made the Forum Sentencing order. The initial cohort consisted of 329 unique offenders. The names and relevant court appearance dates were then matched to corresponding court records held on ROD. Four names could not be matched to a corresponding offender on the database and a corresponding court finalisation date could not be found for a further eight offenders.[4] Fifty-three of the remaining 317 offenders were sentenced after 30 September 2007. These offenders were excluded from all analyses because they had less than one year of follow-up time in which to observe their subsequent offending.[5] Omitting these offenders left a total sample of 264 Forum Sentencing participants for the purposes of the current analysis.

The comparison group consisted of all people who: (a) were dealt with over the same time period in NSW local courts that did not participate in the Forum Sentencing program; (b) pleaded guilty or were found guilty of one or more offences; (c) were aged 18-24 years at the time of their index court appearance; (d) were not charged with an offence that would have excluded them from participation in Forum Sentencing had it been available in that court;[6] and (e) had no prior convictions for offences that would have excluded them from participation in Forum Sentencing had it been available.[7] In total, 39,883 unique eligible offenders were identified over the study period.

The court appearance at which the offender was ordered to attend a Forum Sentence will be termed the index court appearance throughout this report. In most cases, Forum Sentencing participants are also sentenced on the index date (typically by way of a supervised bond or, to a lesser extent, a suspended prison sentence). For the comparison group, the index court appearance was defined as the date their court matter was finalised, which, for most offenders, was also the date on which they were sentenced. If a potential comparison offender had two or more court appearances where an offence was proven over the study period, one of their finalised court appearances was randomly selected from all possible appearances. Defining the index court appearances in this way allowed a comparison of administering a sentence by way of a conference with 'treatment as usual'. In other words, both groups received their sentence on the same date and the groups differed only in that the Forum Sentencing group were sentenced via a conference while the comparison group served their sentence in the usual way.

OUTCOME MEASURES

Four separate outcomes were assessed in the current analysis:

(1) REOFFEND: Whether offenders had re-offended within 12 months of their index court appearance. For the purposes of this study, re-offending was defined as having at least one finalised court appearance where one or more offences were proven in the 12 months following the index appearance (0=no, 1=yes). This outcome was conditional on one of the proven offences dealt with at that court appearance being committed in the 12 months following the index date.[8]

(2) SURVIVAL: Survival time to first new offence after the index court appearance. For the purposes of this analysis, survival time was calculated as the number of days between the index court appearance and the first proven re-offence.[9] Any time spent in custody between these two dates was subtracted from the total number of days in order to adjust for exposure time (or opportunity to re-offend).

(3) FREQUENCY: Offending frequency was counted as the number of court appearances where one or more offences were proven in the 12 months after the offender's index court appearance. A court appearance was only counted as a re-offence if one or more offences that were dealt with at the new court appearance occurred in the 12 months following the index court appearance.

(4) SERIOUSNESS: Offending seriousness was measured using the Offence Seriousness Index (OSI) developed by the Crime Research Centre in Western Australia (Ferrante 1998). The OSI assigns a numerical value to each Australian Standard Offence Classification (ASOC) code, where lower values indicate that an offence is more serious. The change in offence seriousness was calculated by subtracting the seriousness score for the most serious offence committed in the 12 months after the index offence from the most serious index offence. Negative numbers indicated that an offender had decreased the seriousness of their offending, while positive scores indicated that their offending had become more serious. Those who had a change score of zero were regarded as having neither increased nor decreased their offending seriousness.

ANALYSIS

With any non-experimental evaluation design, there is always a possibility of selection bias. In other words, it is possible that any observed differences in recidivism rates between treatment (i.e. Forum Sentencing) and control groups is due not to the effect of the treatment per se but to underlying differences between the two groups. Three methods of analysis were employed to account for this potential selection bias.

In the first instance, standard regression techniques were employed to model the relationship between group membership (i.e. Forum Sentencing or comparison) and each outcome while controlling for any known differences between the two groups. The factors controlled for in the analyses are described in the 'independent variables' section below. Bivariate comparisons were first carried out to determine whether there was any significant relationship between group membership and each of the characteristics described below (at $p<0.25$).[10] Next, the relationship between each of the characteristics and each of the re-offending outcomes was assessed to determine which factors might potentially confound the relationship between group membership and re-offending (again at $p<0.25$).[11] Multivariate regression models were then fitted to the data to assess the relationship between group membership and recidivism while adjusting for potential confounders. Binary logistic regression was used to

model the REOFFEND, FREQUENCY and SERIOUSNESS outcomes. For REOFFEND, the outcome variable was set to one if the offender had returned to court within 12 months of the index appearance and zero otherwise. For FREQUENCY, the outcome variable was set to one if the offender had returned to court two or more times within 12 months of the index appearance and zero otherwise.[12] For SERIOUSNESS, the outcome variable was set to one if the offender had returned to court within 12 months of the index appearance and the offence was deemed to be less serious than the index offence. SERIOUSNESS was set to zero if the offender had returned to court within 12 months of the index appearance and the offence was deemed to be either the same or more serious than the index offence. Non-recidivists were excluded from the SERIOUSNESS analysis. Cox proportional hazards regression was used to model the SURVIVAL outcome.

A manual forward selection modelling strategy was employed for each of the regression analyses described above, whereby each potential confounder was entered into the model one at a time. Factors that were statistically significant (at $p<0.05$) were retained in the model and factors that were not statistically significant after adjusting for other variables were omitted from the models. Interaction terms were fitted to the final models to assess whether any confounders modified the effect of group membership on the outcome of interest. The Hosmer-Lemeshow test statistic was employed to assess the adequacy of the logistic regression models and time-dependent covariates were fitted to the Cox regression models to test that the proportional hazards assumption was met. Each of the standard regression models was fitted using a randomly selected subset (n=1,000) of the entire population of possible controls (n=39,883) because such a large size imbalance between treatment and control groups can destabilise the parameter estimates. However, each of the regression models was also fitted to the entire population of controls to ensure the conclusions reached were not due to selection of a non-representative sub-sample of control group members (see Table A2 in the Appendix).

The second method of analysis was to use direct matching in conjunction with regular regression techniques to assess re-offending likelihood. This involved matching each offender in the Forum Sentencing group with two[13] corresponding offenders in the comparison group exactly on their age (in years), index offence (using lowest level ASOC categories) and the number of court appearances that resulted in a conviction in the five years prior to the index appearance. The comparison group was first sorted according to a random number sequence to ensure that the two comparison participants were randomly selected where there were tied pairs (i.e. where there were more than two control group offenders who exactly matched a Forum Sentenced offender on age, priors and index offence). Offenders in the Forum Sentencing group who had no matching offenders in the comparison group (n=14) were excluded from the analyses. Forum Sentencing offenders who could only be matched with one comparison group member (n=1) were retained in the sample. The matching process resulted in an effective sample size of 749 offenders for the analysis (250 in the Forum Sentencing group and 499 in the control group). The same regression techniques as discussed above were then employed to account for any residual differences between the two groups (e.g. in their number of concurrent offences).

The final method employed to assess the relationship between treatment and recidivism risk was propensity score matching (Rosenbaum & Rubin 1983). In essence, propensity score matching attempts to create the conditions of a randomised experiment, albeit retrospectively, by matching participants on their likelihood (or propensity) of getting Forum Sentenced. The assumption of propensity score matching is that offenders in the treatment group who have characteristics that render them highly likely to get treatment should be similar in all respects to those in the control group who would also be highly likely to get treatment if it were available. Once matched on treatment propensity, simple unadjusted comparisons of actual recidivism rates can be carried out on the matched samples to assess whether there were any differences in recidivism between those who actually received the treatment (the Forum Sentencing group) and those who did not (the comparison group).

The first step in propensity score matching involves building a model of treatment likelihood based on known offender characteristics. The model is used to calculate predicted treatment probabilities. Re-offending outcomes are then examined for treatment and comparison group members who have the same or a very similar treatment probability. Two different matching methodologies were assessed. The first matching method employed was one-to-one propensity score matching, whereby a logistic regression model was fitted to derive the treatment propensities and each treatment offender was matched one-to-one with an offender from the control group who had the closest matching treatment probability score. The comparison dataset was first sorted according to a random number sequence to ensure that offenders in the comparison group were selected at random where there were tied propensity scores. The second matching method was to use k-nearest neighbour propensity score matching, whereby each treatment offender was matched to k offenders from the control group who had the nearest matching treatment probability scores. For the purposes of this study, k was equal to five control group offenders.[14]

SUPPLEMENTARY ANALYSIS

As outlined in the Introduction, one of the major reforms adopted following the first evaluation of Forum Sentencing was to exclude motor vehicle regulatory offenders from the program. Victimless crimes were excluded because having the offender 'face up' to the victim is one of the primary mechanisms by which restorative justice initiatives are thought to be effective. As a test of the likely impact of excluding driving offences, each of the final models outlined above was fitted with all driving offences removed.

INDEPENDENT VARIABLES

A number of characteristics that could potentially confound the relationship between being Forum Sentenced and risk of re-offending were identified from ROD. These were:

- GENDER;
- AGEGROUP: The age of the offender at the index court finalisation date;
- INDIG: Whether the offender identified as being of Aboriginal or Torres Strait Island descent at any court appearance between 1994 and the last date on ROD;[15]
- MSO: The most serious offence for which the offender was convicted at their index court appearance;
- BAIL: Whether the offender was on bail at their final court appearance;
- CONCUR: The number of concurrent offences for which the offender was convicted at the index court appearance;
- PRIORS: The number of finalised court appearances where one or more offences were proven in the five years prior to the index court appearance;
- JUVENILE: Whether the offender had one or more proven offences in a Children's Court and/or had a finalised Youth Justice Conference prior to their index court appearance;
- PRISON: Whether the offender had been sentenced to a period of full-time custody prior to the index court appearance; and
- TIMESINCE: Elapsed days since the most recent finalised court appearance preceding the index court appearance.

These variables were selected on the basis that they have been identified in the past as being strongly related to recidivism risk (e.g. Jones et al. 2006; Smith & Jones 2008). In addition to these potential confounders, two further variables were included in the analysis because they were considered to be potentially important discriminators of who is likely to get Forum Sentenced:

- GPLEA: Whether they pleaded guilty to the most serious offence at the index court appearance; and

Table 1. Characteristics of the Forum Sentencing group (n=264) and the randomly selected sub-sample of controls (n=1,000)

		Forum Sentencing N (%)	*Control group N (%)*	*p-value* [a]
Characteristic				
GENDER	(Male)	232 (87.9)	790 (79.0)	0.001
AGEGROUP [b]	18-20 years	138 (52.3)	455 (45.5)	0.050
	21-24 years	126 (47.7)	545 (54.5)	
INDIG	Indigenous	21 (8.0)	110 (11.0)	<0.001
	Non-Indigenous	225 (85.2)	739 (73.9)	
	Unknown	18 (6.8)	151 (15.1)	
MSO	Property/deception	69 (26.1)	114 (11.4)	<0.001
	Property damage/ public order	44 (16.7)	144 (14.4)	
	Driving	102 (38.6)	500 (50.0)	
	Other	49 (18.6)	242 (24.2)	
BAIL	(Yes)	263 (99.6)	967 (96.7)	0.009
CONCUR	0	128 (48.5)	664 (66.4)	<0.001
	1	69 (26.1)	179 (17.9)	
	2	35 (13.3)	86 (8.6)	
	3+	32 (12.1)	71 (7.1)	
PRIORS	0	116 (43.9)	619 (61.9)	<0.001
	1	60 (22.7)	186 (18.6)	
	2	30 (11.4)	90 (9.0)	
	3-4	38 (14.4)	59 (5.9)	
	5+	20 (7.6)	46 (4.6)	
JUVENILE	(Yes)	59 (22.4)	180 (18.0)	0.109
PRISON	(Yes)	13 (4.9)	48 (4.8)	0.933
TIMESINCE	No priors	116 (43.9)	619 (61.9)	<0.001
	731+ days	26 (9.9)	117 (11.7)	
	366-730 days	32 (12.1)	100 (10.0)	
	181-365 days	36 (13.6)	68 (6.8)	
	180 days or less	54 (20.5)	96 (9.6)	
GPLEA	(Yes)	253 (95.8)	817 (81.7)	<0.001
LEGREP	(Yes)	185 (70.1)	575 (57.6)	<0.001
Outcome				
REOFFEND		64 (24.2)	155 (15.5)	<0.001
SURVIVAL	(free days for 25% of group to re-offend)	369.0	780.0	<0.001
FREQUENCY	0	200 (75.8)	845 (84.5)	0.001
	1	44 (16.7)	121 (12.1)	
	2+	20 (7.6)	34 (3.4)	
SERIOUSNESS	Less serious	23 (36.5)	43 (28.7)	0.519
	No change	8 (12.7)	23 (15.3)	
	More serious	32 (50.8)	84 (56.0)	

a All p-values represent the results of chi-square tests of association with the exception of the comparison of time to re-offend. The difference in time to re-offend was tested using the log-rank test.

b One participant in the Forum Sentencing group was actually aged 17 years at the time their index court matter was finalised and six offenders were older than 24 years when their matters were finalised. These offenders were retained in the sample for the purposes of this analysis.

c Only calculated for those who had re-offended during follow-up.

- LEGREP: Whether the offender was legally represented at the index court appearance.

Both variables were considered for the first stage in the propensity score matching approach described above. The categorisation of each variable is shown in Table 1.

RESULTS

SAMPLE CHARACTERISTICS

The characteristics of the Forum Sentencing and randomly selected sub-sample of comparison groups are shown in Table 1 (Table A1 shows the characteristics of the entire population of possible controls for comparative purposes).

As can be seen in Table 1, 87.9 per cent of the Forum Sentencing group was male, 52.3 per cent were aged between 18 and 20 years at their index appearance[16] and 8.0 per cent identified as being of Aboriginal or Torres Strait Island descent. Almost two in five Forum Sentencing participants (38.6%) were convicted for a driving offence as their most serious index offence. One-quarter (26.1%) were convicted for a property or deception offence and 16.7 per cent were convicted for property damage or public order offences. Most (95.8%) of the Forum Sentencing group pleaded guilty at their index offence and most (99.6%) were on bail at that appearance. A majority (74.6%) of Forum Sentencing participants had either one or no concurrent offences at their index appearance and 56.1 per cent had one or more prior convictions. One in twenty Forum Sentencing participants had been to prison prior to their index appearance and 22.4 per cent had a history of juvenile offending.

When compared to the randomly selected subset of controls, offenders in the Forum Sentencing group:

- were younger;
- more likely to be male;
- less likely to have unknown Indigenous identification;
- more likely to be appearing for property offences and less likely to be appearing for driving offences;
- more likely to be on bail at finalisation;
- had more concurrent offences;
- were more likely to plead guilty at the index appearance;
- had more prior offences;
- were more likely to have had a court appearance within a short time of the index appearance; and
- were more likely to be legally represented at the index appearance.

There was no significant difference between the two groups in the proportions who had been sentenced to prison for prior offences or in the proportions who had prior offences as a juvenile.

At a bivariate level (i.e. without adjusting for any potentially confounding characteristics), participants in the Forum Sentencing group were found to be more likely to re-offend within 12 months than those in the comparison group (24.2% vs 15.5%, $p<0.001$), re-offended more quickly than controls (log-rank $\chi^2 = 11.6$, $p<0.001$) and had a significantly greater number of subsequent convictions within 12 months than controls (7.6% of Forum Sentencing participants had two or more convictions within 12 months compared with 3.4% of controls, $p=0.001$). There was no significant difference between the two groups in their likelihood of committing less serious offences ($p=0.519$).

STANDARD REGRESSION RESULTS

Figure 1 shows the survival curves for the Forum Sentencing and comparison groups after adjusting for the relevant confounding factors. While the survival curve for the Forum Sentencing group descends slightly more steeply than that for the comparison group, overall the two survival curves are relatively close together. This suggests that there was little difference in time to re-offend between the two groups.

Table 2 shows both the 'unadjusted' and the 'adjusted'[17] regression models for each of the outcome measures when standard regression techniques were employed.[18] The estimates provided for the outcomes REOFFEND, FREQUENCY and SERIOUSNESS are odds ratio estimates (with 95% confidence intervals in brackets) while the estimates provided for the SURVIVAL outcome are hazard ratios (with 95% confidence intervals in brackets). Odds and hazard ratio estimates greater than one (where the confidence intervals do not include one) indicate that the characteristic is a risk factor for re-offending. Odds and hazard ratio estimates less than one (where the confidence intervals do not include one) indicate that the characteristic is protective against re-offending. Odds and hazard ratio estimates equal to one (where the confidence interval includes one) indicate that the characteristic is not significantly associated with recidivism risk.

Figure 1: Estimated time to re-offend for the Forum Sentencing and randomly selected sub-sample of comparison group members after adjusting for important covariates

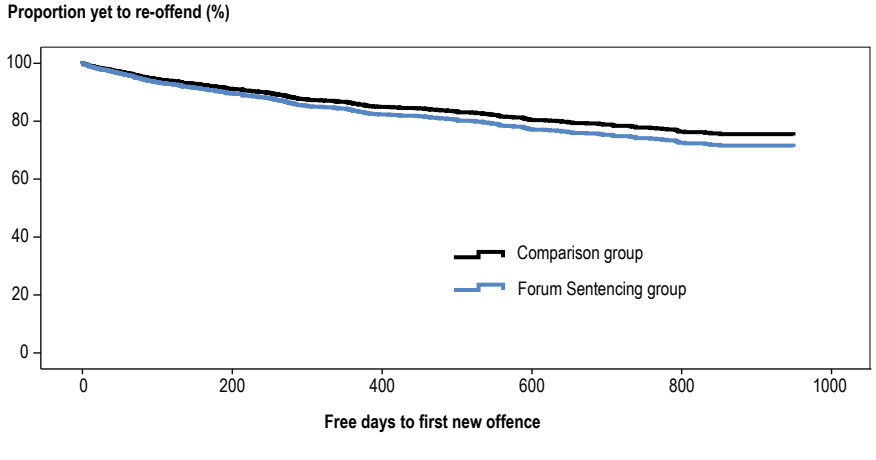


Table 2. Unadjusted and adjusted regression models of each outcome on group membership using standard logistic and Cox proportional hazards regression techniques

		REOFFEND (n=1,264)		*SURVIVAL (n=1,264)*		*FREQUENCY (n=1,264)*		*SERIOUSNESS (n=213)*	
		Unadj. OR (C.I.)	***Adj. OR (C.I.)***	***Unadj. HR (C.I.)***	***Adj. HR (C.I.)***	***Unadj. OR (C.I.)***	***Adj. OR (C.I.)***	***Unadj. OR (C.I.)***	***Adj. OR (C.I.)***
GROUP		1.7 (1.26-2.42)	1.3 (0.94-1.92)	1.5 (1.19-1.94)	1.2 (0.93-1.53)	2.3 (1.32-4.12)	2.2 (1.17-3.95)	1.4 (0.77-2.67)	1.2 (0.59-2.26)
GENDER			1.7 (1.07-2.75)		1.4 (1.03-1.99)				
AGEGROUP			0.6 (0.40-0.77)		0.6 (0.47-0.74)				
INDIG	Non-Indigenous		-		-		-		
	Indigenous		2.2 (1.41-3.41)		1.8 (1.36-2.49)		2.1 (1.03-4.27)		
	Indigenous unknown		0.2 (0.09-0.55)		0.3 (0.15-0.53)		-		
MSO [a]	Property/ deception						1.1 (0.63-1.82)		2.0 (1.12-3.54)
	Property damage/ public order						1.7 (1.03-2.83)		0.6 (0.29-1.11)
	Driving						0.7 (0.43-1.08)		0.5 (0.33-0.89)
CONCUR	0								
	1								
	2								
	3+								
PRIORS	0		-		-		-		
	1		1.6 (1.06-2.42)		1.5 (1.12-2.03)		1.4 (0.67-2.84)		
	2		2.1 (1.27-3.48)		1.8 (1.24-2.58)		1.1 (0.42-2.87)		
	3-4		3.1 (1.85-5.22)		2.6 (1.83-3.79)				
	5+		6.1 (3.39-10.87)		4.7 (3.22-6.82)		2.9 (1.17-7.06)		
JUVENILE							2.4 (1.26-4.76)		

a Rather than setting one offence category as the reference, each category was assessed against the average of all offence categories combined. When categorised this way, one offence category is necessarily omitted (in this case the 'other' category was omitted).

OR = odds ratio, HR = hazard ratio, C.I. = confidence interval

As can be seen from Table 2, the confidence intervals around the adjusted odds ratio and adjusted hazard ratio for the group variable included one for both the REOFFEND and SURVIVAL models. This suggests that, after adjusting for important confounders, there was no significant difference between Forum Sentencing offenders and controls on their likelihood of re-offending or in the time taken to re-offend. In contrast, Forum Sentencing participants were significantly *more likely* to have been convicted for two or more offences within 12 months of their index appearance. However, this finding should be interpreted cautiously because the outcome was rare (n=20 Forum Sentencing offenders and n=34 controls had been convicted two or more times within 12 months) and the confidence intervals around the odds ratio estimates were relatively large. There was no significant difference between Forum Sentencing and control participants in the likelihood of being convicted for less serious offences during follow-up.

DIRECT MATCHING

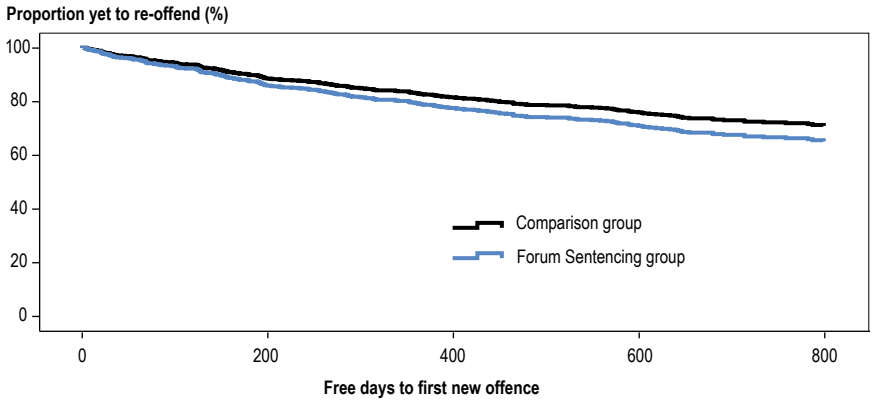
Table 3 shows both the unadjusted and the adjusted regression models for each outcome when Forum Sentencing

Table 3. Unadjusted and adjusted regression models of each outcome on group membership when the samples had been directly matched on age, prior offending and index offence

		REOFFEND (n=749)		*SURVIVAL (n=749)*		*FREQUENCY (n=749)*		*SERIOUSNESS (n=144)*	
		Unadj. OR (C.I.)	***Adj. OR (C.I.)***	***Unadj. HR (C.I.)***	***Adj. HR (C.I.)***	***Unadj. OR (C.I.)***	***Adj. OR (C.I.)***	***Unadj. OR (C.I.)***	***Adj. OR (C.I.)***
GROUP		1.3 (0.92-1.95)	1.4 (0.98-2.12)	1.2 (0.91-1.57)	1.2 (0.94-1.65)	1.5 (0.76-2.88)	1.7 (0.88-3.46)	1.4 (0.66-2.83)	N/A
GENDER			1.8 (1.01-3.28)		1.9 (1.21-2.99)				
INDIG	Non-Indigenous		-		-		-		
	Indigenous		3.2 (1.95-5.21)		3.0 (2.15-4.12)		4.3 (2.06-9.01)		
	Indigenous unknown		-		-		-		
CONCUR	0		-		-				
	1		1.0 (0.66-1.67)		1.1 (0.78-1.51)				
	2		1.0 (0.51-1.81)		1.0 (0.66-1.64)				
	3+		1.8 (1.02-3.08)		1.6 (1.05-2.34)				
JUVENILE									

and comparison offenders were first directly matched on age, number of prior conviction episodes and index offence type. Figure 2 shows the estimated survival curves for the Forum Sentencing and comparison groups after directly matching on age, priors and index offence and then adjusting for any residual confounding due to factors upon which the groups were not matched (i.e. Indigenous identification and concurrent offences). As can be seen from Figure 2, the Forum Sentencing group tended to re-offend more quickly than matched controls. However, Table 3 shows that that this difference was not statistically significant because the confidence interval about the adjusted hazard ratio on the group variable included one for the SURVIVAL model. Table 3 also shows that the adjusted odds ratios for the REOFFEND and FREQUENCY models were not significantly different from one, which also suggests that there was no significant difference between Forum Sentencing and comparison groups on those two outcomes. None of the potential confounders was significant for the model assessing seriousness of re-offending but the unadjusted odds ratio estimate was not significantly different from one. Once again, this suggests that Forum Sentencing participants were no more or less likely to decrease their offence seriousness than matched controls.

Figure 2: Estimated time to re-offend for the Forum Sentencing and comparison group members when directly matched on age, prior convictions and index offence and then adjusting for other covariates



PROPENSITY SCORE MATCHING

Table 4 summarises the stage 1 logistic regression model predicting likelihood of being Forum Sentenced. Male offenders, those convicted for property or deception offences, those having more concurrent offences, those who were legally

represented and those having more prior convictions were all more likely to be selected into the Forum Sentencing program. Older offenders, those convicted for driving offences, Indigenous offenders and those with unknown Indigenous status were less likely to be selected into the Forum Sentencing program. The Hosmer-Lemeshow test statistic was not statistically significant, which suggests that the model was appropriate. Moreover, the area under the Receiver Operating Characteristic (ROC) curve was 0.72, which suggested that the model provided an acceptable level of discrimination between Forum Sentencing and control groups.

The treatment probabilities were derived from the model shown in Table 4 and were used to match Forum Sentencing offenders with comparison group offenders who had similar treatment probabilities. Covariate balance checks were carried out to ensure that the Forum Sentencing and control groups were effectively balanced on both the variables used to predict treatment likelihood (i.e. the 8 variables shown in Table 4) and the variables that were not included in the final treatment prediction model (i.e. plea, prior history of incarceration and time since last conviction). This approach allowed a 'quasi' assessment of balance across both measured and unmeasured variables. Plea was the only measure that was not balanced across Forum Sentencing and control groups among the 11 covariate balance checks carried out on each of the one-to-one and nearest neighbour matched samples. It is difficult to know what, if anything, to make of this imbalance in pleading

Table 4. Logistic regression model estimating likelihood of being Forum Sentenced (0=no, 1=yes) (n=40,004)

		β *(s.e.)*	*p-value*	*OR (C.I.)*
Intercept		-5.77 (0.22)	<0.001	
AGEGROUP		-0.40 (0.13)	0.002	0.7 (0.52-0.87)
SEX		0.40 (0.19)	0.040	1.5 (1.02-2.17)
MSO [a]	Property/ deception	0.68 (0.11)	<0.001	2.0 (1.59-2.46)
	Property damage/ public order	0.05 (0.13)	0.706	1.0 (0.82-1.34)
	Driving	-0.27 (0.10)	<0.001	0.8 (0.63-0.92)
INDIG	Non-Indigenous	–		
	Indigenous	-0.76 (0.24)	0.002	0.5 (0.29-0.75)
	Indigenous unknown	-0.56 (0.25)	0.028	0.6 (0.35-0.94)
CONCUR	0	–		
	1	0.50 (0.15)	0.001	1.6 (1.22-2.21)
	2	0.58 (0.20)	0.003	1.8 (1.22-2.62)
	3	0.61 (0.21)	0.004	1.8 (1.22-2.77)
LEGREP		0.51 (0.14)	<0.001	1.7 (1.27-2.20)
PRIORJUV		-0.30 (0.18)	0.100	0.7 (0.52-1.06)
PRIORS	0	–		
	1	0.57 (0.17)	0.001	1.8 (1.27-2.44)
	2	0.67 (0.22)	0.002	2.0 (1.28-3.02)
	3-4	1.07 (0.22)	<0.001	2.9 (1.90-4.48)
	5+	1.00 (0.29)	0.001	2.7 (1.54-4.78)
Hosmer-Lemeshow χ^2_8 = 3.95, *p*=0.862				
AUC=0.72				

a *Rather than setting one offence category as the reference, each category was assessed against the average of all offence categories combined. When categorised this way, one offence category is necessarily omitted (in this case the 'other' category was omitted).*

Table 5. Difference between Forum Sentencing (FS) and control groups on each of the outcome measures when matched on propensity scores using (a) one-to-one matching and (b) k-nearest neighbour matching (where k=5)

	REOFFEND (%)			*SURVIVAL (free days for 25% of group to re-offend)*			*FREQUENCY (% 2+)*			*SERIOUSNESS (% less serious)*		
	FS	*Control*	*p-value*	*FS*	*Control*	*p-value*	*FS*	*Control*	*p-value*	*FS*	*Control*	*p-value*
One-to-one matching (n=528)	24.2	25.4	ns	369.0	318.0	ns	7.6	4.9	ns	36.5	35.9	ns
k-nearest neighbour matching (n=1,238)	24.2	22.8	ns	369.0	402.0	ns	7.6	6.1	ns	36.5	36.6	ns

'ns' denotes 'not statistically significant'

guilty across treatment and control groups. However, it is unlikely to alter the conclusions reached here because plea was not related to recidivism risk among the nearest neighbour sample and only weakly related to recidivism risk among the one-to-one sample. In the one-to-one matched sample, offenders who pleaded guilty were less likely to re-offend within 12 months of their index offence than offenders who pleaded otherwise ($p<0.05$). As a precaution, plea was controlled for in the one-to-one matched analysis and it did not alter the conclusions reached. In summary, therefore, there was strong evidence to suggest that each of the treatment propensity models resulted in good balance across influential measured and unmeasured covariates.

Table 5 shows the difference between Forum Sentencing and control groups on each of the outcome measures using the two types of propensity score matching. Figure 3 shows the survival curves when one-to-one matching was used, while Figure 4 shows the survival curves when nearest neighbour matching was used. As Table 5 shows, there was no significant difference between treatment and comparison groups across any of the outcomes. This result was independent of the method of propensity score matching employed. For example, 24.2 per cent of the Forum Sentencing group had returned to court and had been convicted for a further offence within 12 months. By comparison, 25.4 per cent of the control group members who matched the Forum Sentencing group on their probability of receiving treatment were reconvicted within 12 months (using one-to-one matching). This difference was not statistically significant.

Figure 5 summarises the findings of the propensity score matching. Prior to matching on treatment likelihood, there were significant differences between the Forum Sentencing and comparison groups on each of the measured outcomes. Prior to matching, the Forum Sentencing group were significantly more likely to re-offend within 12 months (24.2% vs. 15.5% of controls), re-offended more frequently (mean reconvictions within 12 months = 0.34 vs. 0.20 for controls) and re-offended more quickly

Figure 3: Estimated time to re-offend for Forum Sentencing and comparison groups when one-to-one propensity score matching was used

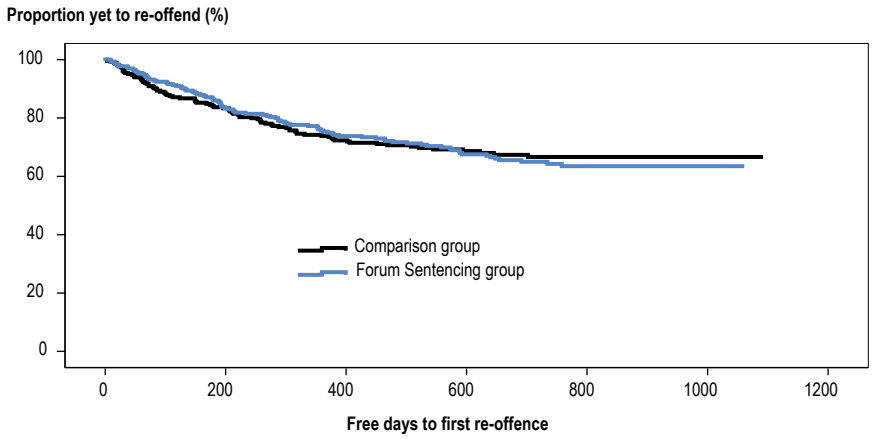
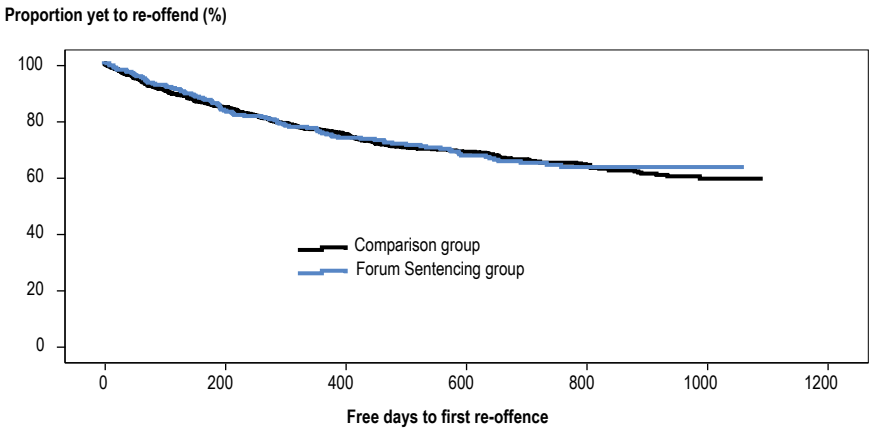


Figure 4: Estimated time to re-offend for Forum Sentencing and comparison groups when k-nearest neighbour propensity score matching was used



(25% of the Forum Sentencing group had re-offended within 369 days compared with 780 days for the comparison group). While it appears that the Forum Sentencing group were more likely to reduce the seriousness of their offending (36.5% of Forum Sentencing recidivists committed less serious offences cf. 28.7% of control group recidivists), the difference was not statistically significant. After appropriately matching the Forum Sentencing and comparison groups (based on treatment propensities), there were no significant differences on any of the outcomes.

SUPPLEMENTARY ANALYSIS

As outlined in the Introduction, one of the major reforms to the Forum Sentencing scheme following the first evaluation was to remove regulatory driving offences from the list of eligible offences. As a test of the likely effect of removing these offences, the final models outlined above were re-fitted to the data with all people convicted for driving offences removed from the sample. It was not possible to build adequate models of offending frequency or offence seriousness with driving offences because, in the former

Figure 5: Summary of re-offending outcomes for Forum Sentencing and comparison groups prior to matching and following matching (using one-to-one propensity score matching)

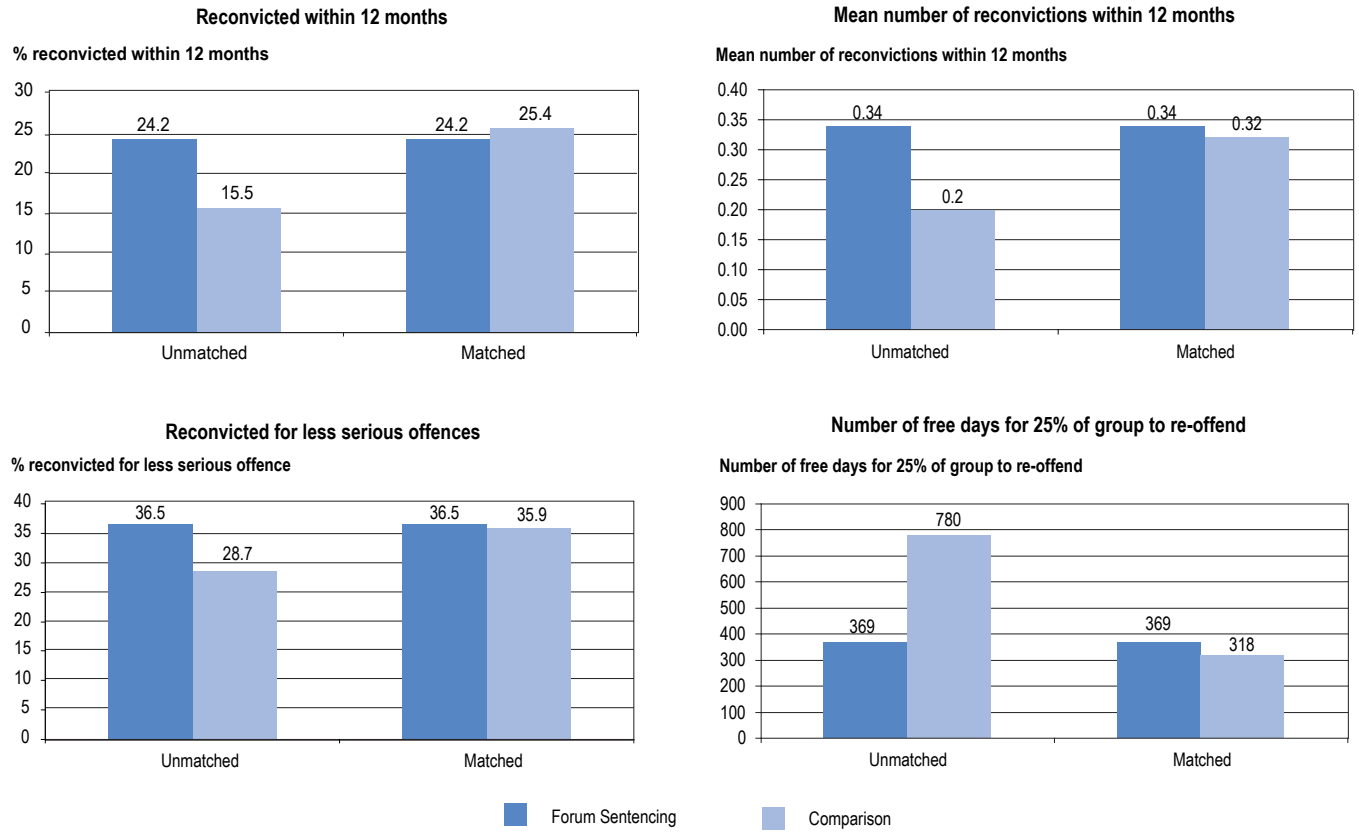


Table 6. Odds and hazard ratio estimates for the treatment effect using each type of analysis when offenders convicted for driving offences at the index were removed from the sample

	REOFFEND		*SURVIVAL*	
	Unadj. OR (C.I.)	***Adj. OR (C.I.)***	***Unadj. HR (C.I.)***	***Adj. HR (C.I.)***
Random sample of n=1000 controls	N/A	1.8 (1.12-2.75)	N/A	1.3 (0.96-1.80)
Full sample of n=39,883 controls	N/A	1.4 (0.95-1.97)	N/A	1.2 (0.92-1.53)
Direct matched	N/A	1.7 (1.07-2.84)	N/A	1.4 (0.99-2.00)
One-to-one PS matched	1.0 (0.62-1.65)	N/A	1.1 (0.75-1.57)	N/A
K-nearest PS matched	1.2 (0.74-2.01)	N/A	1.1 (0.75-1.58)	N/A
* p<0.05, * *p<0.01				

OR = odds ratio, HR = hazard ratio

case, the outcome was too rare and, in the latter case, the number of re-offenders became too small to conduct meaningful analyses.

Table 6 shows the odds and hazard ratio estimates for the effect of treatment on recidivism using the various methods of analysis. All of the unadjusted odds and hazard ratio estimates from the propensity score models were non-significant. With the exception of the comparison for REOFFEND using the randomly selected sub-sample of 1000 controls (which suggested that Forum Sentencing participants were more likely to re-offend than controls), the adjusted odds and hazard ratios were also not statistically significant when standard regression techniques and direct matching were employed. Collectively, these results provide no evidence to suggest that Forum Sentencing reduces re-offending when driving offences are removed from the sample.

DISCUSSION

The aim of the current study was to provide a rigorous assessment of the effectiveness of Forum Sentencing in (a) reducing the likelihood of re-offending, (b) increasing the time taken to re-offend, (c) reducing the frequency of subsequent offending and/or (d) reducing the seriousness of subsequent offending. There was no evidence from the current study that Forum Sentencing has any impact on any of these outcomes. Across a range of different methods of analysis, Forum Sentencing participants were found to be no more or less likely to re-offend than suitably matched controls. In one comparison, Forum Sentencing participants were found to re-offend *more frequently* when compared with the control group. However, the outcome (re-offending two or more times) was rare for that analysis. This finding is more likely to reflect statistical noise rather than any causal relationship between participation in the program and likelihood of re-offending. Indeed, less focus should be placed on the analysis of offending frequency than the other outcomes due to the short follow-up period. The distribution of court appearances within one year is highly skewed to the right and dichotomising the outcome variable (<2 vs 2+ court appearances) does not allow much freedom to detect subtle changes in offending frequency.

One limitation of this study is the possibility of selection bias, which is always a possibility where offenders are not randomly assigned to treatment and control conditions. For example, two factors that select participants into Forum Sentencing that could not be identified among the comparison group were (1) that magistrates first have to make an assessment that the offender is facing a prison sentence and (2) that participation is voluntary. There are two reasons for believing that these factors present a low risk of significantly biasing the estimated treatment effect here. First, a relatively large range of other control variables was employed to account for differences between the two groups. The unmeasured factors would have to exert a large independent effect on recidivism likelihood to mask any effect of Forum Sentencing. Previous studies have found that information that is not routinely recorded in administrative datasets adds little predictive power to recidivism analyses when static risk factors such as prior offending are accounted for (Weatherburn, Cush & Saunders 2007). The second reason to have confidence in the current findings is that all factors that are legally relevant to the selection of participants for Forum Sentencing were suitably controlled.

With a relatively small sample size of 264 offenders in the treatment group, it should also be pointed out that there would be relatively low power to reject the null hypothesis had there been any evidence of a treatment effect. For example, with the standard regression analyses where the treatment group had 264 members and the comparison group had 1000 members, there was 80 per cent power to detect a hazard ratio of 1.3 for controls relative to treatment (i.e. a relatively large treatment effect of 30%). For the one-to-one propensity score matching, where we had a treatment group of 264 and a same-size control group, the power to detect a 30 per cent reduction in offending falls to 60 per cent. However, statistical power is only problematic where there is some evidence of a treatment effect and there was no evidence of a treatment effect in the current study. The low sample size was, however, problematic for the supplementary analysis (i.e. when driving offences were removed). As a result, changes in offending frequency and offending seriousness could not be assessed because, in the former case, the proportion re-offending more than once within a year was too small and, in the latter case, there were too few recidivist offenders to make meaningful comparisons.

The question that naturally arises is why Forum Sentencing appears to be ineffective in reducing recidivism. One reason might be that a large number of offenders dealt with by way of Forum Sentencing have committed victimless offences (e.g. motor vehicle regulatory offences). Restorative justice programs are hypothesised to exert an effect on offending by making the offender face up to the victim. If there is no direct victim, this process cannot take place. The main problem with this explanation is that there was no evidence of any effect of Forum Sentencing even when driving offences were removed from the analysis.

Another possibility is that restorative justice programs might not be sufficient in and of themselves to reduce recidivism. Unfortunately there are no systematic reviews of the effectiveness of restorative justice programs (such as conferencing) on recidivism and little evidence bearing on their effectiveness for adults. What evidence does exist is not strong. Triggs (2005) found no significant impact of the New Zealand adult restorative justice program on recidivism. At best, evidence from the United Kingdom suggests that adult restorative justice programs have little effect on the overall likelihood of re-offending but a modest impact on frequency of re-offending (Shapland et al. 2008). That restorative justice programs might not have large impacts on recidivism is acknowledged by one of the leading proponents of restorative justice, John Braithwaite. In a 1999 essay, Braithwaite acknowledges that the research evidence bearing on the efficacy of restorative justice programs is mixed and outlines several reasons why we might reasonably be suspicious of their effectiveness in reducing re-offending. One notable argument put forward is that these programs fail to address the structural problems that underlie offending, such as unemployment or poverty (Braithwaite 1999, p.91).

This point is taken up by MacKenzie (2002) in her review of what works to reduce recidivism among known offenders. She suggests, “in order for programs to be effective…[they] must be designed to address the characteristics of the offenders that can be changed and that are associated with the individual’s criminal activities. Furthermore, the treatment provided to offenders must be of sufficient integrity to ensure that what is delivered is consistent with the planned design” (MacKenzie 2002, p.385). Treatment can be mandated as part of an offender’s individual outcome plan if it is deemed appropriate to do so. MacKenzie (2002) points out, however, that merely increasing referrals to

community-based services does not work to reduce offending. Effective rehabilitation programs, she argues, have to be "structured and focussed, use multiple treatment components, focus on developing skills…and use behavioural (including cognitive-behavioural) methods…and provide for substantial, meaningful contact between the treatment personnel and the participant" (p.385). Effective rehabilitation programs must also be of sufficient intensity – or in medical parlance the 'dose' must be strong enough – to exert a treatment effect (Goldsmith & Latessa 2001). Whether Forum Sentencing meets all of these criteria is not clear.

NOTES

1. The NSW Local Court has criminal and civil jurisdictions and deals with the majority of criminal and summary prosecutions and civil matters (up to $60,000) in NSW. The Local Court also conducts committal proceedings to determine whether or not indictable offences are to be committed to the District and Supreme Courts. Forum Sentencing only relates to criminal matters that can be dealt with summarily in the local courts.
2. Non-intimate domestic relationships refer to those where the victim and offender are living in the same household or residential facility, or where the victim and offender are related or, in the case of Aboriginal persons or Torres Strait Islanders, the victim is part of the extended family or kin of the offender according to the Indigenous kinship system of the person's culture.
3. At the time of data extraction, the Re-offending Database (ROD) contained court appearances that were finalised up to 30 September 2008. This allowed at least 12 months in which to observe subsequent court appearances for all offenders in the sample.
4. Non-matches typically occur due to data entry errors when either the Forum Sentencing Co-ordinators or court staff record sentencing dates. These offenders should, therefore, be a random subset of those who were included in the analysis.
5. Because our measure of re-offending was having a subsequent court appearance where one or more offences were proven, it is important to allow sufficient time to elapse to observe this outcome. One year was considered to be the minimum time to allow an offender to commit a new offence, be apprehended and have their matter determined by a court.
6. The index offences that explicitly disqualified an offender from the comparison group were: all strictly indictable offences, offences under the *Firearms Act 1996*, offences under s23(1)(b), 23(2)(b), 25 or 25A of the *Drug Misuse and Trafficking Act 1985* and offences under several sections of the *Crimes Act 1900* (s35, s35A(1) [grievous bodily harm], s60 [assault police], s93B, s93C [riot and affray], sexual offences under Part 3, Division 10, child prostitution/pornography offences under Part 3, Division 15, Part 3, Division 15A and s578C(2A), and offences under s562AB(1) [stalking and intimidation].
7. Prior offences that explicitly disqualified an offender from the comparison group were: offences under s231(1), 233A and 233B of the *Customs Act 1901* [illegal importation], offences under s7, s36, s50, s50A(2), s51(1A), s51(2A), s51A, s51B, s51BB and s51D of the *Firearms Act 1996* [firearms offences], s26 – s31, s33, s61J, s61JA, s61K, s66A, s66B, s86, s93G, s93GA, s93H(2), s95 – s98 and s154D of the *Crimes Act 1900* and s23(1), s23(2), s24(1), s24(2), s25(1), s25(2), s25A and s26 – s28 of the *Drug Misuse and Trafficking Act 1985*.
8. This precluded problems with other recidivism studies where offenders are prosecuted for offences they committed prior to the index court appearance. Note that, for the purposes of analysing this outcome, no account was taken of time spent in custody during follow-up.
9. Note that the date of the re-offence was used here to ensure that it occurred after the index court appearance.
10. This more liberal cut-off for statistical significance was selected to capture any effect of variables that might have been weakly related to the outcome at a bivariate level but modified the effect of another variable on the outcome. No such effect modification was observed.
11. To be a confounder of the relationship between treatment and recidivism, the characteristic has to be related to both group membership and the outcome but not be an intervening variable between group membership and the outcome.
12. Frequency of offending is more typically modelled using poisson or negative binomial regression. However, very few offenders in either the treatment or control groups had two or more finalised court appearances within 12 months in this study. Longer follow-up periods could not be employed because offenders who were sentenced later in the cohort (i.e. in September 2007) only had 12 months follow-up. A binary outcome provided more stable parameter estimates in this instance. The weakness of modelling offending frequency in this way is that, because most offenders have zero subsequent offences, there is little to differentiate this analysis from the probability of committing any re-offence. There was insufficient statistical power to analyse offending frequency with non-recidivists removed.
13. Two comparison group members were selected (as opposed to one-to-one matching) to increase the statistical power of the analysis. Matching more than two comparison group members, on the other hand, would result in unacceptable data loss.
14. In actuality, this matching methodology selects fewer than five nearest neighbours in some cases where there are too few near neighbours. Instead, Stata v10 weights the control cases according to how many matches were assigned to each treatment case. Members of the control group who have four other control group members matched

to a treatment observation receive a weight of 0.2. Members of the control group who have three other control group members matched to a treatment observation receive a weight of 0.4. Members of the control group who have two other control group members matched to a treatment observation receive a weight of 0.6. Members of the control group who have one other control group member matched to a treatment observation receive a weight of 0.8. Members of the control group who are the only controls assessed to be a near match with a treatment observation receive a weight of 1. Members of the control group who match to two treatment offenders receive a match of 1.2 and so forth.

15. This more inclusive definition of Indigenous status was employed because there is a high degree of undercounting of Indigenous status on individual court records. This is because information bearing on Indigenous status is collected by the NSW Police Force when legal proceedings are commenced against alleged offenders and this information is then linked to the defendant's court record. The Indigenous status of alleged offenders is not collected if, for example, they were not proceeded against in person or if they were proceeded against for a traffic offence.
16. One Forum Sentencing participant was actually aged 17 and six were estimated to be aged older than 24 at the time their index appearance was finalised.
17. By 'unadjusted', the author refers to the estimated effect of the Forum Sentencing without taking into account any known differences in the characteristics of Forum Sentencing and comparison groups. The 'adjusted' effect, in contrast, refers to the estimated effect of Forum Sentencing after taking these differences into account.
18. Plea and legal representation were not considered for these analyses because there was no theoretical justification for their inclusion. Bail and prior prison experience could not be included in any of the models because there were too few observations within some of the cells to be included in multivariate regression models. Only one of the variables PRIORS or TIMESINCE could be included in the final models because the two variables were very highly correlated. The variable PRIORS was employed here because it appeared to provide a more robust measure of prior offending frequency. Prior to adjusting for confounding factors, offenders in the Forum Sentencing group were significantly more likely to re-offend within 12 months, more likely to re-offend two or more times within 12 months and re-offended more quickly during follow-up.

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APPENDIX

Table A1 compares the entire population of potential controls with the randomly selected sub-sample of 1,000 control offenders. The sub-sample generally had very similar characteristics to the total group of possible controls (within ± 1-2 percentage points for most categories). The only notable differences were that the sub-sample members were slightly more likely to be legally represented (57.6% vs 54.4%) and slightly more likely to commit more serious subsequent offences (56.0% vs 51.7%). This latter discrepancy would be accounted for by adjusting for confounding factors in the multivariate analyses.

The results of the analyses using the entire sample of controls are shown in Table A2. The results are generally consistent with those shown in Table 1 in the text, with the exception that the relationship between group membership and FREQUENCY was no longer statistically significant when the entire sample of controls was used. Given that the confidence intervals around the odds ratio estimates were much smaller when the entire population of controls was used, this suggests that the effect of Forum Sentencing on frequency of subsequent offending shown in Table 2 might be due to chance variation rather than participation in the program being causally related to an increase in offending frequency.

Table A1. Characteristics and outcomes for the total pool of possible controls (n=39,883) and the randomly selected subset of controls (n=1000)

		All controls N (%)	*Subset of controls N (%)*
Characteristic			
GENDER	(Male)	32254 (80.9)	790 (79.0)
AGEGROUP [a]	18-20 years	17886 (44.9)	455 (45.5)
	21-24 years	21997 (55.2)	545 (54.5)
INDIG	Indigenous	4004 (10.0)	110 (11.0)
	Non-Indigenous	29844 (74.8)	739 (73.9)
	Unknown	6035 (15.1)	151 (15.1)
MSO	Property/deception	4404 (11.0)	114 (11.4)
	Property damage/ public order	6110 (15.3)	144 (14.4)
	Driving	20051 (50.3)	500 (50.0)
	Other	9318 (23.4)	242 (24.2)
BAIL	(Yes)	38580 (96.7)	967 (96.7)
CONCUR	0	26612 (66.7)	664 (66.4)
	1	7544 (18.9)	179 (17.9)
	2	3447 (8.6)	86 (8.6)
	3+	2280 (5.7)	71 (7.1)
PRIORS	0	24952 (62.6)	619 (61.9)
	1	7227 (18.1)	186 (18.6)
	2	3290 (8.3)	90 (9.0)
	3-4	2772 (7.0)	59 (5.9)
	5+	1642 (4.1)	46 (4.6)
JUVENILE	(Yes)	6579 (16.5)	180 (18.0)
PRISON	(Yes)	1499 (3.8)	48 (4.8)
TIMESINCE	No priors	24952 (62.6)	619 (61.9)
	731+ days	4343 (10.9)	117 (11.7)
	366-730 days	3722 (9.3)	100 (10.0)
	181-365 days	2917 (7.3)	68 (6.8)
	180 days or less	3949 (9.9)	96 (9.6)
GPLEA	(Yes)	32299 (81.0)	817 (81.7)
LEGREP	(Yes)	21632 (54.4)	575 (57.6)
Outcome			
REOFFEND		6556 (16.4)	155 (15.5)
SURVIVAL	(free days for 25% of group to re-offend)	736	780
FREQUENCY	0	33327 (83.6)	845 (84.5)
	1	4996 (12.5)	121 (12.1)
	2+	1560 (3.9)	34 (3.4)
SERIOUSNESS [b]	Less serious	1974 (30.9)	43 (28.7)
	No change	1108 (17.4)	23 (15.3)
	More serious	3302 (51.7)	84 (56.0)

a *One participant in the Forum Sentencing group was actually aged 17 years at the time their index court matter was finalised and six offenders were aged older than 24 years when their matters were finalised. These offenders were retained in the sample for the purposes of this analysis.*

b *Only calculated for those who had re-offended during follow-up.*

Table A2. Unadjusted and adjusted regression models of each outcome on group membership using standard regression techniques with the total sample of controls

		REOFFEND (n=40,147)		*SURVIVAL (n=40,145)*		*FREQUENCY (n=40,147)*		*SERIOUSNESS (n=6,447)*	
		Unadj. OR (C.I.)	*Adj. OR (C.I.)*	*Unadj. HR (C.I.)*	*Adj. HR (C.I.)*	*Unadj. OR (C.I.)*	*Adj. OR (C.I.)*	*Unadj. OR (C.I.)*	*Adj. OR (C.I.)*
GROUP		1.6 (1.23-2.16)	1.2 (0.90-1.63)	1.5 (1.20-1.81)	1.1 (0.91-1.39)	2.0 (1.27-3.19)	1.5 (0.95-2.44)	1.3 (0.77-2.15)	1.0 (0.61-1.78)
GENDER			1.3 (1.17-1.37)		1.3 (1.24-1.40)		1.3 (1.08-1.45)		
AGEGROUP			0.7 (0.68-0.76)		0.7 (0.72-0.78)				
INDIG	Non-Indigenous		-		-		-		
	Indigenous		1.8 (1.70-2.00)		1.7 (1.59-1.77)		1.9 (1.65-2.14)		
	Indigenous unknown		0.2 (0.16-0.22)		0.2 (0.19-0.24)		-		
MSO [a]	Property/ deception		1.1 (1.01-1.15)		1.1 (1.00-1.10)		1.2 (1.10-1.36)		2.2 (1.93-2.41)
	Property damage/ public order		1.0 (0.96-1.07)		1.0 (0.98-1.06)		1.0 (0.93-1.15)		0.5 (0.48-0.60)
	Driving		1.0 (0.96-1.07)		0.9 (0.87-0.93)		0.8 (0.70-0.83)		0.6 (0.53-0.64)
CONCUR	0		-		-		-		
	1		1.1 (1.06-1.23)		1.1 (1.07-1.18)		1.3 (1.15-1.48)		
	2		1.3 (1.16-1.40)		1.2 (1.15-1.31)		1.5 (1.28-1.77)		
	3+		1.3 (1.14-1.41)		1.3 (1.20-1.38)		1.2 (1.00-1.44)		
PRIORS	0		-		-		-		
	1		1.6 (1.49-1.73)		1.5 (1.41-1.58)		2.1 (1.80-2.42)		
	2		2.0 (1.83-2.22)		1.7 (1.62-1.87)		2.4 (2.01-2.88)		
	3-4		2.7 (2.48-3.04)		2.4 (2.23-2.57)		3.6 (3.02-4.29)		
	5+		3.3 (2.93-3.77)		3.1 (2.85-3.37)		4.7 (3.82-5.67)		
JUVENILE			1.4 (1.30-1.52)		1.3 (1.26-1.40)		1.6 (1.40-1.82)		

a Rather than setting one offence category as the reference, each category was assessed against the average of all offence categories combined

OR = odds ratio, HR = hazard ratio, C.I. = confidence interval

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