A YEAR WITHOUT A CONVICTION

An Integrated Examination of Potential Mechanisms for Successful Reentry in High-Risk Violent Prisoners

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Some high-risk prisoners on parole "beat the odds": remaining in the community through their first year without incurring even minor reconvictions. What makes the difference? We investigated three potential mechanisms for postrelease survival—lower dynamic risk, greater readiness for parole, and earlier and longer parole oversight—in two samples: 120 men who had completed 8 to 12 months in an intensive treatment unit for high-risk prisoners, and 151 comparison prisoners who had received less or no treatment. Based on structural equation modeling, results indicated that treatment status (completer or comparison), and readiness for release each directly predicted when and for how long a prisoner would be on parole, which in turn predicted reconviction. Significant indirect pathways indicated that lower dynamic risk, better release readiness, and longer/earlier parole oversight all contributed to the lower rates of reconviction in high-risk prisoners, whether treated or not.

Keywords: parole; psychological treatment; high-risk; treatment readiness; dynamic risk

INTRODUCTION

In the first 12 months after their release, half of New Zealand's high-risk prisoners are reimprisoned for new offenses. Half of those do not even survive the first 100 days without committing an offense serious enough to return them to custody (Nadesu, 2007). So how is it that some do survive? This study examines putative mechanisms for avoiding reconviction altogether in the first 12 months after release for two samples of high-risk male prisoners: completers of an intensive psychological treatment program, and a similar sample who had less or no significant treatment prior to release. Three mechanisms are explored: lower

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pre-release dynamic risk for reconviction, greater readiness release, and type/length of parole.

CONCEPTUAL APPROACHES TO REENTRY SUCCESS

The problem of high rates of released prisoners returning to custody is familiar across the English-speaking world, attracting substantial attention from government, policy-makers, legislators, correctional workers, and others over many decades. A variety of strategies have been implemented in response, influenced by distinct ideas about the causes of prison returns. The first idea, deterrence theory, assumes that threatening people with punishment will discourage new offending. According to this view, stringent monitoring with the threat of return to prison for even minor violations of parole will deter those released from breaking rules that lead to return. Although popular, this approach is largely not supported by research evidence (Travis & Western, 2014), and is not directly tested here.

A second main approach is rehabilitative, based on the notion that criminals have relatively stable, but changeable individual characteristics that increase their propensity for criminal behavior. A prison sentence alone has no particular effect on these characteristics: variously called dynamic risk factors, or criminogenic needs. But if dynamic risk factors are reduced or ameliorated by interventions based on cognitive and behavioral strategies during the sentence, prisoners will be released at lower risk of new offenses than before (Aos, Miller, & Drake, 2006; Lipsey & Cullen, 2007; Wong & Gordon, 2013). The best-known articulation of this approach is embodied in the empirically based *Psychology of Criminal Conduct* (Bonta & Andrews, 2016), and referred to as the Risk-Need-Responsivity model. Major dynamic risk factors include antisocial temperamental features, peers and thought patterns; substance abuse; and poor family, employment, and leisure functioning. Following from this model, dynamic risk levels at release predict recidivism, whether as a consequence of treatment, or because the prisoner had fewer risk factors in the first place (Howard & Dixon, 2013; Wong & Gordon, 2006).

The third approach, also viewed as rehabilitative, is referred to as reentry, reintegration, or resettlement. According to this perspective, the primary reason people return to prison is not because they found the prospect insufficiently threatening, nor because they continued to be at risk of crime due to poor emotional regulation, ongoing drug use, criminal attitudes, criminal peers, and the like. Rather, they reentered the community without the basic necessities of life in place (Visher & Travis, 2011), such as adequate housing, health care, financial support, employment, and social support (Burnett, 2009; Griffiths, Dandurand, & Murdoch, 2007). The exact mechanisms involved are usually not specified, but the implication is that offenders may fall back into criminal behavior because they have few or no options for lawful survival. Long periods in prison and associated penalties (e.g., offender registration, residential and employment restrictions) may even increase barriers to establishing oneself in the community, making return to prison a rational choice (Braga, Piehl, & Hureau, 2009; Paternoster, 2010). This rather dismal perspective may be particularly relevant in the United States where very high rates of imprisonment and geographic inequalities have concentrated parolees in a relatively narrow range of deprived and crime-infested urban neighborhoods (Travis & Western, 2014; Visher & Travis, 2011). The reentry perspective suggests that the combination of making plans that prepare the prisoner for release followed by postrelease support makes the difference between conviction-free survival and

reconviction or reimprisonment (Duwe, 2013; Graffam & Shinkfield, 2012; Mears & Cochran, 2015; Veysey, Ostermann, & Lanterman, 2014). These portrayals of the difficulties of reentry contribute to our use of the term survival here to refer to the experiences of offenders who gain a foothold in the community on reentry, and remain there without any new convictions.

There is widespread anecdotal evidence of poorly prepared prisoners entering the community, and comprehensive reentry programs that include a community component have been subject to research (Braga et al., 2009; Duwe, 2012; Garland & Hass, 2015; Lattimore & Visher, 2013; Roman, Brooks, Lagerson, Chalfin, & Tereschenko, 2007; Taylor, 2013; J. A. Wilson & Davis, 2006; Zhang, Roberts, & Callanan, 2006). But there is limited empirical evidence regarding readiness levels or the quality of preparation itself at the point of release (Visher & Lattimore, 2007; Wolff, Shi, & Schumann, 2012). Research using a sample related to the current study found that lower readiness for release predicted reconviction in high-risk treated prisoners, even when static risk of reconviction was already taken into account (Polaschek, Kilgour, & Wilson, 2017). A series of studies of similar samples that measured the quality of release plans (e.g., accommodation, employment, social support) found that higher quality plans predicted improved recidivism outcomes (Dickson, Polaschek, & Casey, 2013; Willis & Grace, 2008, 2009, with child-sex offenders), and worked via the mechanism of improved experiences in the community (Dickson, Polaschek, & Wilson, 2017).

EVALUATIONS OF THE EFFECTS OF PAROLE

Along with dynamic risk and readiness at release, the third important variable examined in this study is parole: the process by which prisoners finish their sentences with a term of oversight in the community and various associated requirements (e.g., residential curfews, alcohol and drug treatment). There has been growing interest in establishing the effects of parole on recidivism, but there are several primary challenges to doing so.

The first problem to consider is that there are various types of parole release in use. For example, some prisoners are given sentences that must be served fully in custody, with no postrelease oversight (Petersilia, 2003). Others may have a mandatory period of parole after a fixed term in prison (Ostermann & Hyatt, 2016; Wan, Poynton, Doorn, & Weatherburn, 2014), while for others the timing and length of parole may be at the discretion of a parole board after prisoners have served some statutorily specified minimum proportion of their sentence. The type of parole granted to a prisoner is therefore often related, at least in part, to characteristics of the prisoner that are themselves predictive of recidivism. For example, those who "max out" whether voluntarily or because they are denied early release may be at higher risk of recidivism regardless of how their release is managed (Gottfredson, Mitchel-Herzfeld, & Flanagan, 1982), while those released early on discretion are likely to have completed programs in prison that may improve their release survival prospects. These associations thus create sample biases that need to be taken into account.

The second challenge is to factor in the prevailing policies and actual practices applied to those on parole. At best, probation officers are both "cops and counselors" (Kennealy, Skeem, Manchak, & Louden, 2012), but extant research suggests that parole officers with primarily a surveillance or law enforcement orientation to parole are likely to increase recidivism in supervisees (Paparozzi & Gendreau, 2005; Richards & Jones, 2004), while a

focus on a high quality, supportive relationship, human service, and discretion in processing parole violations may decrease recidivism (Bonta, Rugge, Scott, Bourgon, & Yessine, 2008; Skeem, Louden, Polaschek, & Camp, 2007).

Given that parole policies and practices may influence the detection, prosecution, and return to prison of those deemed to be in violation of them, a final consideration in evaluating the effects of parole is the outcome measures used. The use of parole violations alone as a recidivism outcome measure is problematic for this very reason; it can say more about the regime than the offender's success or otherwise as a law-abiding citizen (Petersilia, 2003). Relatedly, in jurisdictions where brief periods in custody prevail in managing high rates of parole violation, examination of other types of recidivism outcome requires statistical controls for the amount of time in custody for violations, as this is time that takes away from the opportunity to commit new, community-based offenses. In other words, parole policies create methodological challenges even with regard to the consistent measurement of outcomes (Ostermann, Salerno, & Hyatt, 2015).

Existing research varies in the extent to which it manages effectively these methodological issues. But the overall picture tends to suggest that release onto parole oversight predicts lower recidivism than no oversight, particularly while the supervision is ongoing (Ostermann, 2013; Vito, Higgins, & Tewksbury, 2017; Wan et al., 2014). This study builds on those findings by examining how in-prison treatment, prisoners' dynamic risk, and release readiness contribute to parole in predicting recidivism.

TREATMENT AND RELEASE READINESS FOR HIGH-RISK NEW ZEALAND PRISONERS

In New Zealand, high-risk offenders are identified using a static actuarial tool (Bakker, Riley, & O'Malley, 1999) as those who are estimated to be at least 70% likely to be reconvicted of an offense leading to reimprisonment in the following 5 years. High-risk prisoners are eligible for treatment in one of four intensive psychological treatment programs located in dedicated program units in four geographically disparate prisons, and providing primarily cognitive-behavioral assessment and treatment over 8 to 12 months. We refer to these units as High Risk Special Treatment Units (HRSTUs). The program's design is consistent with the Risk-Need-Responsivity model of offender rehabilitation (Bonta & Andrews, 2016). Prisoners spend 8 hr to 10 hr each week in a structured group with nine others and two program facilitators, working through a manualized program designed to address common dynamic risk factors (e.g., criminal attitudes, poor emotional regulation and self-control). Within the constraints of the usual prison rules and regulations, the unit environments are run according to principles that support change (Whitehead, 2014). Notably, New Zealand's indigenous Māori population is strikingly overrepresented among prisoners eligible to attend these programs. As a result, both the unit and the program include principles, practices, and customs that recognize that the majority of participants are non-European.

About two thirds of those who start the program complete it. Earlier evaluations found the program to be modestly effective in reducing recidivism (Kilgour & Polaschek, 2012; Polaschek, 2011) for program completers, with no concomitant increase in recidivism for those who did not complete it (see Polaschek & Kilgour, 2013, for more information about the program itself). Program completion is also associated with a significant reduction in dynamic risk of recidivism (Polaschek, Yesberg, Bell, Casey, & Dickson, 2016).

Release preparation is integrated into the tasks a prisoner is expected to complete while in the unit; the use of treatment resources to assist prisoners in overcoming personal hurdles to effective planning is hypothesized to increase program impact. Good plans cover housing, employment, prosocial support, and strategies for managing risky situations. The overall approach is similar to the pre-release phase of Operation Greenlight (J. A. Wilson & Davis, 2006).

Despite the availability of HRSTU treatment, the majority of high-risk prisoners do not attend one of these units. Reasons for not doing so include referral with insufficient time left on sentence, too short a sentence, unwillingness to be referred (e.g., wanting to keep job at current prison, wanting to remain close to family), and attendance at other programs such as drug and alcohol treatment. During the duration of this research project, formal assistance with release planning for these men varied from one-to-one planning with a Corrections staff member, to no assistance.

THE ROLE OF THE NEW ZEALAND PAROLE BOARD IN RELEASING HIGH-RISK PRISONERS

New Zealand has a mixture of mandatory and discretionary parole regimes. All prisoners in this study had been sentenced to at least 2 years' imprisonment, making them eligible for either type of release, with a minimum of at least 6 months of parole with conditions specified by the national parole board. These prisoners can apply for discretionary parole (i.e., release before the end of the imprisonment sentence) after one third of their sentence has been served. If the application is successful—typically only in the last third or so of the sentence—it results in a term of parole of 6 months plus the time that remains on the original prison sentence when parole is granted.

So, in contrast to most jurisdictions, if the parole board refuses early release or prisoners decide to "max out," they will still have a mandatory 6 months on parole after the expiration of their prison sentence. There are similar requirements for each type of parole; in both cases the parole board sets conditions for the parole license, and probation officers provide similar levels of contact and support. Current policy in parole supervision emphasizes a balance between consistent monitoring for compliance with parole conditions, and active help with reintegration. Therefore, officers have some discretion about responses to noncompliance (i.e., processing parole violations).

RESEARCH AIMS

The primary aim of this study was to test the longitudinal model depicted in Figure 1. Two key mechanisms are investigated in the initial part of the model: estimated dynamic risk of violence and crime, and the quality of preparation for release (readiness for release). Although dynamic risk at release and readiness for release appear on the same level in the model, the unidirectional arrow between the two indicates we theorize that progress on dynamic risk factors needs to occur before a prisoner can engage fully with developing a good release plan. Release planning requires that the offender recognize personal risk factors, take responsibility for them, and work co-operatively with others (e.g., staff, family) to develop resources to minimize them.

The model also incorporates both parole length and reconviction, shedding light on parole decision making, and on whether parole itself may be a risk-reducing intervention,

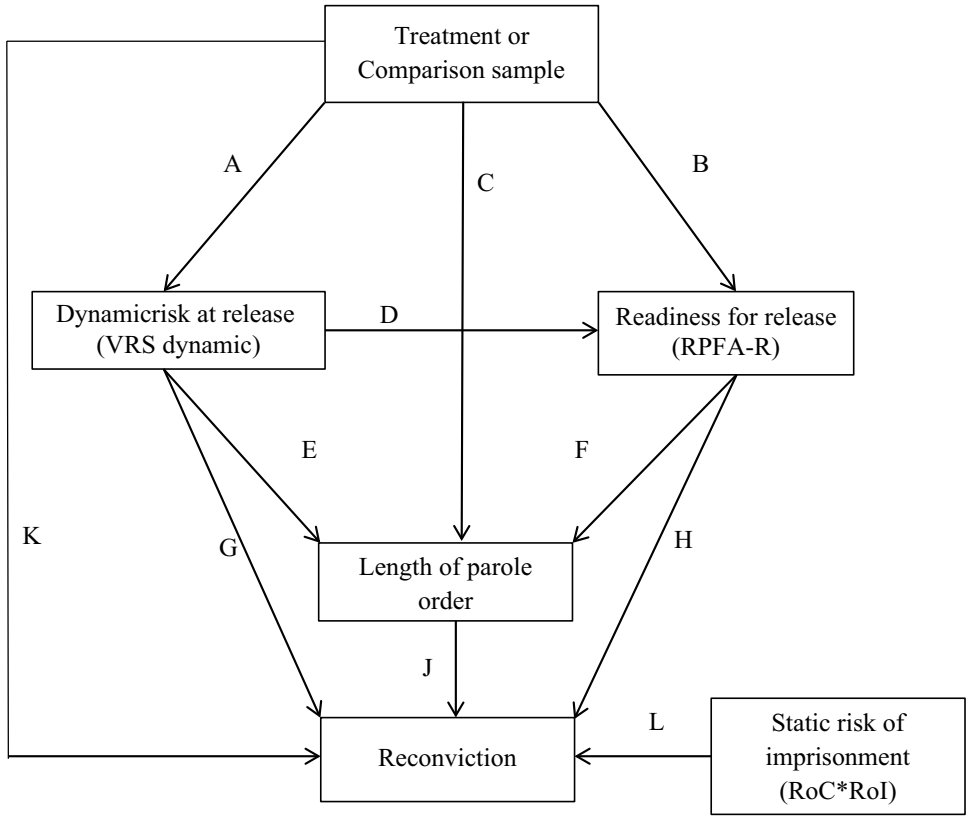

Figure 1: Baseline Model Examining Impact of Treatment, Violence Risk, Release Readiness, and Length of Parole Order, on Reconviction

Note. VRS = The Violence Risk Scale; RPFA-R = Release Proposal Feasibility Assessment–Revised.

when the other mechanisms are taken into account. No direct measures of the amount of support provided on parole were available, so parole length serves as a proxy variable for the amount of service. New Zealand's parole regime prevents parole type and length being examined together in the same model because they are too highly related. Instead, a second model was tested with parole type (early vs. end of sentence) substituted for parole length, to establish which variable is the more informative in understanding interrelationships between mechanisms and reconviction.

Our research questions were as follows: (a) because parole length and type covary, are the results similar for a model in which parole type is substituted for parole length? (b) how did dynamic risk and release readiness information relate to the parole board's decisions about type of parole; (c) what direct and indirect effects did intensive treatment completion have in the model, compared to less or no rehabilitative programming? Were the same mechanisms involved in reconviction for both samples? And finally, (d) what are the relative contributions of dynamic risk of reconviction, the quality of reentry preparation, and postrelease supervision (i.e., parole length) to the prediction of reconviction in the first 12 months following release on parole?

METHOD

SAMPLES

We compared and combined two samples in our analyses. The treatment sample was drawn from men who completed treatment in an HRSTU and had been released into the community for at least 12 months (n = 120). A further 151 men were included from among those who were eligible for referral but had not undertaken the HRSTU program prior to parole (the comparison sample).

Prisoners eligible for referral to one of the HRSTUs have at least a 70% risk of returning to prison in the 5 years following release (their RoC*RoI score, see below), are serving imprisonment sentences of at least 2 years, are over the age of 20, have a low-medium or minimum security rating, and have sufficient time left on their sentence to complete the program.

The comparison sample was recruited from men who were eligible for referral for an assessment at an HRSTU.[1] Comparisons were not necessarily "untreated." Seventy-seven percent reported in pre-release interviews that they had taken part in some form of treatment on their current prison sentence. Most frequently, they had been provided with individual psychological treatment (32% of the sample). Twenty-five percent completed a program at a specialized substance dependency treatment unit (variable in length), 18% had completed a medium intensity rehabilitation program (about 140 hr long), 10% had taken part in a short motivational program,[2] 15% spent time within a Māori Focus Unit, 9% in a Christian faith-based Unit, and 9% in a restorative justice program.

PROCEDURE

Prisoners were recruited individually between 2010 and 2013, by members of the research team through initial contacts made by prison staff. We identified potential participants each month with the assistance of the national parole board, Department of Corrections records, and notifications from the HRSTUs. A team of senior PhD students undertook most of the data collection. All were trained and supervised by a senior academic clinician with extensive experience in correctional psychology.

Potential participants were recruited just after a parole board appearance at which they had been advised of an imminent release date. They were informed of the study details, and if they provided written consent, they were then interviewed individually and completed several questionnaires. Usually within days of the interview, the participant was paroled, and his progress was then monitored in the community.[3]

MEASURES

Violence Risk Scale (VRS)

The VRS (Wong & Gordon, 2000) is a 26-item instrument; completed by a qualified and trained assessor using file notes, staff observational data, and information from interviews with the prisoner. Each item is scored on a 4-point scale from *absent, or present but unrelated to violence* (0) *to strongly present and/or related to violence* (3), depending on the item[4]; higher scores indicate higher risk. Of the 26 items, six comprise the static risk subscale: largely historical items (e.g., current age, age at first violent conviction, quality of early upbringing). The remaining 20 are dynamic: they may alter as a function of successful

program participation (e.g., impulsivity, criminal peers, substance use). Although the VRS was designed specifically to assess violence risk in violent offenders, its predictive ability with any type of offending in those with a history of violence has been demonstrated to be at least as good as for violence alone (Wong & Gordon, 2006). Only the 20 items comprising the dynamic scale are used in this study.

Release Proposal Feasibility Assessment–Revised (RPFA-R)

The RPFA-R (N. J. Wilson, 2011) is an 11-item staff-rated tool used to evaluate the quality of a prisoner's planned release circumstances, which we refer to here as "readiness for release." Items include employment, accommodation, previous parole noncompliance, anticipated community and personal support, whether there is a relapse/safety plan in place, whether former victims are likely to be encountered, expected exposure to destabilizing factors, ability to deal with stress, alcohol and drug abuse history, and financial circumstances. Items are rated on a scale from 0 to 2, with higher scores indicating poorer anticipated release circumstances. Items are summed to provide an RPFA-R total score, which has been found to predict recidivism (Polaschek et al., 2017).

Demographic, criminal history, and recidivism data

These data were obtained from New Zealand Department of Corrections electronic records which include access to the single nationalized database in which all criminal convictions are recorded. Static estimates of the current likelihood of convictions leading to future imprisonment were made using the RoC*RoI. The RoC*RoI (Bakker et al., 1999) is the Department of Corrections' tool for actuarial risk assessment, developed and cross-validated on two samples; each sample comprised 24,000 offenders. Expressed as a probability between 0 and 1, it is an offender's estimated risk of reconviction leading to reimprisonment over the following 5 years. The RoC*RoI score is generated by computer algorithm, based largely on criminal history variables. It requires no clinical judgment or manual calculations, and can be reestimated at any time, although once it is high, it changes very slowly, and not at all in response to convictions for offenses committed in prison. During development, the RoC*RoI demonstrated high predictive validity—an AUC of 0.76 (Bakker, O'Malley, & Riley, 1998)—and more recent analyses confirm its predictive validity over 3 years postrelease (Nadesu, 2007).

DATA PREPARATION

Scores on VRSs and RPFA-Rs were based on information collected immediately prior to the offender's release. Both VRSs and RPFA-Rs either (a) had recently been completed by therapy staff at the end of treatment and reviewed by senior staff as part of routine clinical practice or (b) were completed by research assistants based on the pre-release interview with the prisoner and file information, and similarly reviewed.

No interrater reliability data were available when the scales were scored during therapy; scoring differences were resolved by therapy staff through discussion to consensus. Of the pre-release VRSs completed by the research assistants, a second trained research assistant completed 40 to estimate interrater reliability. The second rater was blind to the first rater's

scores, independently reviewing and rescoring the information gathered from interviews and electronic offender records. Overall, interrater reliability was "almost perfect" for the static items (Landis & Koch, 1977): Cohen's kappa (κ) = 0.97, $p < .001$, and very good for the dynamic items: κ = 0.89, $p < .001$. Item κs ranged between 0.63 and 1.00. No interrater reliability data were collected for RPFA-Rs.

After all other data were collected, we extracted four recidivism indices: any parole violation, any reconviction (excluding violations of parole), reconviction for violence, and reconviction resulting in reimprisonment. We report all four in the descriptive statistics for this study, but the modeling analyses presented here are based only on which offenders were reconvicted of any new offense other than breaches of parole, based on the date of the actual offense that led to the conviction. We chose reconviction as the recidivism outcome (i.e., instead of parole violation, violent reconviction, or reconvictions leading to imprisonment) because it had a higher base rate than any of these other indices, and because its absence best captured what study participants indicated was their view of successfully desisting from offending over the first 12 months following release.[5]

PLANNED ANALYSES

After reporting descriptive results on the key variables for the samples, we explored the bivariate correlations between dynamic risk at release (VRS dynamic scale), readiness for release (RPFA-R), length of parole and reconviction, using SPSS 22 for Mac.

Next, we examined a series of path models to enable simultaneous testing of both the direct and indirect relationships between whether offenders were HRSTU-treated or not, dynamic risk, release readiness, and length of parole, on recidivism (see Figure 1). We conducted individual parameter testing by setting each parameter to zero and examining model fit. Pathways that did not worsen model fit compared to the baseline model were set to zero to identify the final, best-fitting model. We examined indirect effects with the Model INDIRECT command and report bias-corrected bootstrapped 95% confidence intervals. To assist in interpreting the role of the proxy parole length variable, we repeated testing of the baseline model substituting parole type for parole length. We also conducted multigroup analyses for treated and comparison offenders. Here, the baseline model allowed for each parameter to vary by group. Next, we constrained each parameter to be equal to determine whether it worsened model fit. If it did not, then the parameters were constrained to be equal for the final model.

Path models were tested using Mplus (Version 7.2; Muthén & Muthén, 1998-2012). The categorical outcome variable dictated the use of weighted least squares mean and variance adjusted estimator (WLSMV), which does not compute the conventional chi-square difference test because the differences do not follow a chi-square distribution. Instead the mean adjusted robust chi-square difference test (DIFFTEST) was used to calculate differences in the comparative fit of models (Muthén & Muthén, 1998-2012). The relative fit of each model was evaluated based on both the resulting chi-square statistic and other standard fit indices: the root mean square error of approximation (RMSEA; values < .08 indicate reasonable fit) and the Comparative Fit Index (CFI; values > .80 suggest adequate fit; Browne & Cudeck, 1993). Although we examined absolute indices of fit, our primary interest was based on relative fit, parsimony, and variance explained.

TABLE 1: Means and Standard Deviations (or Percentages) and Statistical Comparisons for Sample Descriptors

Sample descriptor variables	Combined (n = 271), M (SD)	Treatment (n = 120), M (SD)	Comparison (n = 151), M (SD)	t (p)	d
Age first conviction	16.1 (8.1)	16.0 (2.2)	16.2 (1.6)	0.71 (.47)	0.10
Age first violent conviction[a]	18.8 (3.7)	18.8 (3.9)	18.7 (3.5)	0.16 (.87)	0.03
Number previous convictions	69.9 (52.3)	69.80 (55.0)	70.0 (50.2)	0.04 (.97)	0.003
Number previous violent convictions	4.8 (4.3)	4.8 (4.1)	4.8 (4.5)	0.14 (.87)	0.00
Static imprisonment risk (RoC*RoI)	0.74 (11)	0.74 (0.13)	0.74 (0.09)	0.41 (.69)	0.00
Prison sentence given (days)	1402 (945)	1578 (958)	1262 (914)	2.80 (.006)	0.34
Days served in prison	1217 (839)	1271 (799)	1173 (869)	0.95 (.34)	0.12
Age at parole	31.4 (8.1)	32.1 (7.9)	30.8 (8.3)	1.40 (.17)	0.16
Dynamic risk of violence (VRS dynamic)	39.8 (7.1)	37.6 (6.8)	41.6 (6.9)	4.80 (.001)	0.59
Readiness for release (RPFA-R)	13.1 (3.9)	12.4 (4.1)	13.6 (3.7)	2.60 (.01)	0.31
Parole length (days)[b]	328 (214)	413 (238)	260 (165)	6.00 (.001)	0.75
	Combined (n = 271), %	Treatment (n = 120), %	Comparison (n = 151), %	χ^2(p)	Cramer's V/Φ
Ethnicity[c]					
NZ Māori	67	66	67	7.9 (.72)	0.17
Pasifika[d]	5	5	5		
NZ European/Pākehā	28	29	26		
Other	1	0	1		
Released before end of sentence	46	82	32	66.9 (.001)	0.50

Note. VRS = The Violence Risk Scale; RPFA-R = Release Proposal Feasibility Assessment–Revised.
[a]For those with violent convictions: n = 112 (93%) treatment sample, n = 127 (84%) comparison sample. [b]Transformed variable used in all analyses. Untransformed means are reported here for interpretability. [c]Total exceeds 100 due to rounding. [d]Including those identifying as Samoan, Tongan, Fijian, or Cook Island Māori.

RESULTS

DESCRIPTIVE DATA

Table 1 contains sample descriptive data. Because sample membership was nonrandom, we thoroughly explored potential differences between the two samples on variables that preceded the possible effects of treatment and that could be correlated with reconviction (e.g., criminal history, age). Referring to Table 1, differences were all nonsignificant except for the number of days that the prisoners were sentenced to spend in prison (i.e., if they served their full sentence). The number of days was significantly longer for the treated sample, relative to the comparison sample. However, length of sentence given was not correlated with reconviction.

The remaining four variables in Table 1 on which the two samples differed were dynamic risk for violence, readiness for release, length of parole granted, and parole type (i.e., early release vs. end of sentence). This is the pattern seen in Table 1: The treatment sample had significantly lower dynamic risk scores for violence (VRS dynamic) at release with a medium effect size, and better readiness for release (i.e., lower scores on the RPFA-R); a small effect. The treatment sample was given longer parole periods consistent with the significantly higher likelihood that they would be released prior to the end of their sentence.

TABLE 2: Percentage Reconvicted Within 12 Months of Release From Prison

Type of reconviction	Combined sample	Treatment	Comparison	χ^2	Φ	95% CI (Φ)
Parole violation	42.8	34.2	49.7	6.56[a]	0.16	[.03, .28]
Any[b]	60.5	54.2	65.6	3.63[c]	0.12	[.01, .24]
Violent	19.6	14.2	23.8	3.98[d]	0.12	[.01, .23]
Reimprisonment	42.1	31.7	50.3	9.56[e]	0.19	[.06, .31]

Note. CI = confidence interval.
[a]p = .010. [b]Excludes parole violations; 70% of the sample were reconvicted for any new offense when parole violations are included as the first reconviction. [c]p = .057. [d]p = .046. [e]p = .002.

Both differences—the length of parole order given and the proportion released early—were large effect sizes. On average, treatment sample men were on parole for more than a year, whereas the comparison sample averaged about 10 months.

By conventional standards, the treatment program "worked" (see Table 2): in the first 12 months following release, significantly fewer treatment sample members were reconvicted for violence, or were reimprisoned as a result of new convictions. There was a similar effect size for any reconviction, although it did not reach conventional significance. In addition to showing consistent effects in favor of the treatment sample, Table 2 illustrates why the base rate of reconviction in these high-risk samples makes a period as short as 12 months suitable for recidivism analyses.

Next, we calculated Pearson's correlations to describe the bivariate relationships between the variables to be modeled. Estimated violence risk based on dynamic factors (VRS dynamic), level of release preparedness (RPFA-R), and length of parole demonstrated medium to large correlations with each other, for both treatment and comparison samples. As expected, the RoC*RoI emerged as an important covariate of reconviction. However, VRS dynamic and RPFA-R scores showed weak and, especially for the VRS, mostly non-significant correlations with both the RoC*RoI and with reconviction. We examined whether correlation coefficients in Table 3 were significantly different for the two samples, using a Fisher's Z test. No differences were statistically significant.

More than half of the combined sample was released at the end of their sentences, and therefore had a parole length of 6 months. For all subsequent analyses, parole length was transformed, by recoding into four categories (1 = 6 months or less, 2 = 6 to 9 months, 3 = 9 to 12 months, 4 = more than 12 months).

LONGITUDINAL STRUCTURAL MODELS OF RECONVICTION

Combined sample analyses

The baseline model estimating all pathways in Figure 1 accounted for 24% of the variance in reconviction (χ^2 = 14.56, df = 3, $p < .01$; CFI = .92, RMSEA = .12). Individual parameter testing of this model—systematically reestimating the model with one pathway at a time set to zero—found that all but four pathways worsened model fit. The significant pathways were as follows: treatment status to dynamic risk (Path A; $\Delta\chi^2 = 23.0$, $p < .001$), treatment status to parole length (Path C; $\Delta\chi^2 = 32.2$, $p < .001$), dynamic risk to release readiness (Path D; $\Delta\chi^2 = 45.9$, $p < .001$), dynamic risk to parole length (Path E; $\Delta\chi^2 = 4.5$, $p \leq .001$), release readiness to parole length (Path F; $\Delta\chi^2 = 11.9$, $p < .001$), parole length to

TABLE 3: Pearson Correlations for Combined, Treatment, and Comparison Samples, for Predictors and Recidivism

Predictor variables	VRS dynamic	RPFA-R	Length of parole	RoC*RoI	Reconviction
RPFA-R	.55**				
Treatment	.54**				
Comparison	.56**				
Length of parole	–.35**	–.33**			
Treatment	–.34**	–.27**			
Comparison	–.23**	–.35**			
RoC*RoI	.11	.13*	–.16**		
Treatment	.13	.15	–.13		
Comparison	.13	.13	–.25**		
Reconviction	.05	.13*	–.28**	.19**	
Treatment	.10	.17*	–.29**	.22**	
Comparison	.02	.11	–.22**	.17*	
Treatment status	.28**	.15**	–.45**	.03	.17†

Note. VRS = The Violence Risk Scale; RPFA-R = Release Proposal Feasibility Assessment–Revised.
†$p = .057$. *$p \leq .05$. **$p \leq .01$.

reconviction (Path J; $\Delta\chi^2 = 21.2$, $p < .001$), and RoC*RoI to reconviction (Path L; $\Delta\chi^2 = 8.9$, $p = .003$). The revised model—with the four nonsignificant pathways removed—accounted for the same amount of variance in reconviction as the original model and was equivalent in fit ($\chi^2 = 19.88$, $df = 7$, $p < .001$; $\Delta\chi^2 = 9.0$; $p = .06$; CFI = .91, RMSEA = .08, $r^2 = .20$). The four pathways that did not alter fit when set to zero were the following: from treatment status to release readiness (Path B; $\Delta\chi^2 = 1.00$, $p = .31$), from dynamic risk to reconviction (Path G; $\Delta\chi^2 = 3.2$, $p = .07$), from release readiness to reconviction (Path H; $\Delta\chi^2 = 2.03$, $p = .15$), and from treatment status to reconviction (Path K; $\Delta\chi^2 = 1.11$, $p = .29$).

Figure 2 illustrates this best-fitting model for predicting reconviction. It shows that although removing the pathway between dynamic risk for violence and reconviction significantly reduced model fit in the previous step, this pathway was not significant in the revised model: indicated by the broken line ($p = .07$). All other direct pathways remained significant (all ps $< .01$). So, whether or not an offender attended and completed HRSTU treatment was significantly associated with dynamic risk for violence, but not readiness for release, when all the other relationships were considered. Treatment status also retained a significant direct relationship with parole length independent of its relationship to dynamic risk. Parole length was a strong predictor of recidivism and is the only variable that directly predicted reconviction, other than the RoC*RoI, which, as anticipated, retained a strong independent relationship to reconviction.

Next, we examined indirect pathways based on the best-fitting model (Figure 2), allowing us to investigate whether specific variables mediate the relationship between treatment status and reconviction. Table 4 lays out the results of these analyses. It reveals that all but two of these indirect pathways were significant, with the remaining two approaching conventional significance levels (both ps $< .10$). Taken together, the findings suggest that the best way to understand differences in reconviction rates between treated and comparison offenders is through the effects of treatment on intermediate variables that are expected to be better in treated men. Treatment completers have longer parole periods because they are more likely to be released early. Through early release, treatment exerts a significant

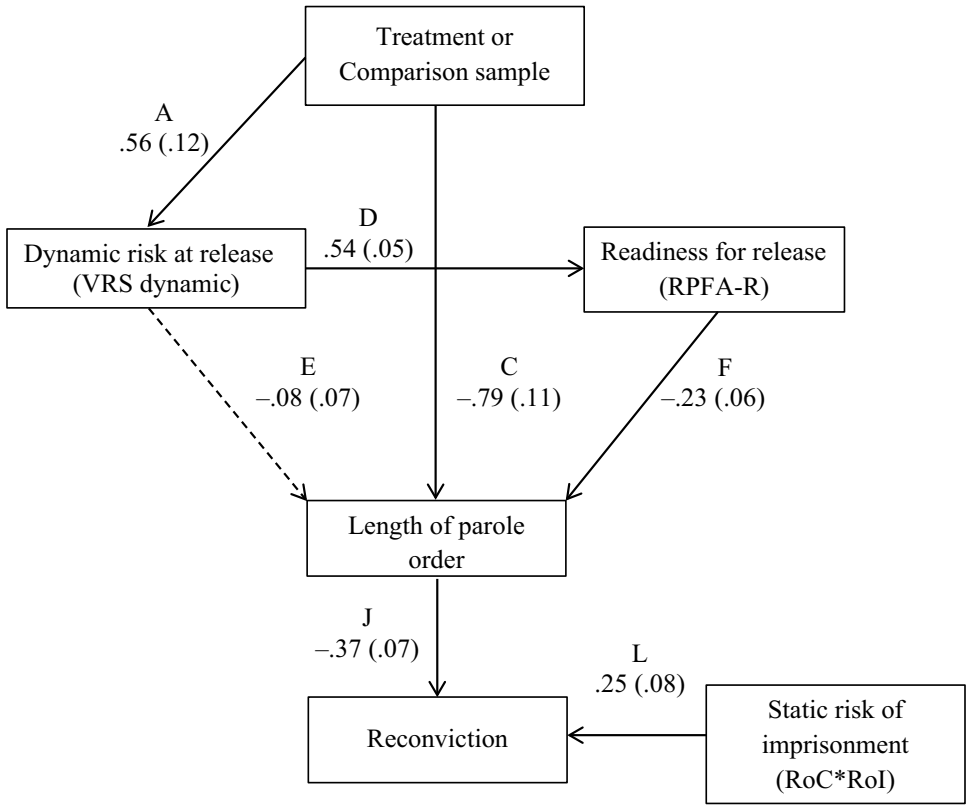

Figure 2: Standardized Coefficients (and Standard Errors) for the Best-Fitting Model for Examining Relationships Between HRSTU Treatment, Dynamic Violence Risk, Release Readiness, Length of Parole, Static Imprisonment Risk and Any New Conviction

Note. Treatment status (i.e., Treatment or comparison sample) was coded 1 = HRSTU treatment, 2 = Comparison. HRSTU = High Risk Special Treatment Unit; VRS = The Violence Risk Scale; RPFA-R = Release Proposal Feasibility Assessment–Revised.

indirect effect on reconviction. However, both dynamic risk and release readiness play a role here too; there is a significant indirect effect such that treated men have lower dynamic risk which in turn is associated with better readiness for release, leading to longer parole length and from there to lower reconviction. This pathway supports the conclusion that although dynamic risk for violence and readiness for release do not have their own direct relationships to reconviction, they instead operate to make early release more likely, and early release in turn, through its effect on parole length, reduces reconviction.

But the length of parole given, rather than early release, is included in the baseline model in Figure 1. To clarify the role of early parole compared to parole length, a second series of path models were examined. The only change from the model in Figure 1 was the substitution of a dichotomous variable—type of parole (0 = end of sentence, 1 = before end of sentence)—instead of length of parole. The results were similar overall. The baseline model estimating all pathways (as in Figure 1) accounted for a similar amount of variance (22%) and was significant, with similar fit indices ($\chi^2 = 8.97$, $df = 3$, $p = .03$; CFI = .91, RMSEA = .09). The same direct pathways made significant or nonsignificant contributions,

TABLE 4: Standardized Coefficients and Standard Errors for Indirect Pathways Tested in Best-Fitting Model for Reconviction (Figure 2)

Indirect pathway	β	*SE*	*p*	95% CI
Treatment status → parole length → reconviction	.29	.07	<.01	[0.14, 0.44]
Release readiness → parole length → reconviction	.08	.03	<.01	[0.02, 0.15]
Treatment status → dynamic risk → release readiness → parole length	–.07	.03	<.01	[–0.12, –0.02]
Treatment status → dynamic risk → release readiness → parole length → reconviction	.03	.01	.022	[0.001, 0.05]

Note. Bias-corrected bootstrapped 95% confidence intervals are reported. CI = confidence interval.

respectively, to the fit. However, none of the indirect pathways were significant. Hence, while parole length mediated the relationship between various factors to reconviction in the earlier models, type of parole did not. This difference suggests that parole length provides a more sensitive and informative measure of the interrelationships between the proposed mechanisms than does the type of decision made by the parole board.

Analyses by treatment status

We conducted a series of multiple-group analyses on the revised model in Figure 2, to determine if there were different pathways to reconviction for men from the treatment sample relative to the comparison sample. The baseline model, with all of the pathways for both groups estimated, accounted for 29.8% of the variance for the treatment group and 16.5% for the comparison group ($\chi^2 = 11.73$, $df = 4$, $p = .02$; CFI = .94, RMSEA = .12). There were no noteworthy differences in fit in the alternative models, which sequentially constrained one pathway at a time to equality for both treated and comparison men. Thus, consistent with the earlier bivariate correlations (Table 3), there were no significant differences in the relevant mechanisms or how they interacted for treatment versus comparison samples.

DISCUSSION

How do high-risk offenders survive their first year of reentry without reconviction? Our first aim was to evaluate the relative contributions of three possible mechanisms in predicting who will remain free of reconviction during this period. Overall, we found that treatment status, dynamic risk, and release readiness operated interactively through parole length to determine reconviction. Longer parole appeared to protect these high-risk offenders from reconviction. We first discuss the top part of the model—the findings in relation to parole length (or parole type) as an outcome (Paths A to F)—and then examine the whole model (Paths A to L) as it predicts reconviction.

PAROLE LENGTH AND TYPE: EVALUATING PREDICTORS OF PAROLE BOARD DECISIONS

We found similar direct relationships in the models for parole length and parole type: our first research question. This result enables us to comment on the determinants of both aspects of parole board decisions together. Addressing our second research question, dynamic violence risk and readiness for release were each univariate predictors of parole length and type (Table 2). But in Figure 2, release readiness was directly and independently

related to both early parole and parole length decisions, and it mediated the relationship between dynamic risk and parole length/type.

This result was particularly interesting because when they evaluate prisoners for release, the parole board is not provided with scores on the instruments used in this study; instead they are given a selection of the qualitative information also used to make the study's ratings. The current findings suggest that board members are attending to relevant information in making decisions about parole, despite the considerable challenges to doing so (Gobeil & Serin, 2010; Mooney & Daffern, 2014). Notably, it appears they are placing a premium on the quality of release preparation, as arguably they should.

EFFECTS OF INTENSIVE PSYCHOLOGICAL TREATMENT

Our third research question required that we compare the results for the intensively treated with the less/untreated comparison sample. As we noted earlier, Table 2 shows that by the standards of a quasi-experimental recidivism outcome study, the HRSTU program works, especially when one considers that some of the comparison sample also undertook risk-reducing interventions: effect sizes for the recidivism of treatment versus comparison men were in the range of .12 to .19, depending on the outcome considered.

Turning now to the structural equation model results (Figure 2), treatment status maintained a strong direct relationship with dynamic risk. HRSTU-treated men obtained lower dynamic risk scores compared to the other sample, when both were assessed at the point of release (Table 1). Our previous research has found that HRSTU completers' VRS dynamic scores are significantly higher prior to treatment—similar to those of the comparison sample at release—but decline over the course of treatment (Polaschek et al., 2016).

In fact, the overall pattern in this top portion of the model (Paths A, C, D, and F) suggests partial mediation: treatment status had a significant direct relationship to parole length even after accounting for the indirect pathways through dynamic risk for violence and release readiness. This direct pathway suggests that there remain variables that distinguish treatment and comparison men that have not been captured in this analysis: additional information that the parole board may be factoring into their decision-making process. One possibility is information about the current level of engagement in change on dynamic risk factors. Previous research on data from this project has found that HRSTU completers are also more engaged in change on dynamic risk factors than comparison men: the latter on average are only contemplating change at the point of release. But the mean stage of change score for treatment men is preparation (i.e., they have been rated as already exhibiting potentially risk-reducing changes in behavior when they appear to the parole board; Polaschek et al., 2016). The board may pick up this difference. It may even be evident in how the prisoner interacts and talks about his progress and release plans, when he appears before them.

OVERALL PREDICTION OF RECONVICTION

Our final research question reviews the model in its entirety (Figure 2). Of the direct pathways postulated in Figure 1, four were found to be nonsignificant, and three of these four (G, H, & K) were pathways to reconviction: from dynamic violence risk, release readiness, and treatment status, respectively. Treatment status and release readiness (for treated offenders only) were significant univariate correlates of reconviction (see Table 3), but they failed to maintain independent predictive status in Figure 2. These results support the importance of

multivariate analyses in treatment outcome evaluations. The inclusion of relevant intervening variables provides a considerably more informative picture of how high-risk prisoners—treated and less treated—may avoid reconviction. For example, although previous research has found release readiness scores were predictive of reconviction for HRSTU completers (Polaschek et al., 2017), this is the first study to demonstrate that this relationship is mediated by variables more proximate to reconviction (i.e., parole length).

The overall results have one other important implication for the dynamic risk scores. This study found the VRS dynamic items scale was not significantly correlated with reconviction when considered on its own, in contrast to previous findings with Canadian prisoners (Lewis, Olver, & Wong, 2013; Wong & Gordon, 2006). Typically, this finding would be interpreted as indicating that the measure is not valid in this context and should be discarded. The multivariate analyses used here show that this would be an erroneous conclusion. The VRS's role in the indirect pathways suggests that it is an important factor in both parole board decisions about parole length, and in reconviction. The time elapsed between VRS scoring at release and reconviction (or not), coupled with the positive effects of longer parole may be responsible for the lack of direct relationship between the VRS dynamic scores and reconviction. This contention fits with other recent analyses showing that the more proximal a risk measurement is to reconviction, the stronger its predictive validity (Scanlan, 2015). For more distal assessments to be predictive, there must be no significant changes in the assessed variables subsequent to the assessment, or if there are, such changes must preserve the rank ordering of participants. Earlier research with a small sample of HRSTU completers showed that posttreatment change did not necessarily conform to these assumptions (Yesberg & Polaschek, 2014).

In fact, all three possible mechanisms—dynamic risk for violence, readiness for release, and length of parole—have a role in explaining the relationship between treatment status and reconviction. Almost all indirect pathways tested were significant, including the longest one, from treatment status through dynamic violence risk, release readiness, and parole length to reconviction. These results suggest that there are meaningful differences in HRSTU-treatment completers at every point in the model.

As we noted above, we did examine the model with parole type substituted for parole length and found the overall result was quite similar in regard to which direct relationships remained significant. However, the resulting loss of significant indirect relationships suggests the value of retaining the less parsimonious model that includes parole length, to acknowledge that it provides a more nuanced view of the links between the mechanisms and recidivism. For example, it serves as a reminder that it is probably not simply that "maxing out" versus any early release accounts for the relationship between the modeled variables and recidivism.

The strength and direction of the relationship between parole length (or type of parole) and recidivism argue strongly for more detailed future investigations into how parole may prevent recidivism, despite the challenges noted earlier in disentangling decision making about parole from parole itself, and in identifying which elements of parole are most likely to be responsible for any benefits.

Finally, there were no differences found in pathway fit by sample in the multigroup analyses, indicating that relationships between variables were similar regardless of treatment status. Although statistical power may have limited these analyses, on the face of it, there is no evidence that completing HRSTU treatment might interact in some unique way

with parole length in protecting against recidivism. Again, this finding is consistent with previous research showing that both treatment and comparison samples evince similar amounts of dynamic factor-related change while on parole; the treatment sample starts parole at lower risk due to changes made in treatment (Polaschek et al., 2016), but then continues to change in the community at a similar rate to the comparison sample (Polaschek & Yesberg, 2017). The failure to find between-sample differences supports the view that similar processes account for survival in both treatment completers and comparison prisoners, although of course much more investigation of this contention is needed. However, it might be argued from the pattern of findings to date that a similar, but more cost-effective result could be achieved by diverting HRSTU resources, and simply releasing all offenders earlier onto a longer period of parole. This is an interesting idea, but one that is unlikely to be adopted. It would rightly be difficult to persuade a parole board to release earlier men they currently retain through to the ends of their sentences, because these men are likely to be at higher dynamic risk of reconviction, and in possession of poorer release plans than those they do release early. Even HRSTU graduates who are held in prison for more than 6 months after the program show this pattern of being at higher risk straight after the program than those who are released immediately (Polaschek, 2015). Even when those retained to the end of their prison sentence are let out, their rates of parole failure in the first six months are significantly higher, as we have seen. Therefore, it seems likely that there are key changes that need to be made in prison, before the process of parole becomes a sufficiently safe one for the community that receives these parolees.

LIMITATIONS AND CONCLUSIONS

This study has several important limitations. First, it does not directly investigate change. Therefore, although we have referred to release readiness and dynamic violence risk as plausible mechanisms that make desistance more likely, we have not demonstrated here that they are changeable mechanisms (Kroner & Yessine, 2013). Our approach is consistent with preliminary steps for identifying mechanisms in other fields such as public health. But here, just as has happened in those fields (Galea, Riddle, & Kaplan, 2010), we acknowledge the importance of extending this type of preliminary research to demonstrating changeability.

Second, the design was quasi-experimental. Although the two samples were more similar than different on those variables that could be compared, unmeasured important preexisting differences between men who "volunteer" to attend the HRSTU programs and those who take some other route to release may be hidden by the design. These results therefore require replication with other programs and jurisdictions. However, the most often cited concern about quasi-experimental designs—that the two groups differ on motivation to change—can be partly addressed. Elsewhere we have shown that the level of engagement in change for the HRSTU sample prior to treatment was equivalent to the comparison sample at release. Both samples were primarily only contemplating change at these respective points (as measured on the VRS stage of change scale; see Polaschek et al., 2016, for details). Furthermore, although the treatment sample attended the unit after providing informed consent, it was not uncommon for the parole board to tell them that they would not be getting early release unless they did attend. Lastly, most men in the comparison group consented to undertake a variety of less substantial treatments, suggesting that a number of them had some motivation to change. In short, the limited evidence available does not support the

idea that the treatment sample was significantly different in engagement in change or motivation for change prior to attending an HRSTU.

Third, parole length covaries with early release. Being granted early release may simply reflect parole board recognition of the progress an offender has made whereas length may be a proxy for a variety of processes associated with oversight in the community that we have not yet investigated (e.g., more helpful support from probation officer, more participation in postrelease treatment). Further investigations should include additional variables that could cover both (a) the actual information used by the parole board in reaching its decisions and (b) the myriad postdecision factors that may influence longer term outcomes. Our model accounted for about a quarter of the variance, which although strong, suggests that other factors are also at play in determining reconviction. Promising postrelease candidate variables include the quality of the relationship with the probation officer (Skeem et al., 2007), relevant characteristics of the family or immediate social support (Bahr, Harris, Fisher, & Harker Armstrong, 2010) and of the neighborhood (Ostermann & Hyatt, 2016), and dynamic characteristics of offenders themselves, such as their ongoing attitudes to desistance, abstinence from drug use, and involvement in enjoyable, positive activities (Bahr et al., 2010).

To reduce complexity, we looked only at one recidivism outcome in this study, which is not the recommended practice (Lösel, 2001). We chose reconviction for any new criminal behavior and excluded violations of parole because we thought this definition was closest to the way offenders may think about complete desistance. However, predictors of other recidivism outcomes would also be worthy of examination.

This research raises the possibility that interventions that help offenders prepare for parole should be routinely available to high-risk prisoners, not simply those who are preparing for early release, as was the case until recently in New Zealand. It also suggests that longer parole may be a key tool in reducing recidivism for high-risk offenders. More detailed research on how longer parole works and with whom is now highly desirable.

The findings of this study also support the contention that treatment evaluation designs need to factor in the downstream consequences of program involvement (e.g., early parole, longer parole) to understand recidivism outcomes. In our view, the failure to consider the role of posttreatment factors in the relationship between custodial program attendance and recidivism may in no small part account for weak or nonexistent links between in-program change and recidivism (Serin, Lloyd, Helmus, Derkzen, & Luong, 2013). But just as importantly, multivariate research on the impact of treatment is needed to more completely understand how treatment experiences translate into reentry and posttreatment life.

In summary, the effects of treatment, and the processes involved in successful reentry and desistance are complex to investigate. To date, very few studies in correctional program evaluation have adopted approaches with the potential to shed light on how treatment works, and how newly released prisoners survive in the community. The call for greater use of more varied multivariate modeling techniques in our field has been made (Helmus & Babchishin, 2017; Meehan & Stuart, 2007; Walters, 2007), but progress has been slow. The importance of investigations that use these approaches, for everyone from program designers to judges and policy-makers, will hopefully serve as a stimulus for more methodologically sophisticated future research.

NOTES

1. See Introduction for typical reasons for why they were not referred. Although they were eligible for referral "on paper" some declined to be referred, while others informed us they were never advised about the program.

2. The effectiveness of individual psychological treatment is currently unknown. Department of Corrections Annual Reports show that the next three types of programs—substance dependency, medium intensity rehabilitation, and short motivational interventions (all provided by nonpsychologists)—yielded absolute differences in reimprisonment rates compared to untreated offenders of between 0% and 7% during the timespan of this study (see http://www.corrections.govt.nz/resources/annual-reports5.html)

3. The design is thus quasi-experimental, using statistical methods to control for differences between the two samples. Random allocation of high-risk violent offenders to an untreated or less treated condition after they consent to more effective treatment is never likely to be ethically acceptable in this jurisdiction, and even were it possible, subsequent selective attrition within the intensive treatment condition could still be expected to result in nonequivalent groups (see for example, Marques, Wiederanders, Day, Nelson, & van Ommeren, 2005).

4. Some items are scored highly simply because they are characteristic of the offender (e.g., impulsivity), but others that may be strongly characteristic, require a functional link to violence to be scored highly (e.g., alcohol use).

5. Initially, we examined whether we could control for any expected differences between the two samples using propensity scores. However, the resulting regression equation using these and other similar demographic and criminal history variables was nonsignificant: reflecting statistical equivalence.

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