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Report 3

Factors associated with EQUIPS program participation and completion for Aboriginal offenders in custody and in the community

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Scope and Summary

This report is the third in a series of reports produced by the Matilda Centre for Research in Mental Health and Substance Use (University of Sydney) to examine implementation processes associated with the Explore, Question, Understand, Investigate, Practice, Succeed (EQUIPS) programs run by Corrective Services NSW (CSNSW). This report examines participation rates, completion rates and factors associated with participation in and completion of EQUIPS programs amongst Aboriginal offenders in custody and the community between 2015-2018 (inclusive), and, in some instances, how they may differ from their non-Aboriginal counterparts. The findings of this report are subject to finalisation and remain unpublished to date. The report is intended for internal review at this stage.

The results section provides summaries of the findings pertaining to each aim (see pages 16, 20-21 and 32). Key findings of this report are listed below.

- There were no significant differences between participation rates for Aboriginal offenders and non-Aboriginal offenders via the custodial referral pathway (39% vs. 40%, respectively). However, Aboriginal offenders had significantly lower participation rates compared to non-Aboriginal offenders when referred through the community pathway (41% vs. 44%, respectively).
- Among offenders who started EQUIPS programs, Aboriginal offenders had significantly lower completion rates than non-Aboriginal offenders when referred via the custodial pathway (64% vs 72%, respectively) and via the community pathway (53% vs. 60%).
- **Custody:** Among Aboriginal offenders, a variety of factors were positively associated with participation in EQUIPS programs via the custodial pathway, including higher financial needs (LSI-R), higher alcohol and drug needs (LSI-R), being employed, undergoing education at the time of referral and having parole attached to their sentence. Being male, being employed at the time of referral and having lower family/marital needs (LSI-R) were positively associated with completion of EQUIPS programs among Aboriginal offenders referred in custody.
- **Community:** Factors that were positively associated with participation among Aboriginal offenders referred via the community pathway included being male, lower emotional/personal scores (LSI-R), lower attitude/orientation scores (LSI-R), less prior EQUIPS referrals and more time between referral and sentence end date. Factors positively associated with completion among Aboriginal offenders via the community pathway included older age, being male, lower criminal history scores (LSI-R) and reduced time previously spent in prison. Likelihood of participating in and completing EQUIPS programs reduced the more remote the Aboriginal offenders living circumstances were.
- Having at least two or more Aboriginal offenders in a program group increased the likelihood of an Aboriginal offender completing a program by 94%.

Background

Since 2015, the EQUIPS suite of programs, described in detail in Report One and Two, has been a key strategy within CSNSW to reduce rates of recidivism. The EQUIPS suite of programs was developed by CSNSW as a form of correctional intervention for offender rehabilitation in both custodial and community settings (Juarez & Howard, 2018). These programs were developed with reference to the Risk-Needs-Responsivity (RNR) model, with primary aims of promoting prosocial behaviour and teaching practical strategies for reducing antisocial behaviour.¹ Within the RNR model, offender treatment programs try to address offenders' criminogenic 'needs;' risk factors that are amenable to change and are identified as having contributed to criminal offending in the first place (Mann, Hanson, & Thornton, 2010). According to this model, offending behaviour will likely continue to occur if criminogenic risks/needs are not addressed and changed.

Following this RNR framework, CSNSW determines which offenders require treatment, and the type of treatment they require, according to a needs assessment based on each offender's:

- current and future risk of reoffending (risk principle), where higher risk offenders are prioritised for interventions
- criminal and antisocial behavioural needs (needs principle), and
- responsiveness and capacity to engage in treatment (responsivity principle) (Andrews et al., 2011)

The EQUIPS suite is grounded in a CBT framework and is comprised of four programs:

- **EQUIPS Foundation:** This program is not offence-specific and can be delivered as a stand-alone intervention for general offending behaviour, or as a precursor for participation in other programs. It aims to introduce the offender to rehabilitative interventions, reduce generalised risk of reoffending, and increase participation in prosocial opportunities.²
- **EQUIPS Addiction:** This program offers support for participants to minimise addictive behaviours. This program is split between group processes and self-management tasks with a focus on aligning skill development to offenders' personal experiences.³
- **EQUIPS Domestic Abuse:** This program encourages offenders to accept responsibility for their intimate partner violence and abusive behaviours. There is a focus on increasing their level of accountability to minimise future behaviours. This program is based on a psycho-behavioural framework with a strong therapy-based delivery.⁴
- **EQUIPS Aggression:** This program is focused on increasing participants' behavioural control and their ability to manage responses to negative life experiences. This approach focuses on the direct and peripheral causes of aggressive behaviour in an attempt to minimise future aggression.

Each program has five modules with four sessions of two hours each (or 40 hours combined).⁵ While each program can be delivered as a stand-alone intervention, offenders can be referred to and repeat multiple EQUIPS programs, in accordance with their identified criminogenic needs and case management pathway.

¹ See New South Wales Corrective Services Compendium pp. 16.

² Ibid.

³ Ibid.

⁴ Ibid.

⁵ See CSNSW policy for EQUIPS delivery (for internal use only).

Between January 2015 and December 2018, there were 61,459 unique referrals to EQUIPS programs. Approximately half (52.8%; n=32,464) of these referrals were made by custodial staff members (the 'custodial referral pathway'), and the remaining were referred by Community Corrections staff (the 'community referral pathway'). Since 2015, the EQUIPS programs have also been central to many CSNSW initiatives, including a range of recent initiatives implemented under the NSW Government Strategies to Reduce Reoffending (Department of Justice NSW, 2018). For example, delivery of EQUIPS programs is a significant part of the Expanded Programs and Improved Custodial Case Management reforms, as well as the development of multiple High Intensity Program Units (HIPUs) at correctional centres across NSW.

This report will inform CSNSW best practice in how they identify and support Aboriginal offenders to participate in and complete EQUIPS programs through both the custodial and the community referral pathways. Despite the centrality of EQUIPS to CSNSW's offender treatment strategy, little research has gone into understanding what factors are associated with successful offender throughput, including program participation and completion.

Report Two contributed to this evidence gap by identifying factors that are associated with successful offender throughput. It was important to understand these factors because program participation and completion are important indicators of whether program referral and delivery are responsive to offenders' needs (Wormith & Olver, 2002). Research has shown that offenders who drop out of programs have more severe negative outcomes than those who did not commence any treatment at all. For example, McMurrin and Theodosi (2007) and McMurrin and McCulloch (2007b) found that failing to complete a therapeutic program is associated with an increased risk of recidivism when compared to those who have completed programs or those who received no treatment. Unfortunately, research has found that failing to complete programs is associated with having higher criminogenic risk scores pre-treatment compared to those who complete, suggesting that some programs may be failing to retain those who are most in need of intervention (Olver, Stockdale, & Wormith, 2011; Olver & Wong, 2011). Therefore, as well as understanding what makes an offender more or less likely to participate in a program they are referred to, it is also critical that CSNSW understand what makes an offender more or less likely to complete programs.

Several factors may impact the likelihood that an offender will participate in or complete an EQUIPS program that they are referred to. These consist of both individual and operational (system-level) factors and include, but are not limited to:

- Identification and referral of appropriate target samples of offenders;
- Retention of offenders throughout the referral and participation pathway; and
- Adaptability to facilitate engagement and retention of priority populations such as Aboriginal and/or Torres Strait Islander offenders.

A preliminary review of operational data suggested that processes surrounding retention of target offenders is a significant challenge and additional research is required to inform best practice (CSNSW, 2017). Wormith and Olver (2002) identified several scenarios through which offender program non-completion can occur, including:

- Being expelled from the group as the result of poor behaviour;
- Being discontinued from the group as a result of being moved from their current location due to administrative issues (for a reason other than participation in the current program); and
- When an offender chooses to exit a program of their own volition.

Factors that influence EQUIPS program participation and completion

Previous research has identified characteristics and factors which may impact whether a person chooses to engage in and complete an offender treatment program. Some of these factors are internal motivators to a person, whereas others are external to the person. Researchers in Australia and New Zealand have developed the theoretical 'Multifactor Offender Readiness Model' (MORM; Ward, Day, Howells, & Birgden, 2004), which attributes an offender's 'treatment readiness' to the presence of internal and external factors within their life and environment which interact to influence their level of engagement in the programs. **Individual or internal determinants** include cognitive, emotional, goals, behavioural and identity-based aspects. Other research has confirmed the role of internal factors in program completion. For example, offenders in Canada who did not complete prison-based group programs tended to have lower educational attainment, less employment history, be of Aboriginal descent and have a higher risk of re-offending than those who completed (Wormith & Olver, 2002).

Research has also explored whether **external (or non-individual) factors** impact the capacity of an offender to participate in or complete a program, above and beyond an offender's personal responsiveness to treatment. While an offender may be deemed 'treatment ready' at the start of the program, broader operational (system-level) factors, such as facilitator or fellow group member characteristics, the referral process and/or the way a program is delivered can negatively impact an offender's capacity to engage well in treatment (Holdsworth, Bowen, Brown, & Howat, 2019). By applying the MORM framework, it is possible to identify environmental and contextual factors that may impact program engagement such as sentencing status, location (either in the community or in prison), opportunity to access programs, availability of resources (quality staff, culture), associated interpersonal support (in prison or community), and the program characteristics (Ward et al., 2004).

These individual and external/operational factors can also be understood through the RNR concept of 'responsivity', including general responsiveness and specific responsiveness. **General responsiveness** refers to aspects of context, programs and treatment methodology that facilitate the best possible treatment engagement and outcomes for all offenders. For example, research has found that programs using structured programs and/or focused on cognitive change were more likely to lead to benefits in terms of recidivism than programs that were unstructured or not focused on cognitive change (Ross & Fabiano, 1985). The general responsiveness factor therefore suggests that programs should be based on cognitive-behavioural treatment paradigms (Wormith & Zidenberg, 2018). **Specific responsiveness** relates to aspects of treatment programs that make a program appropriate and successful for some types of offenders, but not for others. As such, program facilitators will benefit from understanding the personal characteristics of each individual within a treatment program that may inhibit their capacity to engage with the program.

Development of effective treatment strategies has been hindered by a focus on exploring and identifying factors related to general responsiveness, with limited focus on factors related to specific responsiveness (Wormith & Zidenberg, 2018). For example, the influence of individual characteristics, such as a person's ethnicity, race, gender identity, faith and sexual orientation, have not been explored in correctional treatment settings, despite robust evidence from the general therapeutic literature that individual factors affect treatment engagement, completion and outcomes (Leguizamo et al., 2018). It follows that, in order to meet best practice standards, offender treatment programs should foster an intersectional understanding of treatment delivery and each offender's responsiveness to treatment.

Specific Responsivity: Meeting the needs of Aboriginal offenders

Despite what is currently known about effectively reducing recidivism, less is known regarding the particular criminogenic needs of specific subgroups, such as Indigenous offenders (Day et al., 2008). In Australia, Aboriginal peoples represent 3.3% of the general population, however, in correctional settings, Aboriginal peoples represent approximately 29% of the incarcerated population (ABS, 2020).⁶ International literature shows that the unique needs of Indigenous populations have historically been overlooked when establishing rehabilitation programs (Baldry, McCausland, Dowse, McEntyre, & MacGillivray, 2016; Shepherd & Phillips, 2016b). This is despite these groups frequently constituting a substantial and over representative proportion of the prison population in many countries such as New Zealand, Canada, the United States of America and Australia (Baldry et al., 2016; Gutierrez, Chadwick, & Wanamaker, 2018). The consistently observed difference between proportion of Aboriginal peoples in the general population compared to in the incarcerated population indicates a significant systemic issue that needs to be addressed. Similarly, in NSW, 25.2% of the incarcerated population are Aboriginal, compared to 3.5% within the general population (NSW Bureau of Crime Statistics and Research, 2020).⁷ It is critical to better understand the factors influencing whether or not Aboriginal offenders participate in and complete EQUIPS programs in order address over-representation of Aboriginal people in the criminal justice system.

Facilitating equitable access to therapeutic programs, like EQUIPS programs, that aim to reduce reoffending can help to address this issue. Previous research has highlighted that many of the pathways to participation in offender treatment programs are prohibitive or ill-fitted for Aboriginal peoples (Shepherd & Phillips, 2016b). For example, research has noted that the risk assessment principles, commonly used in such treatments, which determine an individual's tendency to re-offend have historically been developed from evidence gleaned from white offender populations (Shepherd & Phillips, 2016b). Whilst some of the generic risk factors identified, such as alcohol and drug dependency, previous offending and unemployment (Wormith & Olver, 2002), are common in the majority of high-risk offenders; Aboriginal offenders are likely to have additional, specific criminogenic risk factors as a result of the intergenerational trauma many have endured. Such historical injustices are the forced removal of children, cultural genocide, and pervasive discrimination (Shepherd & Phillips, 2016a).

Facilitating equitable access to therapeutic programs, like EQUIPS programs, that aim to reduce reoffending can help address the issue of overrepresentation of Aboriginal peoples in custody.

Sensitivity towards the specific criminogenic needs of Aboriginal offenders potentially affects the likelihood of an Aboriginal person to participate in or even complete a therapeutic program they are referred to (Sturgess, Woodhams, & Tonkin, 2016). Research has confirmed a tendency of high non-completion rates of these programs by Indigenous groups, both specifically in Australia and globally (Sturgess et al., 2016; Wormith & Olver, 2002). Some research suggests Aboriginal peoples often present with more risk factors than non-Aboriginal peoples, a result of the aforementioned colonialist historical context and lack of cultural understanding (Gutierrez et al., 2018; Ogloff, Pfeifer, Shepherd, & Ciorciari, 2017; Shepherd & Phillips, 2016a; Sturgess et al.,

⁶ Based on daily average number of Aboriginal and Torres Strait Islander offenders in Australian prisons (n=12073) of the average daily number of total offenders in Australian prisons in the September 2020 quarter.

⁷ Statistics based on last day of September 2020.

2016). Risk factors, as they are currently designed, may not translate to common Aboriginal experiences. For example, childhood care experiences and the concept of the nuclear family is not translational to either Canadian and Australian Aboriginal communities, as it is common for children to be raised by members of the extended family (JH&FMHN, 2017; Shepherd & Phillips, 2016b). Risk assessments and programs based on white definitions of risk are not designed to account for the unique cultural and circumstantial needs that are present in Aboriginal peoples.

Successful referral and completion of a rehabilitation program in a correctional setting depends on the relevance of its treatment to its target audience. However, there is evidence that the content of offender therapeutic programs may not always be well-suited to Aboriginal offender populations, compromising their capacity to participate in and complete programs. For example, research conducted in Western Australia has found that rehabilitation programs addressing anger management are ineffective for Aboriginal and Torres Strait Islander peoples (Day et al., 2008). Research has identified that anger is a highly contextualized emotion that in Indigenous cultures, cannot be thought of in isolation but rather as significantly related to intergenerational trauma (Gutierrez et al., 2018). Without understanding the underlying cultural contributions to anger and its development into a maladaptive coping mechanism for the trauma – such as estrangement from community and cultural identity through the Stolen generations - effective treatment of anger will be inhibited (Day et al., 2008; Day et al., 2006). This misunderstanding may contribute to exclusion from rehabilitation services as anger is categorized as a generic risk factor for treatment non-completion and recidivism. The NSW Mental Health Commission (2017) stressed the importance of trauma-informed services to fully address these issues. The high levels of illiteracy, low educational attainment and widespread mental illness observed in Aboriginal communities as identified in the 2015 Aboriginal Peoples Health Report (JH&FMHN, 2017) are examples of the legacy of such discrimination and trauma (Jones, 2016). These factors identified for recidivism similarly characterise program non-completers and may be implicated as influencing factors on rehabilitative program participation and completion.

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The elevated presence of cognitive impairment, mental illness, as well as lower educational attainment amongst Aboriginal offenders may also act as barriers to program participation (Ogloff et al., 2017; Sturgess et al., 2016) as serious mental health issues and cognitive impairment, which genuinely render the offender unsuitable for groups, are exclusion criteria for EQUIPS (CSNSW, 2020). The 2015 Aboriginal Peoples Health Report revealed that there is a significant difference in the prevalence of mental health conditions in Aboriginal peoples compared to non-Aboriginal people (JH&FMHN, 2017; Perdacher, Kavanagh, & Sheffield, 2019). Aboriginal peoples are more vulnerable to developing mental health conditions, such as schizophrenia and substance use disorders, which act as barriers to participation in programs (JH&FMHN, 2017; Ogloff et al., 2017). For many Aboriginal people in the Criminal Justice System, the therapeutic experience is affected by the compounding presence of both cognitive impairments and mental illness (McCausland, McEntyre, & Baldry, 2018; Ogloff et al., 2017). Recent research revealed that cognitive impairment is relatively higher among Aboriginal offenders with mental illness in the criminal justice system (Baldry et al., 2016; Ogloff et al., 2017). Non-completion of programs has been attributed to such impairments, as initial and sustained motivation to change throughout program completion may be inhibited (McMurrin & McCulloch, 2007a).

As evidenced in Canada, attrition has been specifically related to educational attainment – with Indigenous offenders tending towards the lower educational attainment bracket (JH&FMHN, 2017; Mals, Howells, Day, & Hall, 2000). Understanding how poor mental health, cognitive impairments, and low education intersect, and their implications on functioning is useful in informing treatment programs that foremost aim to improve the holistic wellbeing of participants through cultural and community connectedness, ideally reducing recidivism. The cultural competency of program delivery has been identified as an essential aspect of the successful completion of a rehabilitation program (Gutierrez et al., 2018). The cultural competency of a

The cultural competency of a program is contingent on its considerations of the historical and social nuances of the treatment target audience.

program depends on its considerations of the historical and social nuances of the treatment target audience. Additionally, research has identified that therapeutic groups with more than one Aboriginal participant can increase the likelihood of retention of Aboriginal participants. Qualitative research with Aboriginal men in a prison-based treatment program found that the men had an initial distrust of the non-Aboriginal men unless they

knew them before the program started (Doyle et al., 2020). The same study also found they can get to know and trust non-Aboriginal men if the program lasts long enough. Having at least two (or more) Aboriginal participants in a group may mean they have another person in the group they can trust, which could mean they stay longer in a group and they then have opportunity to get to know the non-Aboriginal participants. Therapeutic group membership is an important issue worthy of further inquiry within the EQUIPS context.

An improved understanding of the factors associated with participation and completion in EQUIPS will provide critical knowledge about how to maximise appropriate offender program throughput. Considering the MORM and RNR concept of specific responsivity, a comprehensive understanding of determinants of EQUIPS program participation and completion encompasses both individual-level and operational/systems-level factors.

Aims

This study aims to:

1. Compare EQUIPS program participation and completion rates in custody and in the community between Aboriginal and non-Aboriginal offenders.
2. Identify the individual and operational factors associated with the likelihood of EQUIPS program participation and completion among Aboriginal offenders in custody and in the community.
3. Examine whether the Aboriginal membership in EQUIPS program groups improves program completion among Aboriginal offenders.

Method

Participants

Total offender sample

A cross-sectional study of administrative data obtained from the Offenders Integrated Management System (OIMS), collected routinely by CSNSW, was conducted. Data was obtained for all adult offenders managed by CSNSW who had been referred to an EQUIPS program in custody or in the community between 2 January 2015 (the implementation of EQUIPS) and 31 December 2018. This resulted in a total of 61,459 referrals to EQUIPS programs attributed to 18,963 unique offenders. The target sample was defined by their referral to any of the EQUIPS programs in custody or in the community. Relevant search functions applied to the CSNSW Offender Information Management System (OIMS) were used to identify the sample of offenders. In order to ensure that all included participants had adequate time to move through the process of program referral, participation and completion; offender entries were removed from the dataset if the index CSNSW episode associated with a program referral had not been marked as complete as of the data census date.⁸ This meant avoiding incorrectly coding individuals as not participating or not completing programs in an index CSNSW episode that they may have later gone on to achieve. Ethical approval to conduct this research was obtained from CSNSW, The University of Sydney HREC (2019/730) and the Aboriginal Health and Medical Research Council (AH&MRC) HREC (1560/19).

The cohort of offenders included within each analysis model depended on the question the model was designed to answer. In models with program participation as an outcome variable, the offender sample included those who had been referred to an EQUIPS program between 2015-2018 and had completed their index 'CSNSW episode', meaning the period in which they were under continuous supervision by CSNSW associated with a particular offence and EQUIPS referral. In models with program completion as an outcome variable, the offender sample included those who had participated in at least one session of a program that they had been referred to between 2015-2018.

Aboriginal offender sample

One-third (33.0%) of the total referrals made to EQUIPS during the 2015-2018 period were for offenders who were Aboriginal.⁹ When looking at individual offenders who received a referral, 30.3% (n=6319) were Aboriginal or Torres Strait Islander offenders.

⁸ A 'CSNSW Episode' refers to the full timeframe in which an offender is under continuous supervision of Corrective Services NSW. This includes time spent in custody and also in the community.

⁹ This was the number of referrals for participants who were identified within OIMS as Aboriginal, but 2,660 referrals (4.2%) had unknown or were missing Aboriginal status.

Measures

The administrative data were obtained from the CSNSW Offenders Integrated Management System (OIMS). This includes the Level of Service Inventory – Revised (LSI-R; Andrews & Bonta, 2001), an actuarial risk assessment tool designed to classify an offender’s risk of re-offending and identify criminogenic needs. The LSI-R has 54 items grouped into 10 subscales: Criminal History, Education/Employment, Finances, Family/Marital, Accommodations, Leisure/Recreation, Companions, Alcohol/Drug, Emotional/Personal, and Attitude/Orientation. LSI-R total scores are generally used to predict recidivism (risk) whereas subscale scores are used to identify criminogenic needs. It should be kept in mind that those who have LSI-R assessment data available may not be representative of the broader offender population. There could be a bias towards those who have more extensive histories and/or those who have re-offended. The outcome variables and the individual and systems-level predictor variables included in the models are listed in Appendix Table 1.

To examine program participation, only those offenders who had been referred to an EQUIPS program within the 2015-2018 timeframe and had completed their index CSNSW episode were included. For program completion, only those participants who had participated in a program that they had been referred to at least once, were included. Referrals were excluded when they are missing variables particular to that analyses. Total number of referrals were 16,308 in the custody program participation dataset, 6,085 for the custody program completion dataset, 8,612 for the community program completion dataset, and 16,266 for the community program participation dataset.

Data analysis and model specification

Aim 1: Compare EQUIPS program participation and completion rates in custody and the community between Aboriginal and non-Aboriginal offenders.

Descriptive statistics are reported for the total sample to provide an initial outline of offender characteristics and referral pathways.¹⁰ Summary statistics pertain to all EQUIPS program referrals that occurred during the study period (2015 to 2018 inclusive). Some offenders received EQUIPS program referrals through both custodial and community-corrections staff and therefore have data across both contexts.

Differences in the distribution of offender characteristics across EQUIPS programs and between Aboriginal offenders and non-Aboriginal offenders were analysed using a series of chi-square tests for categorical data.¹¹ Tests were conducted separately within custody- and the community-based

¹⁰ Data for the same offender could have been included in the analyses more than once as they were referred to more than one EQUIPS program (i.e., data was collected each time they were referred to an EQUIPS program).

¹¹ A sub-sample was used for this analysis. Chi-Squared tests require an assumption of independence between observations and several individuals had been referred to multiple EQUIPS programs over the study period. While 80% of all offenders were allocated only to one program the remaining 20% were allocated to multiple programs violating this assumption of independence. To overcome this methodological issue, inferential analyses focused only on each offender’s first program referral over the study period in each referral pathway.

referral samples looking at i) levels of program participation amongst all referred ii) levels of program completion amongst all referred, and, iii) levels of program completion amongst those who started a program they were referred to. Analyses were conducted using IBM SPSS Statistics Version 25 using a predetermined alpha level of $p < .001$. For statistically significant chi-square tests ($p < .001$), adjusted residual scores were interpreted to examine any significant group differences. Post hoc analysis of adjusted residual scores of > 2 or < -2 were deemed to be significant (Macdonald & Gardner, 2000). In addition to reporting the statistical significance of the relationships observed (p values), Cramer's V (ϕ_c) was also interpreted as the effect size measure to report meaningful or 'practical' significance (Khalilzadeh & Tasci, 2017; Sun, Pan, & Wang, 2010). Cramer's V is used to measure the strength or magnitude of the association between two categorical variables that have more than two levels, and it ranges from 0 to 1 (Ferguson, 2009; Sun et al., 2010). In line with previous research and statistical guidelines, the recommended minimum effect size representing a 'practically' significant effect is $\phi_c \geq 0.2$ (J. Cohen, 1992; Ferguson, 2009; O'Keeffe et al., 2016; Sun et al., 2010).

Aim 2: Identify individual and operational factors associated with EQUIPS program participation and completion among Aboriginal offenders in custody and the community

A multiple-stage approach was used to address this aim. First, factors associated with program participation and completion were modelled *within* the population of Aboriginal offenders (with all non-Aboriginal offenders removed from the analysis). These model findings were then compared to findings using models from Report Two (which included the 'full sample' of all offenders referred to EQUIPS, i.e., not just Aboriginal Offenders), to assess which factors may be specific to Aboriginal offenders. In cases where factors were observed to differ between Aboriginal and non-Aboriginal offenders, the significance of this difference was tested by an interaction term within the full sample.

Stage 1. Factors associated with program participation and completion among Aboriginal offenders (non-Aboriginal offenders removed from the analysis)

The cross-classified models used to predict program participation and completion utilised in Report Two were repeated within the restricted subsample of Aboriginal offenders using STATA version 16. Two-level multilevel models were used to account for the several level two random effects that were thought to impact whether a referral to EQUIPS program would confer to program participation and completion. These were:

1. *Offender-level variance*: Many offenders were referred to multiple EQUIPS programs over the study period. Therefore, the clustering of multiple measurements from individual offenders needs to be accounted for in the analysis.
2. *Centre location of program participation*: Offenders participated in EQUIPS programs at a particular centre in custody or community. As such, there was a need to account for the between-centre effects on program completion outcomes.
3. *Program type*: Referrals occurred to four different programs – Foundation, Addiction, Aggression and Domestic Abuse. Between-program effects need to be accounted for in program participation outcomes.

Given the need to account for these level two effects, a cross-classified multilevel logistic regression model was used to examine the individual and systems-level predictors associated with two binary outcomes - program participation (vs. non-participation) and program completion (vs. non-completion). Cross-classified modelling was used to account for the non-hierarchical

clustering of observations within offenders and within program types or centre locations. Traditional multilevel models assume a hierarchical structure, where observations are hierarchically nested, such that referrals that are given to one offender occur within a single centre or that referrals provided to one offender are for a single EQUIPS program. In reality, offenders are referred to multiple different programs and move between centres, and for this reason cross-classified models were required to account for the non-hierarchical, clustered nature of the data.

Adjusted models were fitted, to separately assess the association between program participation/completion and 1) individual-level covariates, 2) systems-level covariates. Eight separate models were conducted to examine the association between these covariates and the different binary outcomes (program participation vs. program completion) and within each referral context (community referral pathway vs. custodial referral pathway). Table 2 provides a summary of the structure of each of these models.

Table 1 Summary of the models by predictor type (individual- vs. operational), sample (custodial- vs. community-referral pathway) and outcomes (program participation vs. program completion).

Referral Pathway	Predictors	Outcome 1: Participation	Outcome 2: Completion
Custodial	Individual level	Analysis 1	Analysis 3
	Operational level	Analysis 2	Analysis 4
Community	Individual level	Analysis 5	Analysis 7
	Operational level	Analysis 6	Analysis 8

The random variance structure differed according to model type. In models predicting program participation, referrals nested within Offender-level variance and program type. In models predicting program completion, referrals were nested in Offender-level variance and centre location of program delivery. This structure can be seen below in Figure 1. Different variables were chosen as random effects in each model type based on theory-driven decisions about what variable was likely to impact on program participation (i.e., program type) compared to program completion (location of program delivery).

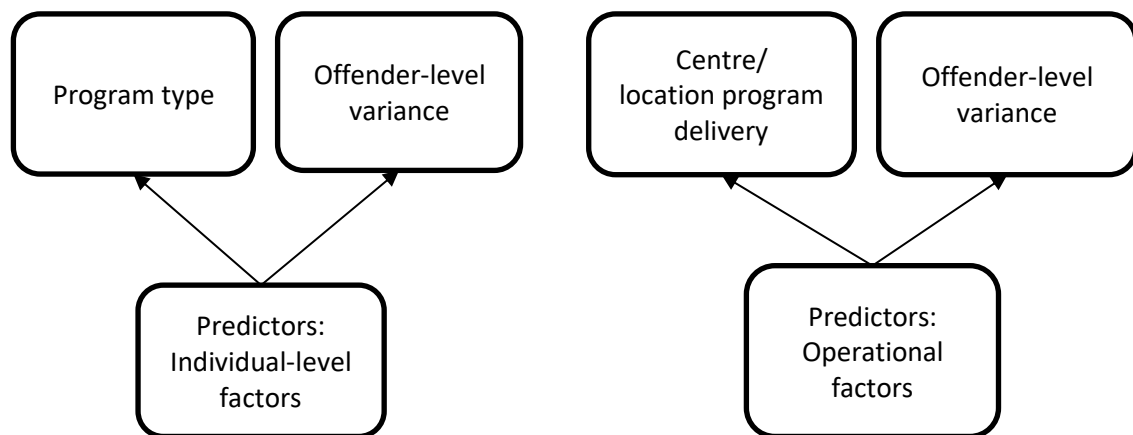


Figure 1 Framework for level two random effects structure in cross-classified models.

All analyses were conducted using the *xtmelogit* command in STATA software package 16 using a maximum likelihood estimation procedure. Odds ratios (ORs) and p-values are presented for fixed effects (level one predictors). Odds ratios and 95% CIs are presented for random effects. Statistical tests were performed with a 2-sided alpha level of .05. Model specification for all models began with estimation of an empty 'unconditional' model, without any predictors and including only crossed random-level predictors (model 0) which was used to assess the variance attributable at an individual-level and at a program or centre level (depending on the model). In the event that this first model suggested no significant variance at the program or centre level, these random effects were removed from subsequent models, and models instead estimated with referrals nested within a single variable, offender-level variance or program/centre level variance, depending on which random effect made the strongest contribution to the model. Next, conditional models were estimated to examine the impact of relevant level one predictors, adjusted for this variance at the individual-level and the centre/program level. Model specification for the individual-level and operational-level models is outlined in the following sections.

Individual-level predictors model specification

A large number of individual-level level one predictors of EQUIPS participation were hypothesised a priori based on extant research and theory. To avoid overfitting the estimation model, sequential regression models of predictors group in theory-driven categories were conducted for each of the following individual-factor outcomes i) participation through the community pathway, ii) participation through the custodial pathway iii) completion through the community pathway, iv) completion through the custodial pathway. The sequential regression model enters variables in blocks, which facilitates assessment and comparison of the variance that is uniquely explained by each category of variables, after accounting for variance in prior blocks.

In each model, the order of blocks was as follows:

1. A **null model** including only random effects and no level one predictors,
2. **Demographic factors**, including age and gender,
3. **Socioeconomic factors**, including IRSAD score and Relative remoteness
4. **Criminogenic factors** including assessed Risk category and domain scores (as defined by the LSI-R),
5. **History of contact with the criminal justice system**, including history of incarceration and number of convictions and sentencing characteristics, including Most Serious Offence types.
6. **Program engagement** variables (as defined by the number of instances an offender had either been referred to or participated in an EQUIPS program in the custodial or community context over time).

A Likelihood Ratio (LR) test was used to assess the statistical significance of each block of variables, after accounting for variables entered in previous blocks. The individual-level models were the same as with the full sample, except excluding 'CALD status' was removed as a 'demographic factor' predictor because no Aboriginal were identified in the dataset as being CALD.

Operational-level predictors model specification

Program type (e.g., EQUIPS Addiction vs. Domestic Abuse) was included as a level one variable within models with operational (system-level) predictors to explore differential participation and completion rates, adjusting for random variation at the individual and centre level.

Other level one system level predictors entered in these models were:

- Whether parole was attached to index sentence;
- Needing to move between correctional centres/Community Corrections offices to participate in a program;
- Months prior to sentence end when first started participating in program; and
- Months since sentence started when first started participating in program.

In models addressing custodial pathway models, two additional predictors were included: concurrent employment or education at the time of referral.

Stage 2. Comparing factors associated with program completion among Aboriginal and non-Aboriginal offenders

Two strategies were used to identify areas of possible comparison between Aboriginal offenders and non-Aboriginal offenders:

1. Results of each of the cross-classified models were compared between those conducted in the total offender sample (which can be observed in Report Two) with those in the current sample of Aboriginal offenders. Areas where there were clear differences in the magnitude of effects were identified as possible areas of potential difference between the two cohorts.
2. Areas where there were reasons derived from extant research or theory as to why a difference may exist between Aboriginal offenders or non-Aboriginal offenders. Our methodology in selecting areas of potential difference was informed by Aboriginal peoples' worldviews through authorship (MD).

Based on these decisions of comparison areas, the final version of the cross-classified models from Report Two were run again with the same covariates except with new interaction terms. The added interaction terms investigated whether several variables interacted with Aboriginal status.

Aim 3: Examine whether Aboriginal membership in EQUIPS program groups improves program participation and completion among Aboriginal offenders.

Two cross-classified models investigating the likelihood of program completion within Aboriginal offenders referred through a) the custodial pathway and b) the community pathway. Both models were carried out as described above. Models examined the incremental contribution of group composition (having Aboriginal peers in program group) to prediction of completion above and beyond the individual and operational predictors examined in earlier models.

To examine the effects of group composition, two variables were generated to index:

1. Whether or not there was at least one other Aboriginal person within their index EQUIPS program cohort.
2. The full number of offenders within their program group (or 'class size'). This variable was included as a covariate to account for the wide variation in the total number of group members in each index EQUIPS cohort, from 1 to 20. Because there was a large number of very small program groups, failing to account for group size may have led to skewed results.

Results

Aim 1: Compare EQUIPS program participation and completion rates in custody and the community between Aboriginal and non-Aboriginal offenders

RESULTS SUMMARY FOR AIM 1

Participation

- There were no significant differences between participation rates for Aboriginal offenders and non-Aboriginal offenders through the **custodial** referral pathway (39.0% vs. 39.8%, respectively).
- Aboriginal offenders had significantly lower levels of participation rates compared to non-Aboriginal offenders when referred through the **community** pathway (40.5% vs. 44.3%, respectively).

Completion

- Among offenders who started EQUIPS programs, Aboriginal offenders had significantly lower completion rates compared to non-Aboriginal offenders (64.0% vs 71.5% **custodial** referral pathway; 52.8% vs. 59.5% **community** pathway)
- In relation to specific programs, Aboriginal offenders who commenced Domestic Abuse through a **custodial** referral pathway had significantly lower levels of program completion than non-Aboriginal offenders who commenced Domestic Abuse (50.0% vs. 75.5%). This was the only finding that met ‘practical significance’.

Custodial Referral Pathway

As can be observed in Table 3, regardless of Aboriginal status, 39.5% of participants referred to an EQUIPS program through the custodial pathway went on to participate in the program (i.e., participated in at least one session of an EQUIPS program). There were no differences in participation rates between Aboriginal and non-Aboriginal offenders across the different EQUIPS programs (39.0% vs. 39.8%, respectively).

Table 2 The proportion of offenders who participated in an EQUIPS program (referred through the custodial pathway; n=7885).

	Aboriginal Offenders	Non-Aboriginal Offenders	Total Participated	Test Statistics $\chi^2 (1) ; p; \phi c$
Foundation	299 (38.6%)	739 (43.6%)	1038 (42.0%)	5.44; .020; .05
Addiction	543 (40.3%)	966 (39.3%)	1509 (39.6%)	.396; .529; 0.01
Domestic abuse	88 (36.2%)	155 (39.5%)	243 (38.3%)	.703; .402; .03
Aggression	130 (36.5%)	197 (32.0%)	327 (33.6%)	2.08; .149; .05
Total (across programs)	1060 (39.0%)	2057 (39.8%)	3117 (39.5%)	.574; .449; -.01

Note. $\chi^2 (1)$ = Chi Square, p = p-value, ϕc = Cramer’s V, where $\phi c \geq 0.2$ signifies a practically significant effect.

Table 4 shows the number and proportion of offenders referred to an EQUIPS program through the custodial pathway that went on to complete that program, by Aboriginal status. Among those referred to any EQUIPS program, Aboriginal offenders had significantly lower rates of program completion compared to non-Aboriginal offenders (24.9% vs. 28.5%, respectively). Specifically, Aboriginal offenders had significantly lower levels of EQUIPS Domestic Abuse completion compared to non-Aboriginal offenders (18.1% vs. 29.8%; $p > .001$). There were no significant differences between the two offender groups for any other specific program. In both findings, the effect size did not meet practical significance ($\phi_c \leq 0.2$).

Table 3 Proportion of offenders who completed an EQUIPS program (referred through the custodial pathway)

	Aboriginal offenders	Non-Aboriginal offenders	Total Completed	Test Statistics $\chi^2 (1) ; p ; \phi_c$
Foundation	194 (25.0%)	499 (29.4%)	693 (28.0%)	5.08; .02; .05
Addiction	353 (26.2%)	705 (28.7%)	1058 (27.8%)	2.61; .11; .03
Domestic abuse	44 (18.1%)	117 (29.8%)	161 (25.4%)	10.92; $\leq .001$; .13
Aggression	87 (24.4%)	149 (24.2%)	236 (24.3%)	.008; .930; .03
Total (across programs)	678 (24.9%)	1470 (28.5%)	2148 (27.2%)	23.91; $\leq .001$; .09

Note. $\chi^2 (1)$ = Chi Square, p = p-value, ϕ_c = Cramer's V, where $\phi_c \geq 0.2$ signifies a practically significant effect.

Table 5 shows that when looking at offenders on the custodial referral pathway who participated in at least one EQUIPS session, the differences in completion rates between Aboriginal offenders and other offenders became slightly more pronounced: Aboriginal offenders completed programs that they started at a significantly lower rate compared to other offenders (64.0% vs. 71.5%) ($p \leq .001$). The size of this effect was small and did not meet the threshold of practical significance ($\phi_c \leq 0.2$). When looking at differences within specific programs, Aboriginal offenders were significantly less likely to complete Addiction (65.0%) and Domestic Abuse (50.0%) programs that they had started, compared to other offenders (73.0% and 75.5%, respectively) ($p \leq .001$). The difference in completion of Domestic Abuse programs met practical significance ($\phi_c \geq 0.2$).

Table 4 Proportion of offenders who had participated in at least one program session and completed an EQUIPS program (referred through the custodial pathway).¹²

	Aboriginal offenders	Non-Aboriginal offenders	Total Completed	Test Statistics $\chi^2 (1) ; p ; \phi_c$
Foundation	194 (64.9%)	499 (67.5%)	693 (66.8%)	.669; .041; .03
Addiction	353 (65.0%)	705 (73.0%)	1058 (70.1%)	10.54; $\leq .001$; .08
Domestic abuse	44 (50.0%)	117 (75.5%)	161 (66.3%)	16.31; $\leq .001$; .26
Aggression	87 (66.9%)	149 (75.6%)	236 (72.2%)	2.96; .09; .10
Total (across programs)	678 (64.0%)	1470 (71.5%)	2148 (68.9%)	18.37; $\leq .001$; .08

Note. $\chi^2 (1)$ = Chi Square, p = p-value, ϕ_c = Cramer's V, where $\phi_c \geq 0.2$ signifies a practically significant effect.

¹² This table only includes participants who participated in at least one program session.

Community Referral Pathway

Table 5 depicts a comparison of the number and proportion of offenders who participated in EQUIPS after being referred through the community pathway. Across programs, 40.5% of Aboriginal offenders participated in programs, a rate that was significantly lower than the participation rate for non-Aboriginal offenders (44.3%). Participation in EQUIPS Foundation upon referral among Aboriginal was significantly lower than non-Aboriginal offenders (40.2% vs. 46.6%, respectively) ($p > .001$). However, the effect size was very small and did not meet practical significance.

Table 5 The number and proportion of participants who participated in an EQUIPS program when referred through the community referral pathway (n=10877)

	Aboriginal offenders	Non-Aboriginal offenders	Total Participated	Test Statistics $\chi^2 (1) ; p ; \phi_c$
Foundation	654 (40.2%)	1500 (46.6%)	2154 (44.4%)	18.01; $\leq .001$; .06
Addiction	333 (37.0%)	627 (35.6%)	960 (36.1%)	.52; .472; .01
Domestic abuse	361 (48.9%)	852 (54.2%)	1213 (52.5%)	5.55; .02; .05
Aggression	119 (33.3%)	234 (33.3%)	353 (33.3%)	.00; 1.00; .00
Total (across programs)	1467 (40.5%)	3213 (44.3%)	4680 (43.0%)	14.11; $\leq .001$; .04

Note. $\chi^2 (1)$ = Chi Square, p -value, ϕ_c = Cramer's V, where $\phi_c \geq 0.2$ signifies a practically significant effect.

Table 6 illustrates the number and proportion of offenders who were referred to an EQUIPS program through the community pathway that went on to complete that program, by Aboriginal status. Across programs, Aboriginal offenders were significantly less likely to complete programs they were referred to than non-Aboriginal offenders (21.4% vs. 26.4%, respectively). Aboriginal offenders were significantly less likely (20.2%) than other offenders (26.5%) to complete Foundation and were also significantly less likely (29.0%) to complete Domestic Abuse than non-Aboriginal offenders (36.7%; $p \leq .001$). In all of these findings, the effect size did not meet practical significance ($\phi_c \leq 0.2$).

Table 6 Number and proportion of participants who completed an EQUIPS program who were referred through the community referral pathway

	Aboriginal offenders	Non-Aboriginal offenders	Total Completed	Test Statistics $\chi^2 (1) ; p ; \phi_c$
Foundation	329 (20.2%)	854 (26.5%)	1183 (24.4%)	23.36; $\leq .001$; .07
Addiction	166 (18.5%)	353 (20.1%)	519 (19.5%)	.96; .327; .02
Domestic abuse	214 (29.0%)	577 (36.7%)	791 (34.2%)	13.18; $\leq .001$; .08
Aggression	65 (18.2%)	129 (18.4%)	194 (18.3%)	.01; .95; .00
Total (across programs)	774 (21.4%)	1913 (26.4%)	2687 (24.7%)	32.45; $\leq .001$; .06

Note. $\chi^2 (1)$ = Chi Square, p -value, ϕ_c = Cramer's V, where $\phi_c \geq 0.2$ signifies a practically significant effect.

Table 7 illustrates completion rates for offenders on the community referral pathway who participated in at least one EQUIPS program. Among offenders who started a program, Aboriginal offenders were significantly less likely to complete programs compared to non-Aboriginal offenders (52.8% vs. 59.5%, respectively). The size of this effect did not meet the threshold of practical significance. None of the differences in completion between the two offender cohorts met the size threshold of practical significance ($\varphi_c \leq 0.2$).

Table 7 Number and proportion of participants who had participated in at least one program session and completed an EQUIPS program who were referred through the community referral pathway.¹³

	Aboriginal offenders	Non-Aboriginal offenders	Total Completed	Test Statistics $\chi^2 (1) ; p; \varphi_c$
Foundation	329 (50.3%)	854 (56.9%)	1183 (54.9%)	8.08; .004; .06
Addiction	166 (49.8%)	353 (56.3%)	519 (54.1%)	3.64; .06; .06
Domestic abuse	214 (59.3%)	577 (67.7%)	791 (65.2%)	7.97; .005; .08
Aggression	65 (54.6%)	129 (55.1%)	194 (55.0%)	.008; .928; .01
Total (across programs)	774 (52.8%)	1913 (59.5%)	2687 (57.4%)	18.93; $\leq .001$; .06

Note. $\chi^2 (1)$ = Chi Square, p -value, φ_c = Cramer's V, where $\varphi_c \geq 0.2$ signifies a practically significant effect.

¹³ This table only includes participants who participated in at least one program session.

Aim 2: Identify individual and operational factors associated with EQUIPS program participation and completion among Aboriginal offenders in custody and in the community

RESULTS SUMMARY FOR AIM 2 (Custody)		
Factors associated with participation and completion in custody	Participation	Completion
Individual factors		
Demographic factors		
Age at referral		√+ve
Gender (male)		
In a relationship		
Socioeconomic factors		
SEIFA Relative Social Advantage and Disadvantage score		
ABS Remoteness Index		
Criminogenic factors		
LSI-R Risk Category		
1. Criminal History domain		
2. Education/ Employment domain		
3. Financial domain	√+ve	
4. Family/ Marital domain		√-ve
5. Accommodation domain		
6. Leisure/ Recreation domain		
7. Companions domain		
8. Alcohol and Drug domain	√+ve	
9. Emotional/ Personal domain		
10. Attitude/Orientation domain		
Criminal history and sentencing characteristics		
Conviction count (lifetime)		
Cumulative time in prison (lifetime)		
Most serious offence associated with index sentence		
Serious Violence offence	√-ve	
Non-serious violence offence	√-ve	
Property offence	√-ve	
Breach of court order	√-ve	
Driving offence	√-ve	
Number of prior EQUIPS referrals	√-ve	
Operational factors		
Employed in custody at time of referral	√+ve	√+ve
Receiving education at time of referral	√+ve	
Parole attached to sentence	√+ve	
Needing to move centres to complete	-	
Months between EQUIPS program commencement and index referral	√-ve	
Months between sentence start and referral		√+ve
Months between sentence end and referral	√+ve	√+ve
No. times referred/commenced EQUIPS program	√-ve	

Note. √ indicates significant association and +ve/-ve indicates direction of association

RESULTS SUMMARY FOR AIM 2 (Community)

Factors associated with participation and completion in community	Participation	Completion
Individual factors		
Demographic factors		
Age at referral		√+ve
Gender (male)	√+ve	√+ve
In a relationship		
Socioeconomic factors		
SEIFA Relative Social Advantage and Disadvantage score		√-ve
ABS Remoteness Index	√-ve	√-ve
Criminogenic factors		
LSI-R Risk Category	√+ve	
1. Criminal History domain		√-ve
2. Education/ Employment domain		
3. Financial domain		
4. Family/ Marital domain		
5. Accommodation domain		
6. Leisure/ Recreation domain		
7. Companions domain		
8. Alcohol and Drug domain		
9. Emotional/ Personal domain	√-ve	
10. Attitude/Orientation domain	√-ve	
Criminal history and sentencing characteristics		
Conviction count (lifetime)		
Cumulative time in prison (lifetime)		√-ve
Most serious offence associated with index sentence		
Serious Violence offence	√+ve	
Non-serious violence offence		
Property offence		
Breach of court order	√+ve	
Driving offence		
Number of prior EQUIPS referrals	√-ve	
Operational factors		
Employed in custody at time of referral		
Receiving education at time of referral		
Parole attached to sentence		√-ve
Needing to move centres to complete	-	√-ve
Months between EQUIPS program commencement and index referral	√-ve	
Months between sentence start and referral		
Months between sentence end and referral	√+ve	
No. times referred/commenced EQUIPS program	√-ve	

Note. √ indicates significant association and +ve/-ve indicates direction of association

Custodial Referral Pathway

Individual factors associated with program participation in custody (Analysis 1)

Stage 1: Factors for Aboriginal offenders only

Full results from multilevel models can be found in Appendix

Table 9. In brief, likelihood ratio tests testing sequential blocks of predictors identified that history of contact with the criminal justice system and sentencing characteristics made the strongest contribution to the likelihood of program participation. Criminogenic factors and EQUIPS engagement made a smaller contribution to the model. Demographic and socioeconomic factors were not significantly associated with participation ($p \geq .05$).

The strongest unique predictors of participation were related to the offenders' most serious offence type, compared with a general 'other' offences that did not fit within tested categories. Those with a breach of court order were 71% less likely to participate in programs than 'other' usually more minor offence types. Decreased rates of participation compared to 'other' offence types were also evident for offenders whose most serious offence was a serious violent offence (41% less likely), a non-serious violent offence (55% less likely), property offence (40% less likely) and driving offence (54% less likely). Financial needs and alcohol and drug needs were also associated with program participation, with participation increasing by 12% per standard deviation increase in financial needs and 11% by every standard deviation increase in alcohol and drug needs. Prior EQUIPS engagements decreased likelihood of participation by 14% with each consecutive referral.

Stage 2: Factors which may be unique to Aboriginal offenders

The results in the Aboriginal participant sample had some differences compared to those identified in the total offender sample (published in Report Two). In the total offender sample, offenders who were assessed as having a higher risk category (e.g., 'high' instead of 'medium high') had a significantly reduced likelihood of participating in a program they were referred to.

Amongst the total offender sample, having a Serious Violent Offence as the Most Serious Offence of their index sentence was associated with an increased likelihood of participation (participation increased by 15%), but Aboriginal offenders with a Serious Violent Offence as their Most Serious Offence were 41% less likely to participate. Due to the large effect of prior EQUIPS engagement on program participation within the Aboriginal-only sample, it was also deemed important to test whether this effect was particularly strong amongst Aboriginal offenders relative to non-Aboriginal offenders. If having been referred to an EQUIPS program more times was particularly associated with reduced likelihood of participation for Aboriginal offenders, it might be an indication that the EQUIPS referral system does not align well with this offender cohort's needs.

Cross-classified models were undertaken amongst the total offender sample testing interaction terms with Aboriginal status with LSI-R Risk Category, Financial Needs, Serious Violent Offence as Most Serious Offence and past EQUIPS engagement. When tested as part of the broader cross-classified model described, there was no significant interaction effect between Aboriginal status and the number of prior EQUIPS referrals ($p \leq .05$). Across the total sample, there was an effect where the higher an offender's Risk Category, the less likely they were to participate in programs. There was a significant interaction between Aboriginal status and Risk Category where the difference in participation rates for those who have a low risk compared to a medium risk ($p \leq .047$, 95%CI: .03, .97) or a medium-high risk ($p \leq .049$, 95%CI: .03, .99) was smaller for Aboriginal offenders compared to non-Aboriginal offenders (see Figure 2). In other words, non-Aboriginal offenders who were medium risk were much less likely to participate in a program they were referred to compared to low risk offenders, but this difference was less apparent amongst Aboriginal offenders.

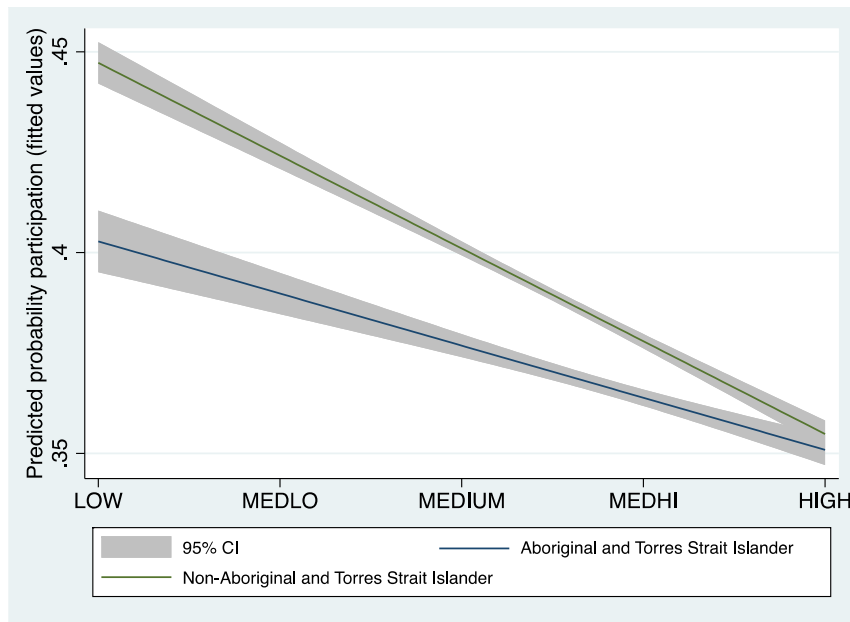


Figure 2 Offenders' LSI-R risk category relative to their predicted participation in EQUIPS programs, compared between Aboriginal and Non-Aboriginal offenders.

Participation was slightly more likely amongst Aboriginal offenders with higher levels of financial needs than lower levels of financial needs: participation in the total offender sample decreased with higher financial needs, but this occurred to a significantly lesser extent amongst Aboriginal offenders (OR = 1.12, $p \leq .005$, 95%CI: 1.04, 1.22; See Figure 3).

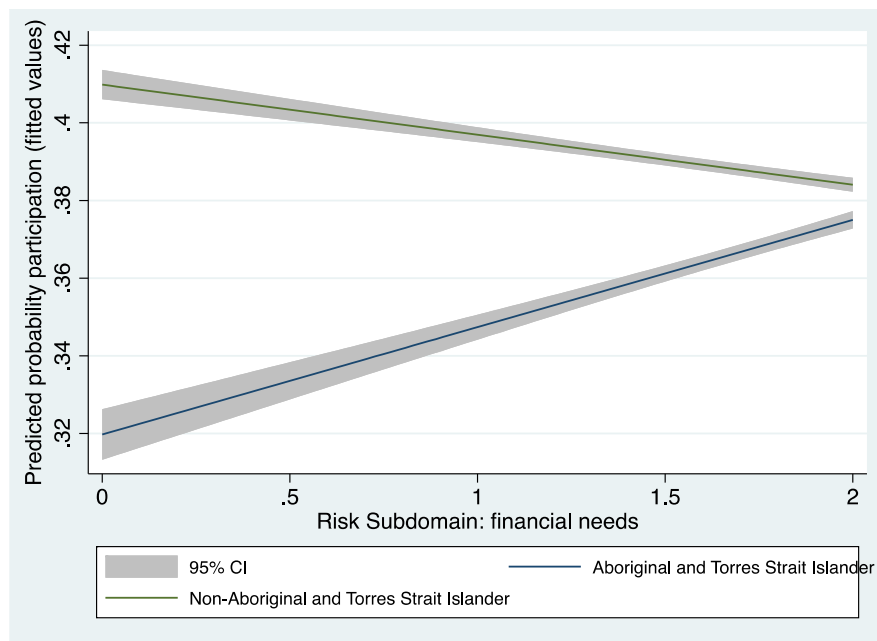


Figure 3 Offenders' financial needs relative to their participation in EQUIPS programs, compared between Aboriginal and Non-Aboriginal offenders.

Across the total sample, there was an effect where those who had a Serious Violent Offence as their Most Serious Offence in their index sentence were more likely to participate in programs relative to those with a different Most Serious Offence. As can be observed below in Figure 4, there was a significant interaction effect between Aboriginal status and Serious Violent Offence status where Aboriginal offenders were less likely than non-Aboriginal offenders to participate in

programs they were referred to and this difference was larger amongst those with a Serious Violent Offence as their Most Serious Offence than those without ($p \leq .05$, 95%CI: .75, .99).

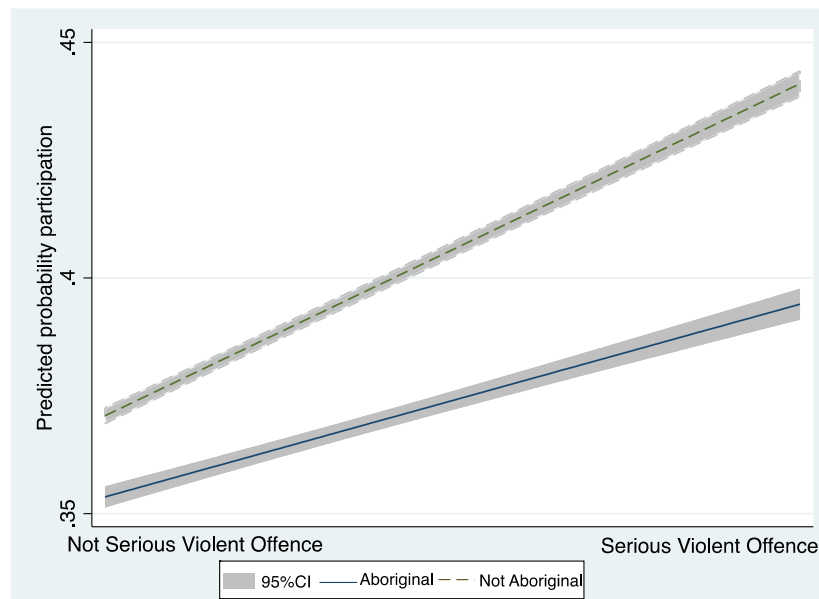


Figure 2 Offenders for whom a ‘Serious Violent Offence’ was and was not their Most Serious Offence in their index sentence, relative to their predicted participation in EQUIPS programs, compared between Aboriginal and Non-Aboriginal offenders.

Operational factors associated with program participation in custody (Analysis 2)

Stage 1: Factors for Aboriginal offenders only

Full results from multilevel models can be found in Appendix Table 10 below. Several operational factors were associated with program participation amongst Aboriginal offenders going through the custodial referral pathway. Increased program participation was associated with employment (58% increase) and undergoing education (14% increase) within the correctional centre at the time of referral. Participation increased by 42% for Aboriginal offenders who had a parole period attached to their sentence compared to those without. Given that participation outcomes followed custody-based people into their parole period, this result means that a person can be referred in custody but then actually commence once released from custody into the community. Aboriginal offenders who were referred to EQUIPS Aggression were 33% less likely to participate in the program than offenders allocated to EQUIPS Foundation, but no differences were apparent between Foundation and other programs.

Timing of referral also impacted the likelihood of program participation amongst Aboriginal offenders, whereby every extra month between referral and the end of their custodial sentence increased likelihood of program participation by 3%. Each extra custody-based referral an Aboriginal offender received over the study period was associated with a 9% reduction in the odds of program participation.

Stage 2: Factors which may be unique to Aboriginal offenders

The odds of participating in programs if employed (rather than unemployed) at the time of referral appeared to be higher amongst Aboriginal offenders (58% increase) compared to the total offender sample (38% increase). Similarly, the odds of participating in an EQUIPS program

amongst those who had a parole period as part of their sentence (relative to those without a parole period) was higher amongst Aboriginal offenders (42% increase) than the total offender cohort sample (12% increase). Together these findings suggest that there may be significant interaction effects between Aboriginal status and employment at referral and Aboriginal status and having a parole period on the likelihood of program participation.

Interaction terms between Aboriginal status with parole periods, being in education or being employed at the time of referral did not significantly predict the likelihood of program participation.

Individual factors associated with program completion in custody (Analysis 3)

Stage 1: Factors for Aboriginal offenders only

The full results of a multilevel model of the individual-level factors associated with EQUIPS program completion through the custodial referral pathway can be observed in Appendix Table 12 Operational factors associated with completion amongst Aboriginal offenders, including having at least two Aboriginal people within EQUIPS grouping (custody)

	Model 0 N=1853 Null model	Model 1 N=1853 Cross-classified	Model 2 N=1853 Sub-study
Fixed effect			
Parole attached to sentence		1.31 (.66) 95% CI (.49,3.51)	1.31 (.67) 95% CI (.48, 3.59)
Education at referral		1.06 (.15) 95% CI (.81,1.38)	1.04 (.15) 95% CI (.79, .1.37)
Employment at referral		1.48 (.22) 95% CI (1.11,1.98)	1.47 (.22) 95% CI (1.10, 1.98)
Months since EQUIPS program commenced at referral		1.01 (.01) 95% CI (.99,1.02)	1.00 (.01) 95% CI (.99, 1.01)
Months prior to sentence end when referred to program		1.04 (.01) 95% CI (1.02,1.05)	1.03 (.01) 95% CI (1.02, 1.05)
Months since sentence started when referred		1.01 (.01) 95% CI (1.00,1.03)	1.02 (.01) 95% CI (1.00, 1.03)
Number of unique commencements of EQUIPS through the custodial referral pathway		1.07 (.11) 95% CI (.88,1.31)	1.06 (.27) 95% CI (.87, 1.31)
Needing to move location to participate in program		1.12 (.17) 95% CI (.84, 1.50)	.93 (.15) 95% CI (.68, 1.26)
Program Type			
Addiction		1.30 (.20) 95% CI (.97, 1.76)	1.24 (.19) 95% CI (.91, 1.68)
Domestic Abuse		.74 (.16) 95% CI (.48, 1.13)	.78 (.17) 95% CI (.50, 1.21)
Aggression		1.23 (.24) 95% CI (.83, 1.80)	1.20 (.24) 95% CI (.81, 1.77)
Sub-study variables			
Two or more Aboriginal offenders in group			1.94 (.37) 95% CI (1.33, 2.83)
Total number of program group members			1.01 (.04) 95% CI (.93, 1.10)
Random effects	34.88****	28.43****	30.65****

Offender ID (U2)	1.98 (.56) 95% CI (1.13, 3.45)	1.70 (.52) 95% CI (.94, 3.08)	1.86 (.56) 95% CI (1.04, 3.36)
Model Statistics			
Log Likelihood	-1152.32	-1115.71	-1105.14
Integration points	7	7	7
Wald Chi2		57.79	68.00
df		11	13
p		<.00005	≤.0005
AIC	2308.64	2257.42	2240.29
BIC	2319.69	2329.24	2323.16
LR Test		73.22****	21.13****

Table 131. In brief, criminogenic factors, followed by offence characteristics and demographic factors provided the most explanatory power in program completion amongst Aboriginal offenders referred through a custodial pathway. Demographic characteristics accounted for a lower level of variance in program completion. Past EQUIPS engagement, in terms of having participated in an EQUIPS program in the past, was not associated with program completion for Aboriginal offenders.

Within Criminogenic factors, the likelihood of program completion reduced by 18% for every standard deviation increase in Aboriginal offender's family/marital needs. Despite the 'offence characteristics' and 'history of criminal justice system contact' block making a significant contribution to the model, none of the separate variables that constituted this block was significantly associated with program completion. One demographic factor, age, was significantly associated with completion amongst Aboriginal offenders. For every year older an Aboriginal offender was at referral, there was an associated 2% increase in likelihood of completion.

Stage 2: Factors which may be unique to Aboriginal offenders

Unlike in the full sample, past EQUIPS engagement was not associated with likelihood of completion, suggesting that there may be an interaction effect between Aboriginal status and engagement. Past EQUIPS engagement was included as an interaction term with Aboriginal status but was not found to be statistically significant ($p=.392$).

Operational factors associated with program completion in custody (Analysis 4)

Stage 1: Factors for Aboriginal offenders only

The full results of this model can be observed below in Appendix Table 12. To summarise, employment within a correctional centre at the time of referral was associated with a 48% increase in an Aboriginal offender's likelihood of completion. Timing of referral and program participation were also found to have significant effects of program completion. For every extra month an Aboriginal offender had left on their sentence when they started participating in the program, their likelihood of completion increased by 4%. Each month earlier that Aboriginal offender was referred to a program in their sentence was associated with a 1% increase in their odds of program completion.

Stage 2: Factors which may be unique to Aboriginal offenders

The odds associated with being employed at a correctional centre at the time of referral on program completion appeared to be larger amongst Aboriginal offenders (48% increase) compared to the total offender sample (22% increase), suggesting a potential interaction effect between employment on referral and Aboriginal status. Unlike in the total offender sample, there was no effect of prior EQUIPS program engagement on the likelihood of program completion within Aboriginal offenders. This suggested that there may be an effect between Aboriginal status and program engagement on the likelihood of completion. When interaction terms with Aboriginal status and employment at referral and past EQUIPS program engagement were added into the model within the total offender sample, none of these interaction terms had a significant effect on the likelihood of program completion.

Community Referral Pathway

Individual factors associated with program participation in the community (Analysis 5)

Stage 1: Factors for Aboriginal offenders only

Full results from multilevel models can be found in Appendix Table 13. Likelihood ratio tests identified that EQUIPS engagement made the strongest contribution to the likelihood of program participation among Aboriginal offenders, followed by criminogenic factors and socioeconomic factors. Demographic and offence characteristics made a smaller contribution to the likelihood of program participation.

Repeated referrals were associated with decreased participation: for every extra community-based referral to an EQUIPS program, Aboriginal offenders were 21% less likely to participate. Participation was more likely among Aboriginal offenders with higher criminogenic risk: participation increased by 26% for every increase in a participant's assessed risk category (e.g. from medium to medium-high). Interestingly, despite increased total risk category being associated with an increased likelihood of participation, two criminogenic subdomains were associated with *decreased* participation amongst Aboriginal offenders: Participation decreased by 12% for every standard deviation increase in Attitude/Orientation needs and 7% for every standard deviation increase in Emotional/Personal needs. Amongst socioeconomic factors, participation decreased by 16% for every increase in remoteness category (e.g. from remote to very remote).

Within demographic characteristics, gender was significantly associated with participation, Aboriginal males were 45% more likely to participate in EQUIPS relative to Aboriginal females. Amongst offence characteristics, those with a breach of court order were 58% more likely to participate in programs than 'other' offence types whereas those with a serious violent offence were 30% more likely to participate in programs than 'other' offence types.

Stage 2: Factors which may be unique to Aboriginal offenders

Unlike in the Aboriginal offender sample, LSI-R Risk category was not significantly associated with likelihood of program participation in the full sample for those referred through the community pathway. This suggests that there may be a differential effect between risk category and participation amongst Aboriginal offenders compared to their non-Aboriginal counterparts. Differences in the effect of gender in the Aboriginal and total samples suggested gender may be uniquely related to program participation amongst the Aboriginal sample. Aboriginal males were 45% more likely than Aboriginal females to participate, whereas, in the non-Aboriginal sample, male participants were 24% more likely to participate.

Based on these findings, Risk Category and Gender were both included as interaction terms with Aboriginal status within the total offender sample model. LSI-R Risk category was included as an interaction term with Aboriginal status with medium risk as a reference/comparison category. There was a significant interaction where the difference between medium and high risk was significant between Aboriginal offenders and non-Aboriginal offenders ($OR=1.36, p \leq .047, 95\%CI: 1.00, 1.85$). As illustrated in Figure 5 below, it appeared that the impact of criminogenic risk on the likelihood of program participation was larger within Aboriginal offenders compared to their non-Aboriginal counterparts. Whereas, Aboriginal high-risk offenders were much less likely than their medium risk counterparts to participate in programs that they were referred to, this difference appeared less pronounced amongst non-Aboriginal offenders. A gender and Aboriginal interaction term was tested in the model but was not found to be statistically significant ($p=.272$).

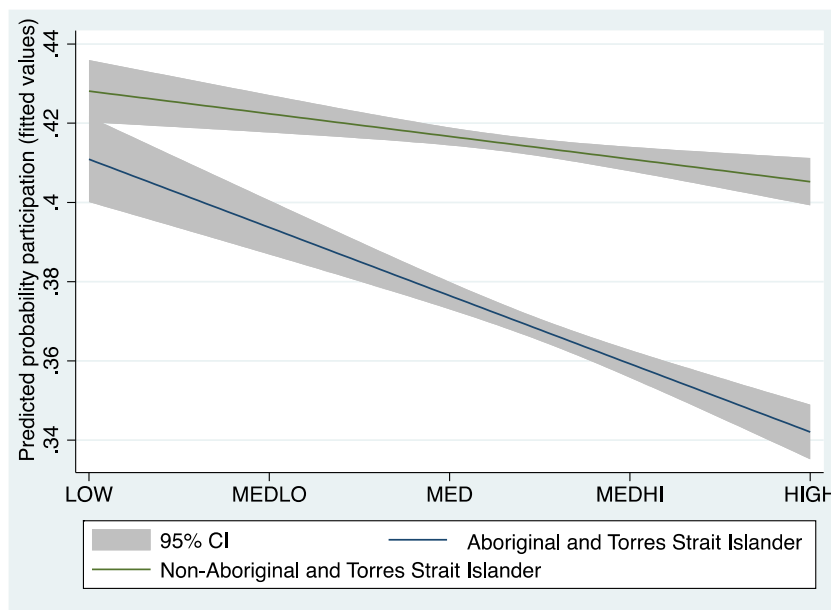


Figure 3 Offenders' LSI-R risk category relative to their completion in EQUIPS programs through the community referral pathway, compared between Non-Aboriginal and Aboriginal offenders. Medium risk was included as a reference/comparison category.

Operational factors associated with program participation in community (Analysis 6)

Stage 1: Factors for Aboriginal offenders only

Full results from multilevel models can be found in Appendix Table 14. In brief, several operational factors were significantly associated with likelihood of program participation amongst Aboriginal offenders referred through the community pathway. Timing of referrals impacted the likelihood of program participation amongst this cohort, whereby each additional month that CSNSW had been delivering EQUIPS programs at the time of an Aboriginal offender's referral decreased their likelihood of program participation by 2%. Every extra month prior to the end of a community sentence at referral increased their participation by 2%. Program type also impacted program participation amongst Aboriginal offenders: referral to Addiction was associated with 46% reduction and referral to Aggression was associated with 61% reduction in likelihood of program participation compared to referral to Foundation. Every extra program referral an Aboriginal offender received through the community pathway was associated with a 10% reduction in program participation.

Stage 2: Factors which may be unique to Aboriginal offenders

There were no clear differences within the results in the total offender sample and in the Aboriginal only sample that warranted testing through interaction terms.

Individual factors associated with program completion in the community (Analysis 7)

Stage 1: Factors for Aboriginal offenders only

Results for this section can be seen in Appendix Table 15. Likelihood ratio tests testing sequential blocks of predictors identified that criminogenic needs made the strongest contribution to the likelihood of program completion amongst Aboriginal offenders, followed by demographics characteristics. Socioeconomic characteristics and previous engagement with EQUIPS made smaller, but significant contributions to the likelihood of program completion. The block pertaining to offence characteristics and history of contact with the criminal justice system did not make a significant contribution to the model.

One criminogenic factor was associated with program completion amongst Aboriginal offenders; completion was reduced by 22% per standard deviation increase in the criminal history domain. Two demographic factors were associated with program completion; Aboriginal males were 52% more likely to complete programs than Aboriginal females, and each year older an offender was at referral increased the likelihood of completion by 4%. Two socioeconomic factors were associated with completion; likelihood of program completion reduced by 15% with every standard deviation increase in Aboriginal offenders' relative social advantage, and likelihood of completion decreased by 85% with every increase in remoteness of Aboriginal offenders' living arrangements (e.g. from remote to very remote). For every unique commencement of an EQUIPS program in the community, there was a 16% increase in the likelihood that an Aboriginal person would complete an EQUIPS program.

Despite its broader block not making a significant contribution to the model, cumulative time in prison was significantly associated with program completion for Aboriginal offenders; program completion decreased by 14% for every standard deviation increase in time spent in prison over an offenders lifetime.

Stage 2: Factors which may be unique to Aboriginal offenders

Amongst Aboriginal offenders, there was no significant relationship found between offenders' assessed Risk Category and their odds of program completion. However, this relationship was significant within the total offender sample (i.e. including both Aboriginal and non-Aboriginal offenders). This suggested there may be an interaction effect between Aboriginal status and risk category, which needed to be investigated. Similarly, several criminogenic risk/needs subdomains, such as accommodation, companions, alcohol and drugs, and education and employment needs all significantly predicted program completion in the total offender cohort. However, these factors were not significantly predictive of completion when tested amongst Aboriginal offenders alone. The differences between the significance of these effects suggested there may also be an interaction between each of these subdomains and Aboriginal status.

Finally, the odds of program completion decreased significantly by 85% for every increase in remoteness of Aboriginal offenders place of residence, whereas there was no significant effect of remoteness on odds of program completion when assessed within the total offender cohort. This difference suggests the impact of remoteness on program completion may be particularly strong amongst Aboriginal people. This suggests there may be an interaction effect between Aboriginal status and remoteness of residence on program completion. Similarly, time spent in prison had a 14% increase in the likelihood of program completion amongst Aboriginal offenders, but only a 7% increase in the likelihood of program completion amongst the total offender cohort. The larger magnitude of this effect within the Aboriginal cohort suggests there may be an interaction effect between Aboriginal Status and prison history on program completion.

A cross-classified multilevel model was conducted testing additional interaction terms, including Aboriginal status with Risk Category; time spent in prison; remoteness of residence; and several criminogenic needs categories (accommodation, companions, drug and alcohol and education and employment). Interaction terms including the following variables were not found to significantly predict the likelihood of program completion: Risk category, time spent in prison, and criminogenic needs categories (accommodation, companions, drug and alcohol and education and employment).

Remoteness of residence significantly predicted program completion ($p \leq .003$, 95%CI: .71, .93). Because the odds ratio associated with being Aboriginal was below 1 (OR=.82), it can be inferred that Aboriginal offenders were less likely than other offenders to complete the program, the more remote their place of residence. Across the non-Aboriginal cohort, there was a general effect that the more remote a person's place of residence, the more likely they were to complete a program they participated in. Figure 6 illustrates this relationship but shows that with the opposite effect occurred for Aboriginal offenders whose residence was 'very remote' being much less likely to complete a program they started than non-Aboriginal offenders living in the areas of the same remoteness.

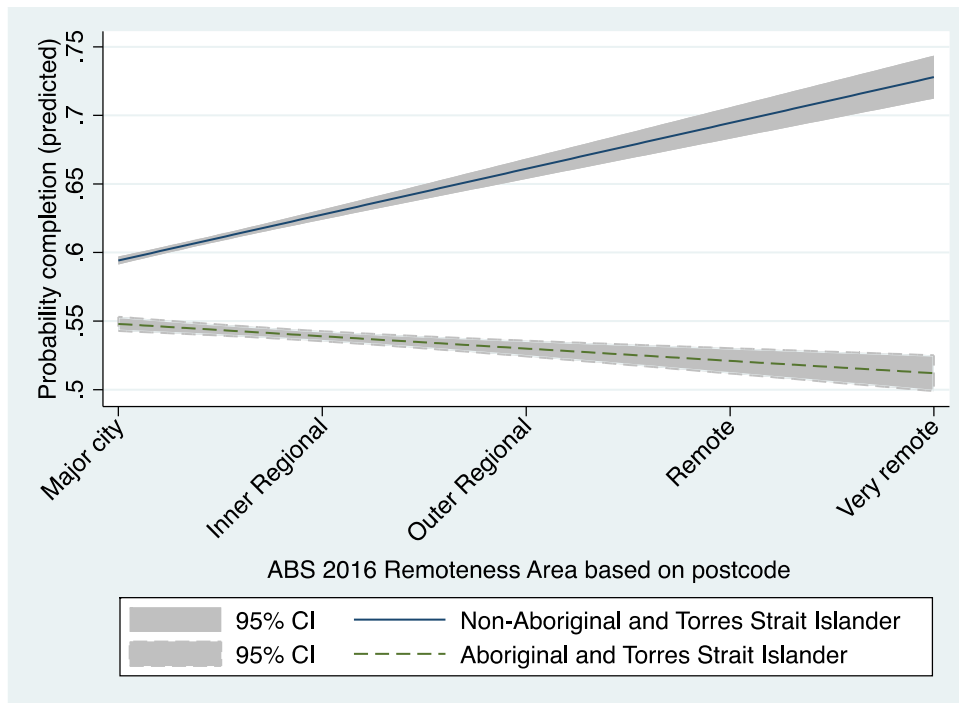


Figure 4 Offenders' remoteness of residence relative to their completion in EQUIPS programs through the community referral pathway, compared between Non-Aboriginal and Aboriginal offenders.

Operational factors associated with program completion in the community (Analysis 8)

Stage 1: Factors for Aboriginal offenders only

Full results can be observed in the Appendix Table 16. In brief, Aboriginal offenders who had parole attached to their sentence were 33% less likely to complete programs than those who did not. Similarly, Aboriginal offenders who did not have to move offices in order to participate in their EQUIPS program were 27% less likely to complete programs than offenders who did have to move. There were no significant effect between timing of program participation within an offender's sentence and program completion amongst this cohort. Aboriginal offenders participating in Domestic Abuse were 36% more likely to complete their program than offenders participating in EQUIPS Foundation.

Stage 2: Factors which may be unique to Aboriginal offenders

Aboriginal offenders who had a parole period appeared to be less likely to complete programs (33% decrease in odds) compared to the the total offender sample on parole (23% decrease in odds), suggesting that there may be a particularly strong effect of parole on reducing the likelihood of program completion amongst Aboriginal offenders. However, unlike in the total offender sample, there was no significant effect of the timing of program participation within an offender's sentence and their likelihood of completion. This suggests that the timing of an offender's program participation may play less of a role in the odds of program completion amongst Aboriginal offenders, compared to their non-Aboriginal counterparts.

When added to the total offender cohort model, the interaction term between Aboriginal status and parole did not significantly impact the likelihood of program completion.

There was, however, a significant interaction between Aboriginal status and the number of months they had remaining on their community sentence when they started participating in a program and the likelihood of program completion (OR=.99, $p \leq .047$, 95%CI: .98, .99). Analysis of the predicted results shown below in Figure 7 suggests that Aboriginal offenders who started programs before the end of their community sentence were less likely to complete programs they started compared to their non-Aboriginal counterparts. If the program started once sentences had lapsed, non-Aboriginal offenders were less likely than their Aboriginal counterparts to complete programs.

The differences in likelihood of program completion between the two cohorts do not appear as apparent amongst those who started their program after their sentence had already ended.

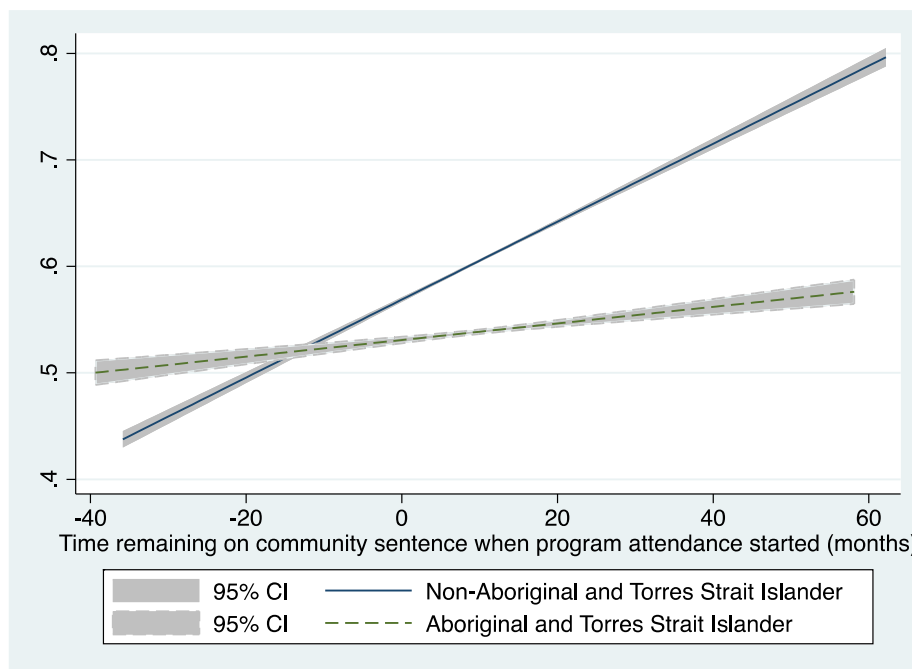


Figure 5 Time (in months) remaining on offenders' community sentence at the time when their program participation started relative to their participation in EQUIPS programs, compared between Non-Aboriginal and Aboriginal offenders. Negative numbers indicate that the community sentence has elapsed.

Aim 3: Examine whether Aboriginal membership in EQUIPS program groups improves program completion among Aboriginal offenders

RESULTS SUMMARY FOR AIM 3

- For those in the **custodial** referral pathway, having at least two or more Aboriginal offenders in a program group increased an Aboriginal offender's odds of completing a program by 94%.
- There was no significant association between Aboriginal group membership and program completion for those in the **community** referral pathway.

Figure 7 illustrates the differences in completion rates between those with and without Aboriginal companionship (i.e. at least one other Aboriginal member) in groups. For those in the custodial referral pathway, having at least two or more Aboriginal offenders in a program group increased an Aboriginal offender's odds of completing a program by 94% (OR: 1.94, $p \leq .001$, 95%CI (1.33, 2.83); full results of this model can be seen in Appendix Table 12. However, this effect was not found for those in the community referral pathway ($p \geq .995$; full results of this model can be seen in Appendix Table 16). This suggests that Aboriginal companionship did not have the same positive impact on completion amongst those referred through the community pathway as it did for those referred through the custodial pathway. These findings were independent of 'class size' (i.e., the number of participants in EQUIPS group) as this factor did not predict the likelihood of program completion in either the custodial or community referral pathway models.

In summary, the inclusion of having at least two Aboriginal offenders in a group made a significant contribution to the model over and above the existing predictors in the custodial referral pathway (Analysis 5), but not in the community referral pathway (Analysis 6).

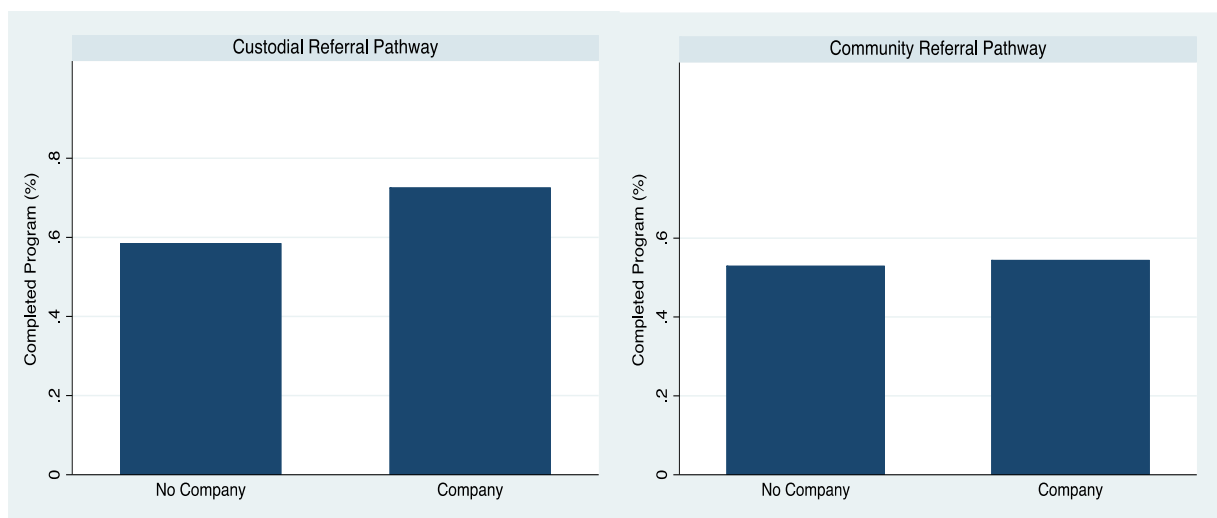


Figure 6 Rates of program completion among Aboriginal offenders for those with and without Aboriginal companionship (at least two Aboriginal members) for in the custodial and community referral pathways.

Discussion

Given the overrepresentation of Aboriginal peoples within the Australian criminal justice system, it is vital to consider both individual- and operational-level factors that may impact the throughput of Aboriginal offenders referred to EQUIPS programs. Aboriginal and non-Aboriginal offenders had similar rates of program participation amongst those referred through the custodial pathway (around 2 in 5 referred offenders participate in programs), however, Aboriginal offenders were significantly less likely to go on to complete these programs compared to their non-Aboriginal counterparts. Aboriginal offenders were also significantly less likely to both participate in and complete programs that they were referred to through the community referral pathway. We note, however, that none of the findings met the threshold for 'practical significance'. We also found differences in participation and completion of certain EQUIPS programs. For example, Aboriginal offenders who commenced the Domestic Abuse program through a custodial referral pathway had lower levels of program completion than non-Aboriginal offenders commencing the same program; this difference was 'practically significant'. The fact that such a strong effect was found for program completion, but not program participation, suggests potential issues with program content or delivery for Aboriginal offenders. The potential complexities around cultural suitability and acceptability of the program content and delivery mode are discussed later in more detail.

Aboriginal offenders were significantly less likely to complete programs through the custodial referral pathway than their non-Aboriginal counterparts, and were significantly less likely to both participate in and complete programs that they were referred to through the community referral pathway.

Factors associated with participation and completion (custodial referral pathway)

Individual-level factors

The individual-level factors most strongly associated with program *participation* of Aboriginal offenders were offence characteristics and history of contact with the criminal justice system, a pattern consistent with that found in the total offender sample. Findings suggest that Aboriginal offenders with more serious offence-types (e.g., those whose most serious index offence was a serious violent offence, a non-serious violent offence, a property offence or a driving offence) were less likely to participate in programs they were referred to relative to those in the 'other' offence category (more minor offence types). Similar to the total offender sample, Aboriginal offenders who had higher drug and alcohol needs were more likely to participate in EQUIPS than those with lower drug and alcohol needs. However, unlike in the total offender sample, Aboriginal offenders with higher financial needs were significantly more likely to participate than those with lower needs in these areas. These findings suggest that Aboriginal offenders with higher needs in substance use and financial deprivation may have been particularly well-supported to access EQUIPS programs required to meet these needs. Similar to the total offender sample, Aboriginal offenders who were referred more times prior to their index referral were less likely to participate than those who had been referred fewer times.

Aboriginal offenders with higher substance use and financial needs may have been particularly well-supported to access EQUIPS programs required to meet these needs.

Factors associated with *completion* amongst Aboriginal offenders, however, seem to diverge from those identified for the total offender sample. Criminogenic factors were the strongest predictor of program completion amongst Aboriginal offenders, followed by offence characteristics and demographic characteristics. These individual-level results were found irrespective of program type. The reverse pattern was observed in the total offender sample, where offence characteristics were the strongest predictor of program completion, followed by criminogenic factors. Because criminogenic needs made a stronger contribution to Aboriginal offenders' likelihood of completion, relative to their offence characteristics, this implies that higher risk offenders are more prone to attrition and focus could be on retaining this offender group in EQUIPS programs. Similar to the total offender cohort, Aboriginal offenders who were older and had fewer family/marital criminogenic needs were more likely to complete programs than those who were younger and had more family/marital needs. However, unlike in the total offender sample, past engagement with EQUIPS programs (having participated in an EQUIPS program in the past) was not associated with an increased likelihood of program completion amongst Aboriginal offenders.

Operational-level factors

Similar to the total offender sample, Aboriginal offenders who were involved in education at the time of referral were more likely to *participate* in programs. Aboriginal offenders who were employed were also more likely to both *participate* in and *complete* EQUIPS programs. In Report Two, we described offenders' employment/education involvement as a potential proxy for having the motivation, cognitive and functional capacity to be involved in custodial activities and other self-development activities. Lastly, Aboriginal offenders who were referred and commenced EQUIPS participation earlier in their sentence were more likely to both participate in and complete the program.

Aboriginal offenders who commenced participation earlier in their custodial sentence were more likely to participate in and complete the EQUIPS programs.

Differences between Aboriginal and non-Aboriginal samples

Based on exploratory examination of the data and notable areas of difference between the Aboriginal-only offender sample and the total offender sample, we tested whether some predictors of program participation and completion differed significantly between Aboriginal and non-Aboriginal offenders. Having higher financial needs increased the likelihood of participating in programs for Aboriginal offenders but tended to reduce the likelihood of program participation amongst non-Aboriginal offenders. This phenomenon may be explained by 'rock bottom' theory, a phenomenon when reaching 'rock bottom' can be a pathway to developing 'recovery capital'. This theory posits that when people feel that they have reached a particularly negative turning point, such as high loss of financial resources, individuals can be motivated to try and maintain, protect and rebuild their resources and can be a nexus for personal change (Chen, 2018).

Low to medium risk Aboriginal offenders referred via custody were much less likely to participate in programs than their low to medium risk non-Aboriginal counterparts.

The relationship between criminogenic risk and program participation was also found to differ significantly amongst Aboriginal and non-Aboriginal offenders. Low to medium risk Aboriginal offenders who were referred to EQUIPS were much less likely to participate in programs than their low to medium risk non-Aboriginal counterparts. This suggests that Aboriginal offenders who are assessed as having a relatively

lower risk of reoffending may need more support to participate in programs. Similarly, Aboriginal offenders who had a Serious Violent Offence as their most serious offence were significantly less likely than their non-Aboriginal counterparts to participate in programs they were referred to. This suggests that these offenders experience unique barriers to participating in programs.

Other observed differences between Aboriginal and non-Aboriginal groups were not significant when a statistical test was applied. For example, having participated in more than one EQUIPS program before one's index participation did not have a differential effect on program completion between the two groups. Similarly, whilst the relationship between employment and program completion appeared particularly strong amongst Aboriginal offenders, no significant difference between Aboriginal and non-Aboriginal offenders was found in the relationship between employment and program completion.

Factors associated with participation and completion (community referral pathway)

Individual-level factors

The strongest individual-level predictor of Aboriginal offenders' program participation was past EQUIPS engagement, where having had more referrals for EQUIPS in the past reduced the likelihood Aboriginal offenders would participate in programs on their next referral. Following this, criminogenic and socioeconomic factors made the second and third strongest contribution to the likelihood of program participation and demographic and offence characteristics made the smallest contribution. Aboriginal offenders who had a higher assessed criminogenic risk were significantly more likely to participate in programs than those of lower criminogenic risk. This suggests that Aboriginal offenders who are most at-need of programs are those who are most likely to participate. Aboriginal offenders with higher emotional/personal and attitude/orientation needs were less likely to participate in programs they were referred to; Aboriginal women were less likely to participate than Aboriginal men; and Aboriginal offenders who lived in more remote regions were less likely to participate in programs they were referred to than those in less remote regions. Most of these findings were similar to those found amongst the total offender sample.

Aboriginal offenders in the community referral pathway who had higher criminogenic risk were significantly more likely to participate in programs than those of lower criminogenic risk.

Aboriginal offenders whose most serious offence was a Serious Violent Offence or a breach of court order were more likely to participate in programs they were referred to than those whose most serious offence was in the 'other' category (a miscellaneous grouping of generally less serious offences). This may suggest Aboriginal people with certain types of offences may be more motivated to get treatment to meet their offending needs than others. Given that several of the EQUIPS programs - Domestic Abuse and Aggression – specifically target aggressive or abusive behaviours, it is perhaps unsurprising that those with serious violent offences may be more motivated to participate in programs when they are directly targeting the behaviours linked with their offence.

Similar to models assessing predictors of program participation, Aboriginal offenders' criminogenic needs were the strongest predictors of program completion in the community referral pathway, followed by demographic characteristics. Aboriginal offenders with a higher 'criminal history' needs score, indicating a more extensive history of involvement with criminal

Aboriginal offenders with a more extensive history of criminal involvement were less likely to complete programs via the community referral pathway

activities, were less likely to complete programs they commenced than those with lower scores. This suggests that those who are entrenched in criminal behaviour and lifestyles may be missing out on the therapeutic benefits that completing programs may provide. Unfortunately, whilst Aboriginal offenders with higher criminogenic risk may have been more likely to participate in programs, they were not more likely to complete them. Further research and strategy

would be useful to increase engagement among this group overall. One option could be to consult with higher risk Aboriginal offenders to find ways to improve their experience of program participation and delivery and better support them to complete programs they commence.

Just as they were more likely to participate in programs, Aboriginal men were more likely to complete programs that they were referred to than Aboriginal women. As well as being more likely to participate in programs, Aboriginal offenders who lived in more remote regions were significantly less likely to complete programs they were referred to than those in less remote regions. Older Aboriginal offenders were significantly more likely to complete programs that they started relative to younger Aboriginal men. Aboriginal offenders with higher relative social advantage were less likely to complete than those with lower relative social advantage. These findings were similar to what was found amongst the total offender sample.

The finding that remoteness of an offender's residence is associated with reduced program participation and completion stands to reason as the distance is likely greater between a person's residence and the community correction offices within remote and very remote areas, creating a barrier to program participation. A significant interaction term showed that the negative impact of remoteness on completion was particularly strong for Aboriginal offenders.

Aboriginal offenders in more remote areas tended to be much less likely to complete programs they had commenced relative to non-Aboriginal offenders living in similarly remote areas.

Aboriginal offenders in more remote areas tended to be much less likely to complete programs they had commenced relative to non-Aboriginal offenders living in similarly remote areas. Research suggests that Aboriginal people living in remote areas have little access to public transport and many have no access to a car, which can greatly disadvantage them in their access to programs and services (Rosier & McDonald, 2011). This finding may also be reflective, more broadly, of the more pronounced social divide and disadvantage between Aboriginal and non-Aboriginal people in remote areas.

Operational-level factors

Aboriginal offenders who were referred earlier in their sentence were more likely to participate in that program. The more EQUIPS program referrals Aboriginal offenders had received prior to their index referral, the less likely they were to participate in the program. This effect was also found in the total offender sample. Also, Aboriginal offenders who had to move between different community corrections offices to participate in a program were more likely to complete. When we found this same effect amongst the total offender sample in Report Two, we discussed that this effect could be because particular office locations may have better suited the location and needs of the offender, which may have improved their likelihood of participation.

The longer that the EQUIPS program had been running through CSNSW at the time of an offender's referral, the less likely they were to participate. It may be that the longer a program had been delivered, the less novelty the program may hold for those who are referred to it.

Aboriginal offenders who were referred to Addiction and Aggression were significantly less likely to participate in programs they were referred to relative to offenders referred to Foundation. This was also the case for the total offender sample.

Several operational-level predictors were associated with program completion amongst the community referral pathway. Aboriginal offenders who participated in Domestic Abuse were more likely than those who participated in Foundation, to complete these programs. This is similar to what was found for the total sample. Aboriginal offenders who started participating in an EQUIPS program longer after the initial launch of EQUIPS programs by CSNSW were more likely to complete that program. A possible explanation is that improvements in streamlining the program content and delivery over time increased the likelihood of participant completion.

Aboriginal offenders with parole attached to their sentence were less likely to complete programs. This may be reflective of the challenges of participating in a program post-incarceration during a Parole/Conditional Release period.

Aboriginal offenders who had parole attached to their sentence were less likely to complete programs at any time during their sentence (i.e., both whilst in custody and on parole). This finding may be reflective of the experience of participating in a program post-incarceration during a Parole/Conditional Release period. For these individuals, the often tumultuous experiences of 'getting back to normal' after release from prison may be a barrier to participating in and completing a program (Carlton & Segrave, 2016). Comparatively, those undertaking EQUIPS whilst on a community sentence, but not whilst on parole post-release from custody, may be relatively more stabilised in their communities to participate in programs.

Differences between Aboriginal and non-Aboriginal samples

Because the timing of earlier program participation had no effect on completion amongst Aboriginal offenders as it did in the total offender population, we tested whether timing may have a differential effect amongst Aboriginal and non-Aboriginal offenders. We found that the change in completion rates relative to timing was less pronounced amongst Aboriginal than non-Aboriginal offenders. Non-Aboriginal people were much more likely to complete programs if they had started the program during their community sentence than if they started the program after their community sentence had lapsed. In contrast, Aboriginal offenders were only slightly more likely to complete programs started during their community sentence than after their sentence had lapsed, relative to their already lower levels of completion.

Aboriginal offenders assessed as having a higher risk of reoffending had an increased likelihood of program participation – a finding that did not occur within the total offender sample. However, further analyses revealed a significant relationship between Aboriginal status, risk and participation but in the opposite direction. Aboriginal high-risk offenders were much less likely than Aboriginal medium-risk offenders to participate in programs that they were referred to and that this difference was much more pronounced than amongst non-Aboriginal offenders.

Individual-level predictors of reduced likelihood of completion amongst the total offender sample were not found amongst the Aboriginal offender sample, e.g. numerous criminogenic needs domains including accommodation, companions, alcohol and drug needs and education and employment. This led us to investigate whether Aboriginal offenders may have been protected against these barriers to program completion. This was not found to be the case, as no difference was found between these variables and program completion in Aboriginal and non-Aboriginal offenders.

Comparing custodial and community referral pathways

Although the current study used models did not make direct comparisons between different referral pathways, we can make general inferences based on the factors that were associated with variance in program participation and completion. As is the same in the total offender sample, one of the primary differences between the two pathways amongst Aboriginal offenders was that socioeconomic and demographic factors appeared to make a stronger contribution to the likelihood of program participation in the community than the custodial referral pathway. Whereas socioeconomic and demographic factors were the weakest predictors of program participation in the custodial pathway, following past EQUIPS engagement, they were some of the stronger drivers of participation in the community-based pathway. Comparatively, sentencing characteristics were one of the weakest predictors of program participation amongst those in the community referral pathway, relative to socioeconomic factors and criminological factors.

Socioeconomic and demographic factors made a stronger contribution to likelihood of program participation in the community than the custodial referral pathway. This suggests aspects of the custodial pathway may be protective against some of the individual-level barriers in program engagement

Moreover, a wider variety of criminological risk/needs factors were barriers to participation through the community pathway than in the custodial pathway. Whilst higher criminogenic needs appeared to act as a facilitator of program participation in the custodial pathway (where those with financial and/or alcohol and drug needs showed an increased likelihood of participation), higher criminogenic needs acted as a barrier in the community pathway (with higher emotional/personal and attention/orientation needs being associated with reduced likelihood of participation in community referral settings. Criminogenic needs were barriers to program completion in both community referral pathway (for criminal history needs), and custodial referral pathway settings (for family/marital needs).

The finding that individual-level factors had a stronger impact on Aboriginal offender program throughput in community, but not in custodial settings, suggests that aspects of the custodial pathway may be protective against some of their individual-level barriers in program engagement. Other research has also identified the way that people undertaking programs in the community have more obstacles and competing concerns to negotiate, such as employment, family obligations and transport, that pose less of an obstacle in prison settings (McMurrin & Theodosi, 2007). In a similar vein, Aboriginal women were less likely to participate in and complete programs in community settings, but not custodial settings, which suggests that other external pressures within the community, such as caring roles rather than motivation, may pose a barrier to Aboriginal women in the community participating in programs.

Another difference between the community versus custodial referral pathway in the Aboriginal sample, which replicated differences found in the total offender sample, was the type of EQUIPS program that offenders were more likely to complete. In the custodial pathway, offenders referred to Aggression were significantly less likely to participate in programs than those referred to Foundation. It is possible that in custodial settings where there is less privacy, it may be more stigmatising to be seen attending the Aggression program. Or this may be due to operational factors in the custodial system such as the running of similar programs at the same time (e.g.,

VOTP). In the community pathway, offenders who were referred to Addiction or Aggression were much more likely to participate than those referred to Foundation. Program completion rates also differed according to program type: in the community, offenders who participated in Domestic Abuse were significantly more likely to complete that program than offenders who participated in Foundation. In the custodial context, offenders who participated in Addiction and Aggression were more likely to complete than those who participated in Foundation.

In both custody and community referral pathways, Aboriginal offenders who had been referred to EQUIPS more than once through the same referral pathway over the study period were less likely to participate in a single given program than offenders who had been referred fewer times. In Report Two, we discussed how this phenomenon seemed to reflect a cohort of offenders who, upon repeated referrals, continued to avoid participating. This may also illustrate order effects as this group may potentially continue to receive referrals when they do not engage with the

Aboriginal offenders in the community referral pathway who participated in more EQUIPS programs were more likely to complete these programs. This same effect was not detected in the custodial referral pathway and may suggest that a high functioning Aboriginal cohort who may be more likely to participate in multiple programs may be less prominent in the custodial referral pathway than in the community referral pathway.

program. On the other hand, this report also found that Aboriginal offenders in the community referral pathway who participated in more EQUIPS programs were more likely to complete these programs. This finding speaks to a possibility that programs are catering to a group that has a level of functional capacity or willingness to adhere to the requirements of their sentence. Because this same effect was not detected in the custodial referral pathway suggests that this high functioning Aboriginal cohort who may be more likely to participate in multiple programs may be less prominent in the custodial referral pathway than in the community referral pathway. Taken together, these findings place increased importance on the need to support high-risk Aboriginal offenders as they may be less motivated or have less capacity to engage, participate in and complete EQUIPS programs. Thus ensuring that the provision of EQUIPS programs leads to the best possible outcomes on reoffending.

There was also a different relationship between criminogenic risk and program throughput of Aboriginal offenders in each of the referral pathways. In the custodial pathway, referred low-risk Aboriginal offenders were less likely to participate in EQUIPS programs than low-risk non-Aboriginal offenders. In the community referral pathway, high-risk offenders were less likely to complete programs than high-risk non-Aboriginal offenders. While both findings highlight the barriers to Aboriginal program involvement, the latter finding is particularly concerning as it suggests that Aboriginal offenders who may have the most to gain from programs in terms of reducing reoffending, may be those who are least likely to complete the treatment.

Aboriginal membership in EQUIPS program groups

The individual- and operational-level factors that acted as barriers to Aboriginal offenders' participation and completion of EQUIPS programs revealed how important it is to find ways to support Aboriginal offenders' throughput in programs. Fortunately, the final finding of this report identified how a simple change, such as altering the composition of program groups, could strengthen the likelihood that Aboriginal offenders would complete the programs they commenced. We found that Aboriginal offenders referred through the custodial pathway who were participating in groups that included two or more Aboriginal persons were significantly more

likely to complete these programs compared to when they were the only Aboriginal group member. This effect remained while controlling for other operational predictors of program completion. CSNSW acknowledges the importance of group composition for Aboriginal offenders as evidenced through their Aboriginal High Intensity Program Units (HIPUs) (NSW Inspector of Custodial Services, 2020). Interestingly, this same effect did not occur in the community referral pathway. It may be that factors such as safety, group solidarity and cohesion among cultures are more relevant and important within the custodial context compared to the community. Further research could be conducted with Aboriginal offenders referred across both pathways to explore this phenomenon further and elucidate potential mechanisms for this association.

Implications

The findings in this report highlight several implications, including opportunities for future program planning, delivery and research. First and foremost, this report suggests ways to further support Aboriginal peoples to participate in and complete programs, particularly in community settings. This could include encouraging program referrals of Aboriginal offenders to occur earlier within custodial sentences, so that they may then participate in these programs earlier in their sentence with adequate time to complete them.

The finding that Aboriginal offenders, particularly higher-risk Aboriginal offenders, are less likely to complete programs they commence, suggests that something about the program content or delivery may be prompting them to drop out.

This report revealed a number of barriers to EQUIPS program throughput for Aboriginal offenders through both the custodial and community referral pathways. The finding that high-risk Aboriginal offenders are less likely to complete programs they commenced relative to non-Aboriginal offenders suggests that there may be something about the program content or delivery that is prompting them to drop out. Whilst a deeper exploration of this phenomenon is beyond the scope of this report, international research tells us that changing the delivery of programs to be more culturally appropriate can have a beneficial effect on

Aboriginal offenders' program throughput. For example, we know that Indigenous participants often prefer Indigenous facilitators to allow for greater communication and cultural competency (Cabral & Smith, 2011; Mals et al., 2000; McMurrin & McCulloch, 2007a). With informed facilitators leading programs, a more focused approach can be taken towards tailoring programs to overcome factors that can lead to non-completion, including approaches that incorporate understandings of intergenerational trauma and Social and Emotional Wellbeing (Heffernan, Andersen, McEntyre, & Kinner, 2014).

Similarly, the finding that Aboriginal offenders were significantly less likely to complete Domestic Abuse relative to other programs in both the community and custodial referral pathways, suggests that there may be factors at play that compromise responsivity amongst Aboriginal offenders. In the introduction section of this report, we described the way that Aboriginal peoples can differ strongly from western populations in their cultural definitions of family relationships (Shepherd & Phillips, 2016b) and their cultural constructions of 'anger' can be shaped heavily by their shared history of intergenerational trauma (Day et al., 2008; Day et al., 2006). These are two constructs that are likely to feature heavily within the Domestic Abuse program and show that Western framing of these concepts may be ill-fitted to Aboriginal offender populations. More research could be carried out to explore how Aboriginal offenders experience all EQUIPS programs and EQUIPS Domestic Abuse in particular.

This report also reveals opportunities to provide further support to Aboriginal offenders living in more remote areas to participate in and complete EQUIPS programs through the community referral pathway. Community consultation with Aboriginal communities in remote NSW could provide enhanced understanding of the barriers to program participation and completion, and also result in co-produced strategies to facilitate better treatment access. For example, it is possible that creating more flexible means of program participation (e.g., virtual participation) or more flexible timing and appointment structures may go some way toward bridging this gap.

Strengths and Limitations

A major strength of this study was the large, comprehensive dataset which allowed for the examination of multiple predictors in understanding program participation and completion among Aboriginal offenders. However, we note that due to the large sample size, the study is sensitive to detection of small effects, which may not necessarily correspond to a meaningful effect. For this reason, we have indicated the size of effect where relevant (using odds ratios and Cramer's V) and a caution in cases where the effect size is small. A sophisticated cross-classified statistical approach was employed to address the complex nature of this administrative dataset, to take into account intersecting sources of variance. Accordingly, the analysis was able to account for the effects of multiple referrals, location of program delivery and different program on participation outcomes.

The reliance on administrative data limited the selection of predictors to those readily available and meant that proxies were used to approximate outcomes of interest. There could be important psychological factors that account for program participation and completion that were not available to include in analyses. For example, Aboriginal offenders' attitude/orientation needs were associated with a decreased likelihood of participation in the community pathway, suggesting that offender's personal capacity to engage in programs could be a primary barrier to participation. However, it is hard to disentangle how much of this effect may be due to the failure of referral and program practice to meet the needs of Aboriginal offenders. Moreover, measurement tools, including the LSI-R, rely on Western conceptions of criminological needs and risk, which have been identified as being potentially inappropriate for Aboriginal offenders. Future research may benefit from qualitative interviews with Aboriginal offenders at each stage of the referral process for a more nuanced understanding of the subjective barriers to program participation and completion; leveraging off existing Aboriginal leadership and expertise in this area to co-design and redevelop program design and delivery, to maximise Aboriginal offender throughput.

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Conclusion

In this study Aboriginal offenders were significantly less likely to participate in programs they were referred to in the community referral pathway and were also less likely to complete programs they were referred to and commenced in both the community and custodial referral pathways. Just as it was found for the total cohort of offenders, the individual and operational factors associated with program participation and completion amongst Aboriginal offenders appeared to be different within the community and custodial referral pathways. Criminological and sentencing characteristics made a stronger contribution to program participation relative to socioeconomic and demographic factors in the custodial pathway, whereas the opposite pattern occurred within the community referral pathway. There are several implications of these findings in terms of reducing barriers to Aboriginal offenders' EQUIPS throughput. Results showed that Aboriginal offenders face many individual-level barriers to participating in EQUIPS programs, particularly criminological risk domains, age and female gender. Operational issues were also of importance, such as timing program delivery earlier within the sentence and engaging Aboriginal offenders who may not be involved in other centre activities like education and/or employment. Some barriers to program participation were unique to community settings, including sociodemographic and history of criminal justice involvement. However, a key finding of this report was in terms of Aboriginal membership of EQUIPS program groups. Specifically, having at least two or more Aboriginal offenders within a program group significantly improved these offenders' likelihood of program completion. This improved understanding of factors associated with Aboriginal offenders' participation and completion of EQUIPS programs provides critical knowledge about how to maximise the implementation and efficacy of relevant offender treatment programs.

References

- ABS. (2020). *Corrective Services, Australia*. Canberra Retrieved from <https://www.abs.gov.au/statistics/people/crime-and-justice/corrective-services-australia/sep-quarter-2020>
- Andrews, D. A., & Bonta, J. (2001). *Level of Service Inventory–Revised (LSI-R): User’s manual*. . North Tonawanda, NY: Multi-Health Systems.
- Andrews, D. A., Bonta, J., & Wormith, J. S. (2011). The Risk-Need-Responsivity (RNR) Model: Does Adding the Good Lives Model Contribute to Effective Crime Prevention? *Criminal Justice and Behavior, 38*(7), 735-755. doi:10.1177/0093854811406356
- Baldry, E., McCausland, R., Dowse, L., McEntyre, E., & MacGillivray, P. (2016). 'It's just a big vicious cycle that swallows them up' : Indigenous people with mental and cognitive disabilities in the criminal justice system. *Indigenous law bulletin, 8*(22), 10-16.
- Cabral, R. R., & Smith, T. B. (2011). Racial/ethnic matching of clients and therapists in mental health services: a meta-analytic review of preferences, perceptions, and outcomes. *J Couns Psychol, 58*(4), 537-554. doi:10.1037/a0025266
- Carlton, B., & Segrave, M. (2016). Rethinking women’s post-release reintegration and ‘success’. *Australian & New Zealand Journal of Criminology, 49*(2), 281-299. doi:10.1177/0004865815573876
- Chen, G. (2018). Building Recovery Capital: The Role of “Hitting Bottom” in Desistance and Recovery from Substance Abuse and Crime. *Journal of Psychoactive Drugs, 50*(5), 420-429. doi:10.1080/02791072.2018.1517909
- Cohen, J. (1992). A power primer. *Psychol Bull, 112*(1), 155-159. doi:10.1037//0033-2909.112.1.155
- Cohen, T. H., & Whetzel, J. (2014). The Neglected R-Responsivity and the Federal Offender. *Fed. Probation, 78*, 11.
- Crites, E. L., & Taxman, F. S. (2013). The responsivity principle: determining the appropriate program and dosage to match risk and needs. In F. S. Taxman & A. Pattavina (Eds.), *Simulation Strategies to Reduce Recidivism* (pp. 143-166). New York: Springer.
- CSNSW. (2020). *Compendium of Offender Behaviour Change Programs*. (D16/378421). Sydney
- Day, A., Davey, L., Wanganeen, R., Casey, S., Howells, K., & Nakata, M. (2008). Symptoms of Trauma, Perceptions of Discrimination, and Anger: A Comparison Between Australian Indigenous and Nonindigenous Prisoners. *Journal of interpersonal violence, 23*(2), 245-258. doi:10.1177/0886260507309343
- Day, A., Davey, L., Wanganeen, R., Howells, K., Desantolo, J., & Nakata, M. (2006). The Meaning of Anger for Australian Indigenous Offenders: The Significance of Context. *International journal of offender therapy and comparative criminology, 50*(5), 520-539. doi:10.1177/0306624X06286971
- Doyle, M. F., Guthrie, J., Butler, T., Shakeshaft, A., Conigrave, K., & Williams, M. (2020). Onset and trajectory of alcohol and other drug use among Aboriginal men entering a prison treatment program: A qualitative study. *Drug and Alcohol Review, 39*(6), 704-712.
- Ferguson, C. J. (2009). An effect size primer: A guide for clinicians and researchers. *Professional Psychology: Research and Practice, 40*(5), 532-538. doi:10.1037/a0015808
- Gutierrez, L., Chadwick, N., & Wanamaker, K. A. (2018). Culturally Relevant Programming versus the Status Quo: A Meta-analytic Review of the Effectiveness of Treatment of Indigenous Offenders. *Canadian journal of criminology and criminal justice, 60*(3), 321-353. doi:10.3138/cjccj.2017-0020.r2

- Heffernan, E., Andersen, K., McEntyre, E., & Kinner, S. (2014). Mental Disorder and Cognitive Disability in the Criminal Justice System. In P. Dudgeon, H. Milroy, & R. Walker (Eds.), *Working Together: Aboriginal and Torres Strait Islander Mental Health and Wellbeing Principles and Practice* (Vol. 2): Commonwealth of Australia.
- Holdsworth, E., Bowen, E., Brown, S., & Howat, D. (2019). Using Theory to Understand the Barriers to Engagement in Group Offending Behavior Programs. *International Journal of Offender Therapy and Comparative Criminology*, *63*(7), 993-1017.
doi:10.1177/0306624x18812040
- JH&FMHN. (2017). *Network Patient Health Survey – Aboriginal People’s Health Report 2015*. Sydney Retrieved from <https://www.justicehealth.nsw.gov.au/publications/2015NPHSReportAboriginalPeoplesHealthReport.pdf>
- Jones, C. (2016). *Efficacy, accessibility and adequacy of prison rehabilitation programs for Indigenous offenders across Australia*. Melbourne, Victoria: Australasian Institute of Judicial Administration Incorporated.
- Juarez, T., & Howard, M. (2018). *Assessing offender change over treatment: The influence of treatment context on self-reported antisocial attitudes*. (37). Corrective Services New South Wales: New South Wales Government
- Khalilzadeh, J., & Tasci, A. D. A. (2017). Large sample size, significance level, and the effect size: Solutions to perils of using big data for academic research. *Tourism Management*, *62*(C), 89-96.
- Leguizamo, A., Beliveau, P. A., Uber, J. M., Burnham, S., Conrad, M., & Zike, N. (2018). Diversity Considerations in the Application of Evidence-Based Interventions with Forensic Clients. In E. L. Jeglic & C. Calkins (Eds.), *New Frontiers in Offender Treatment: The Translation of Evidence-Based Practices to Correctional Settings* (pp. 127-144). Cham: Springer International Publishing.
- Macdonald, P. L., & Gardner, R. C. (2000). Type I Error Rate Comparisons of Post Hoc Procedures for I j Chi-Square Tables. *Educational and Psychological Measurement*, *60*(5), 735-754.
doi:10.1177/00131640021970871
- Mals, P., Howells, K., Day, A., & Hall, G. (2000). Adapting Violence Rehabilitation Programs for the Australian Aboriginal Offender. *Journal of offender rehabilitation*, *30*(1-2), 121-135.
doi:10.1300/J076v30n01_08
- Mann, R. E., Hanson, R. K., & Thornton, D. (2010). Assessing risk for sexual recidivism: Some proposals on the nature of psychologically meaningful risk factors. . *Sexual Abuse: A Journal of Research and Treatment*, *22*(1), 191-217.
- McCausland, R., McEntyre, E., & Baldry, E. (2018). Institutions of Default and Management: Aboriginal Women with Mental and Cognitive Disability in Prison. In (pp. 185-210). Cham: Springer International Publishing.
- McMurrin, M., & McCulloch, A. (2007a). Why don't offenders complete treatment? Prisoners' reasons for non-completion of a cognitive skills programme. *Psychology, crime & law*, *13*(4), 345-354. doi:10.1080/10683160601060424
- McMurrin, M., & McCulloch, A. (2007b). Why don't offenders complete treatment? Prisoners' reasons for non-completion of a cognitive skills programme. *13*(4), 345-354.
doi:10.1080/10683160601060424
- McMurrin, M., & Theodosi, E. (2007). Is treatment non-completion associated with increased reconviction over no treatment? *Psychology, Crime & Law*, *13*(4), 333-343.
doi:10.1080/10683160601060374
- O'Keeffe, D., Turner, N., Foley, S., Lawlor, E., Kinsella, A., O'Callaghan, E., & Clarke, M. (2016). The relationship between mental health literacy regarding schizophrenia and psychiatric stigma in the Republic of Ireland. *J Ment Health*, *25*(2), 100-108.
doi:10.3109/09638237.2015.1057327

- Ogloff, J. R. P., Pfeifer, J. E., Shepherd, S. M., & Ciorciari, J. (2017). Assessing the Mental Health, Substance Abuse, Cognitive Functioning, and Social/Emotional Well-Being Needs of Aboriginal Prisoners in Australia. *Journal of correctional health care*, 23(4), 398-411. doi:10.1177/1078345817723345
- Olver, M. E., Stockdale, K. C., & Wormith, J. S. (2011). A meta-analysis of predictors of offender treatment attrition and its relationship to recidivism. *J Consult Clin Psychol*, 79(1), 6-21. doi:10.1037/a0022200
- Olver, M. E., & Wong, S. (2011). Predictors of sex offender treatment dropout: psychopathy, sex offender risk, and responsivity implications. *Psychology, Crime & Law*, 17(5), 457-471. doi:10.1080/10683160903318876
- Perdacher, E., Kavanagh, D., & Sheffield, J. (2019). Well-being and mental health interventions for Indigenous people in prison: systematic review. *BJPsych Open*, 5(6). doi:10.1192/bjo.2019.80
- Research, N. B. o. C. S. a. (2020). *NSW Custody Statistics: Quarterly update September 2020*. Retrieved from https://www.bocsar.nsw.gov.au/Pages/bocsar_publication/Pub_Summary/custody/NSW-Custody-Statistics-Quarterly-update-Sept2020.aspx
- Rosier, K., & McDonald, M. (2011). *The relationship between transport and disadvantage in Australia*: Australian Institute of Family Studies.
- Ross, R. R., & Fabiano, E. A. (1985). *Time to think: A cognitive model of delinquency prevention and offender rehabilitation*: Inst of Social Sc & Arts Incorporated.
- Sachs, N. M., & Miller, J. (2018). Beyond Responsivity: Client Service Engagement in a Reentry Demonstration Program. *International Journal of Offender Therapy and Comparative Criminology*, 62(13), 4295-4313. doi:10.1177/0306624x18763762
- Services, I. o. C. (2020). *Programs, Employment and Education Inspection*. Sydney
- Shepherd, S. M., & Phillips, G. (2016a). Cultural 'Inclusion' or Institutional Decolonisation: How should prisons address the mental health needs of Indigenous prisoners? In S. M. Shepherd (Ed.), (Vol. 50, pp. 307-308).
- Shepherd, S. M., & Phillips, G. (2016b). Cultural 'Inclusion' or Institutional Decolonisation: How should prisons address the mental health needs of Indigenous prisoners? *Australian & New Zealand Journal of Psychiatry*, 50(4), 307-308. doi:10.1177/0004867415616696
- Sturgess, D., Woodhams, J., & Tonkin, M. (2016). Treatment Engagement From the Perspective of the Offender: Reasons for Noncompletion and Completion of Treatment—A Systematic Review. *International journal of offender therapy and comparative criminology*, 60(16), 1873-1896. doi:10.1177/0306624X15586038
- Sun, S., Pan, W., & Wang, L. L. (2010). A comprehensive review of effect size reporting and interpreting practices in academic journals in education and psychology. *Journal of Educational Psychology*, 102(4), 989-1004. doi:10.1037/a0019507
- Wales, M. H. C. o. N. S. (2017). *Incarceration rates of Aboriginal and Torres Strait Islander Peoples: Submission to the Australian Law Reform Commission by the Mental Health Commission of NSW*. Retrieved from https://nswmentalhealthcommission.com.au/sites/default/files/documents/submission_-_australian_law_reform_commission_-_incarceration_rates_of_aboriginal_-_final_eo_edits.pdf
- Wan, W.-Y., Poynton, S., van Doorn, G., & Weatherburn, D. (2014). *Parole supervision and reoffending*. Retrieved from Canberra:
- Ward, T., Day, A., Howells, K., & Birgden, A. (2004). The multifactor offender readiness model. *Aggression and Violent Behavior*, 9(6), 645-673. doi:10.1016/j.avb.2003.08.001
- Weier, M., Dolan, K., Powell, A., Muir, K., & Young, A. (2019). *Money Stories: Financial Resilience among Aboriginal and Torres Strait Islander Australians 2019*. Retrieved from UNSW Sydney:

- Working together : Aboriginal and Torres Strait Islander mental health and wellbeing principles and practice.* (2010). Canberra: Australian Institute of Health and Welfare.
- Wormith, J. S., & Olver, M. E. (2002). Offender Treatment Attrition and its Relationship with Risk, Responsivity, and Recidivism. *29*(4), 447-471. doi:10.1177/0093854802029004006
- Wormith, J. S., & Olver, M. E. (2002). Offender Treatment Attrition and its Relationship with Risk, Responsivity, and Recidivism. *Criminal justice and behavior*, *29*(4), 447-471. doi:10.1177/0093854802029004006
- Wormith, J. S., & Zidenberg, A. M. (2018). The Historical Roots, Current Status, and Future Applications of the Risk-Need-Responsivity Model (RNR). In E. L. Jeglic & C. Calkins (Eds.), *New Frontiers in Offender Treatment: The Translation of Evidence-Based Practices to Correctional Settings* (pp. 11-41). Cham: Springer International Press.

Appendices

Table 8 Outcome variables and individual- and system-level (operational) variables in the current report.

Variable	Meaning
Outcome variables	
Program participation	Offenders who were recorded by CSNSW programs staff as having participated in at least one session of an EQUIPS program that they had been referred to [source: OIMS].
Program completion	Program completion was rated by CSNSW program staff within the OIMS system. Generally, offenders were considered to have ‘completed’ an EQUIPS programs after participating in 40 hours of sessions (or 20 sessions of 2 hours each). In EQUIPS policy, completing a program is defined as completing at least 17 of the 20 program sessions, provided that any missed sessions (maximum of 3) are not consecutive or part of the same module. Irrespective of participation, offenders may also be withdrawn from EQUIPS programs based on therapeutic reasons; for example, in cases when their engagement or behaviour in the program indicates an absence of new learning or application of skills with specific conditions around this. In these cases of obligatory withdrawal, the participant was still considered to have “completed” the program. As such, the number of EQUIPS sessions that were associated with ‘completion’ ranged from 1 session to 48 sessions over the study period. [source: OIMS]
Predictor Variables	
1. Individual Factors	
Demographics	
Age at referral	Offender’s age at the time of referral to a particular EQUIPS program [source: OIMS]
Gender	Gender of participant at the time of referral, either male, female or unknown/undetermined. [Source: OIMS]
In a relationship	Relationship status is conceptualised as those who reported being in a married or de facto relationship on entry to custody. Those who were in the following categories were understood as not being in married or in a de facto relationship: never married, divorced, widowed or separated. [Source: OIMS]
Socioeconomic status – geographic location of origin	
SEIFA Relative Advantage and Disadvantage score	<i>Relative socio-economic advantage and disadvantage (IRSAD)</i> - A low IRSAD score indicates an area that has relatively greater disadvantage in terms of income, occupation, education and even internet connection.
ABS Remoteness Index	Australian Statistical Geography Standard-Remoteness Area is a geographical classification which defines locations in terms of remoteness, i.e., the physical distance of a location from the nearest urban centre and therefore, relative access to major services. Remoteness is categorised in terms of: Major cities, Inner Regional, Outer Regional, Remote and Very Remote. [Source: OIMS]
Criminogenic Risk-Needs (LSI-R Risk category and subcategories)	
LSI-R Risk Category¹	CSNSW uses the Level of Service Inventory-Revised (LSI-R) actuarial risk assessment tool to measure offender’s criminogenic risk/needs. Total risk scores are calculated by adding risk factor scores. Offenders who score from 0-13 on the LSI-R are considered low-risk offenders, 14-23 low-medium risk offenders, 24-33 medium risk offenders, 34-40 recognized as medium- to high-risk, and 41-54 are considered high-risk offenders. Referrals to EQUIPS are recommended amongst those who are deemed to be of medium-high to high risk of re-offending using the LSI-R. This variable includes an offender’s recent risk category recorded against their most recent LSI-R assessment. [Source: OIMS].

Criminogenic needs (domains)	The LSI-R also charts an offenders' profile of criminogenic needs. This involves aggregating the scores from each of the following domain types in a continuous score (Andrews & Bonta, 2001). Higher scores on each of these subdomains indicate higher criminogenic needs. [Source: OIMS]
1. Criminal History domain	This domain reflects an offender's history of criminal experiences and antisocial behaviour – a measure of the magnitude of a person's 'criminal lifestyle'.
2. Education/ Employment domain	This domain reflects livelihood satisfaction, including rewards, commitment and skill development and livelihood stability and structure (either stable/sporadic, full time/part-time/not at all and future plans).
3. Financial domain	This domain focuses on an offender's ability to manage their finances and the link between financial stressors and criminal patterns and behaviours.
4. Family/ Marital domain	This domain relates to current family/marital interactions and their influence on an offender (both positive and negative).
5. Accommodation domain	This domain reflects on the stability and comfort of current accommodation. Higher needs ratings in this domain may indicate homelessness, transitions between accommodation sites and/or poor community ties that increase risk for pro-criminal attitudes.
6. Leisure/ Recreation domain	This domain looks at patterns of involvement or lack of involvement in pro-social leisure and recreational activities and measures of who a person spends their spare time with. Higher needs ratings in this domain indicate pro-social activities are important to reduce the person's risk of reoffending.
7. Companions domain	This domain assesses social networks and peer influence with a particular focus on the extent of social isolation and a lack of pro-social companions.
8. Alcohol and Drug domain	This domain explores an offender's past and current Alcohol and Drug use and whether it has contributed to offending and recidivism.
9. Emotional/ Personal domain	This domain assesses the role of mental health over a person's history and its relationship to offending behaviour.
10. Attitude/ Orientation domain	This domain reflects how a person thinks about him or herself and others in society. Their attitudes, beliefs, values, thinking and activities and whether these are conventional or criminal.
Historical and Current Most Serious Offences needs	
Higher Conviction Count (over lifetime)	Number of convictions over lifetime, both in custody and community-based sentences. [Source: OIMS]
More time in prison over lifetime	Cumulative time that each offender had spent incarcerated over their lifetimes [Source: OIMS]
Most serious offence associated with index sentence (custody and community)	Australian and New Zealand Standard Offence Classification (ANZSOC) Most Serious Offence (MSO) summarised into categories based on those used in Wan, Poynton, van Doorn, and Weatherburn (2014). Categories included serious violent offence, non-serious violent offence, property offence, breach of court order and driving offence. The remaining types of offences including those in the categories of prohibited and regulated weapons and explosives offences; property damage and environmental pollution offences public order offences; offences against justice procedures, government security and government operations offences; and miscellaneous offences; were aggregated into an 'other' group. A single offence type of 'Exceed the prescribed content of alcohol or other substance' was also included in the 'other' category as Wan et al (2014) framework excluded it from the driving offences category.
2. Operational (system-level) Factors	
Employed at time of referral	Indicating offenders were employed in their correctional centre at the time of referral to EQUIPS. Binary responses (yes/no). [Source: OIMS]
Receiving education at time of referral	Indicating offenders were undergoing education in their correctional centre at the time of referral to EQUIPS. Binary responses (yes/no). [Source: OIMS]

Parole attached to sentence	Offenders who had a parole component attached to their community or custodial sentence. Binary responses (yes/no). [Source: OIMS]
Not needing to move centres to complete	An indicator that an offender started participating in the program at the same centre at which their referral took place. Binary responses (yes/no).
Months between EQUIPS program commencement and index referral	The number of months between the first EQUIPS referral on 2 Jan 2015 and an inmate's EQUIPS referral. An indicator of the amount of time that had elapsed since the EQUIPS suite of programs commenced. This was chosen as a covariate as it was deemed important to control for possible improvements in program referral and delivery, the longer that a program had been running.
Months between sentence start and first program participation	The number of months between the start of an offender's sentence (either custodial or community, depending on referral pathway) and the first day they participated in an EQUIPS program.
Months between sentence end and first program participation	The number of months between the first day an offender participated in an EQUIPS program and the end of their sentence (either custodial or community, depending on referral pathway).
No. times referred/commenced EQUIPS program through same referral pathway	A count of the number of times that an offender had been referred to an EQUIPS program (in the participation analysis) or commenced an EQUIPS program (in the completion analysis) during the study period within the same referral pathway (either custodial or community).
Program Type	Programs within the EQUIPS suite including EQUIPS Foundation, EQUIPS Domestic Abuse, EQUIPS Addiction and EQUIPS Aggression [Source: OIMS]

Table 9 Individual factors associated with participation amongst Aboriginal offenders (custody)

Custody participation	Model 0 N=6252 OR (SE)	Model 1 N=6252 OR (SE)	Model 2 N=6252 OR (SE)	Model 3 N=6252 OR (SE)	Model 4 N=6252 OR (SE)	Model 5 N=6252 OR (SE)
Fixed effects						
Block one: Demographic factors						
Age at referral		.99 (.00) 95% CI (.98,.100)	.99(.00) 95% CI (.98,1.00)	.99 (.00) 95% CI (.98,1.00)	.99 (.01) 95% CI (.98,1.00)	.99 (.01) 95% CI (.98,1.00)
Gender (male)		1.13 (.13) 95% CI (.90,1.42)	1.13 (.13) 95% CI (.90,1.41)	1.09 (.13) 95% CI (.87,1.37)	1.14 (.14) 95% CI (.90,1.44)	1.18 (.14) 95% CI (.93,1.49)
In a relationship		1.04 (.08) 95% CI (.89,1.21)	1.04 (.08) 95% CI (.89, 1.21)	1.03 (.08) 95% CI (.88,1.20)	1.02 (.08) 95% CI (.88,1.19)	1.02 (.08) 95% CI (.87,1.19)
Block two: Socioeconomic factors						
SEIFA IRSAD			1.03 (.05) 95% CI (.95, 1.13)	1.04 (.05) 95% CI (.94,1.13)	1.03 (.05) 95% CI (.94,1.12)	1.03 (.05) 95% CI (.94,1.12)
ABS Remoteness Index			1.05 (.05) 95% CI (.96,1.14)	1.03 (.05) 95% CI (.94,1.13)	1.01 (.04) 95% CI (.92,1.10)	1.01 (.05) 95% CI (.92,1.10)
Block three: Criminogenic factors						
LSI-R Risk Category ¹ (overall)				.75 (.07) 95% CI (.62,.90)	.80 (.08) 95% CI (.66,.97)	.81 (.08) 95% CI (.67,.99)
Criminal History ²						
Education/Employment				1.04 (.06) 95% CI (.94,1.16)	1.05 (.06) 95% CI (.95,1.17)	1.05 (.06) 95% CI (.95,1.17)
Financial				1.13 (.05) 95% CI (1.03,1.24)	1.12 (.05) 95% CI (1.02,1.23)	1.12 (.05) 95% CI (1.02,1.23)
Family/Marital				.99 (.04) 95% CI (.91,1.08)	1.00 (.04) 95% CI (.92,1.09)	1.00 (.05) 95% CI (.92,1.10)
Accommodation				1.04 (.04) 95% CI (.96,1.13)	1.03(.04) 95% CI (.95,1.12)	1.03 (.04) 95% CI (.95,1.12)
Leisure/Recreation				1.01 (.04) 95% CI (.94,1.09)	1.00 (.04) 95% CI (.93,1.07)	1.00 (.04) 95% CI (.92,1.08)
Companions				.95 (.04) 95% CI (.88,1.03)	.96 (.04) 95% CI (.88,1.03)	.95 (.04) 95% CI (.88,1.03)
Alcohol and Drug				1.12 (.05) 95% CI (1.02,1.23)	1.11 (.05) 95% CI (1.01,1.21)	1.11 (.05) 95% CI (1.01,1.22)
Emotional/Personal				.93 (.04) 95% CI (.86,1.01)	.93 (.04) 95% CI (.86,1.01)	.93 (.04) 95% CI (.86,1.01)
Attitude/Orientation ²				1.08 (.05) 95% CI (.99,1.17)	1.08 (.05) 95% CI (.99,1.17)	1.08 (.05) 95% CI (.99,1.17)
Block four: History of contact with criminal justice system and sentencing characteristics						
Accumulated Conviction Count (lifetime)					1.08 (.05) 95% CI (.97,1.18)	1.07 (.05) 95% CI (.97,1.18)
Cumulative time in prison (lifetime)					.93 (.05) 95% CI (.84,1.03)	.94 (.05) 95% CI (.85,1.03)
Most Serious Offence Category (compared with other types of offences)						
Serious Violent Offence ³					.58 (.07) 95% CI (.46,.74)	.59 (.07) 95% CI (.46,.75)
Nonserious Violent Offence					.44 (.06) 95% CI (.34,.58)	.45 (.06) 95% CI (.35,.59)
Property offence					.60 (.08) 95% CI (.46,.78)	.60 (.08) 95% CI (.46,.78)
Breach of court order					.29 (.04) 95% CI (.22,.38)	.29 (.05) 95% CI (.22,.38)
Driving offence					.48 (.11) 95% CI (.31,.75)	.46 (.10) 95% CI (.29,.71)

Drug Offence					.99 (.26) 95% CI (.59,1.65)	.97 (.25) 95% CI (.58,1.62)
Number of unique referrals to EQUIPS programs through custodial pathway						.86 (.03) 95% CI (.81, .92)
Random effects	171.22****	171.08****	171.22****	164.66****	141.03****	144.49****
Offender ID (U1)	1.30 (.16) 95% CI (1.02,1.65)	1.29 (.16) 95% CI (1.01,1.64)	1.29 (.16) 95% CI (1.02,1.64)	1.26 (.16) 95% CI (.99,1.60)	1.15 (.15) 95% CI (.89,1.48)	1.17 (.15) 95% CI (.91,1.50)
Model Statistics						
Log Likelihood	-4068.60	-4065.14	-4064.60	-4049.36	-3994.87	-3984.89
Integration points	7	7	7	7	7	7
Wald Chi2		6.89	7.96	37.64	137.41	154.55
Df		3	5	15	23	24
p		0.08	0.16	.001	<.00005	<.00005
AIC	8141.21	8140.28	8143.20	8132.73	8039.74	8021.79
BIC	8154.69	8173.99	8190.38	8247.32	8208.25	8197.04
LR test		6.92 (.07)	1.09	30.47***	108.99****	19.95****

Note. Red text indicates statistically significant findings.

Table 10 Operational factors associated with participation amongst Aboriginal offenders (custody)

	Model 0 N=6089 Null model	Model 1 N=6089 Cross-classified
Fixed effect		
Parole attached to sentence		1.42 (.21) 95% CI (1.06,1.90)
Education at referral		1.14 (.06) 95% CI (.1.02,1.27)
Employment at referral		1.58 (.09) 95% CI (.1.41,1.76)
Months since EQUIPS program commenced at referral		.99 (.00) 95% CI (.99,1.00)
Months prior to sentence end when referred to program		1.03 (.00) 95% CI (1.03,1.04)
Months since sentence started when referred		1.00 (.00) 95% CI (1.00,1.00)
Number of unique referrals through the custodial pathway		.91 (.30) 95% CI (.86,.96)
Program Type		
Addiction		1.06 (.07) 95% CI (.93,1.20)
Domestic Abuse		.92 (.09) 95% CI (.76,1.12)
Aggression		.77 (.06) 95% CI (.66,.91)
Random effects		
Offender ID (U2)	16.94**** 3.14e ⁻²⁰ (2.07e ⁻¹⁵) 95% CI (.00,.00)	19.86*** 4.39e ⁻¹¹ (8.59e ⁻¹¹) 95% CI (.00,.00)
Model Statistics		
Log Likelihood	-3994.80	-3810.53
Integration points	7	7
Wald Chi2		328.63
Df		10
p		<.00005
AIC	7997.60	7649.06
BIC	8024.45	7743.06
LR Test		33.34****

Table 11 Individual factors associated with completion amongst Aboriginal offenders (custody)

	Model 0 N=2098 OR (SE)	Model 1 N=2098 OR (SE)	Model 2 N=2098 OR (SE)	Model 3 N=2098 OR (SE)	Model 4 N=2098 OR (SE)	Model 5 N=2098 OR (SE)
Intercept	2.58 (.21) 95% CI (2.19, 3.03)	.60 (.26) 95% CI (.26, 1.39)	.63 (.27) 95% CI (.27, 1.46)	.51 (.44) 95% CI (.09, 2.74)	.59 (.56) 95% CI (.09, 3.80)	.52 (.49) 95% CI (.08, 3.31)
Fixed effects						
Block one: Demographic factors						
Age at referral		1.03 (.01) 95% CI (1.01, 1.05)	1.03 (.01) 95% CI (1.01, 1.05)	1.03 (.01) 95% CI (1.01, 1.04)	1.02 (.01) 95% CI (1.00, 1.04)	1.02 (.01) 95% CI (1.00, 1.04)
Gender (male)		1.14 (.24) 95% CI (.75, 1.71)	1.14 (.24) 95% CI (.76, 1.72)	1.03 (.22) 95% CI (.68, 1.04)	.99 (.22) 95% CI (.64, 1.52)	.98 (.21) 95% CI (.64, 1.50)
In a relationship		1.29 (.19) 95% CI (.98, 1.71)	1.29 (.19) 95% CI (.98, 1.71)	1.29 (.18) 95% CI (.97, 1.71)	1.25 (.18) 95% CI (.94, 1.66)	1.25 (.18) 95% CI (.94, 1.65)
Block two: Socioeconomic factors						
SEIFA IRSAD			1.01 (.08) 95% CI (.80, 1.10)	1.01 (.08) 95% CI (.86, 1.18)	.99 (.08) 95% CI (.84, 1.15)	.99 (.08) 95% CI (.84, 1.15)
ABS Remoteness Index			.93 (.08) 95% CI (.80, 1.10)	.97 (.08) 95% CI (.82, 1.14)	.94 (.08) 95% CI (.80, 1.11)	.94 (.08) 95% CI (.80, 1.11)
Block three: Criminogenic factors						
LSI-R Risk Category ¹ (overall)				1.15 (.24) 95% CI (.76, 1.74)	1.16 (.25) 95% CI (.76, 1.76)	1.16 (.24) 95% CI (.77, 1.75)
Criminal History ²				.99 (.09) 95% CI (.83, 1.18)	1.00 (.10) 95% CI (.83, 1.21)	1.00 (.09) 95% CI (.74, 1.10)
Education/Employment				.89 (.09) 95% CI (.73, 1.09)	.90 (.09) 95% CI (.74, 1.11)	.90 (.09) 95% CI (.74, 1.10)
Financial				.97 (.09) 95% CI (.82, 1.16)	.99 (.09) 95% CI (.83, 1.18)	.99 (.09) 95% CI (.83, 1.17)
Family/Marital				.83 (.07) 95% CI (.70, .98)	.82 (.07) 95% CI (.69, .97)	.82 (.07) 95% CI (.69, .97)
Accommodation				.85 (.07) 95% CI (.73, 1.00)	.86 (.07) 95% CI (.74, 1.00)	.86 (.07) 95% CI (.95, 1.01)
Leisure/Recreation				.96 (.07) 95% CI (.83, 1.11)	.95 (.07) 95% CI (.82, 1.10)	.95 (.07) 95% CI (.82, 1.10)
Companions				.99 (.07) 95% CI (.86, 1.15)	1.01 (.07) 95% CI (.87, 1.16)	1.01 (.07) 95% CI (.87, 1.16)
Alcohol and Drug				1.01 (.09) 95% CI (.85, 1.20)	.98 (.09) 95% CI (.82, 1.17)	.98 (.09) 95% CI (.82, 1.16)
Emotional/Personal				1.00 (.08) 95% CI (.86, 1.17)	1.00 (.08) 95% CI (.86, 1.17)	1.00 (.08) 95% CI (.86, 1.17)
Attitude/Orientation ²				.90 (.07) 95% CI (.77, 1.05)	.90 (.07) 95% CI (.77, 1.06)	.90 (.07) 95% CI (.77, 1.06)
Block four: History of contact with criminal justice system and sentencing characteristics						
Accumulated Conviction Count (lifetime)					1.16 (.11) 95% CI (.96, 1.39)	1.16 (.11) 95% CI (.96, 1.39)
Cumulative time in prison (lifetime)					.89 (.08) 95% CI (.74, .07)	.89 (.08) 95% CI (.74, 1.06)
Most Serious Offence Category (compared with other types of offences)						
Serious Violent Offence ³					1.39 (.39) 95% CI (.80, 2.41)	1.39 (.39) 95% CI (.81, 2.40)
Nonserious Violent Offence					.92 (.28) 95% CI (.51, 1.65)	.92 (.27) 95% CI (.52, 1.65)
Property offence					.85 (.25) 95% CI (.48, 1.52)	.86 (.25) 95% CI (.49, 1.53)
Breach of court order					.70 (.21) 95% CI (.38, 1.29)	.71 (.22) 95% CI (.39, 1.30)
Driving offence					.88 (.39) 95% CI (.37, 2.09)	.90 (.40) 95% CI (.38, 2.13)

Drug Offence					1.37 (.66) 95% CI (.53, 3.53)	1.37 (.66) 95% CI (.54, 3.50)
Number of unique commencements of EQUIPS programs through custodial pathway						1.11 (.11) 95% CI (.92, 1.33)
Random effects	39.97****	38.23****	37.48****	36.28****	36.43****	33.97****
Offender ID (U1)	2.02 (.54) 95% CI (1.20, 3.40)	1.96 (.53) 95% CI (1.16, 3.33)	1.94 (.53) 95% CI (1.14, 3.31)	1.90 (.52) 95% CI (1.11, 3.27)	1.91 (.52) 95% CI (1.11, 3.27)	1.81 (.51) 95% CI (1.04, 3.15)
Model Statistics						
Log Likelihood	-1303.81	-1296.32	-1295.82	-1286.42	-1278.04	-1277.47
Integration points	7	7	7	7	7	7
Wald Chi2		14.10	15.03	30.55	42.42	44.37
df		3	5	16	24	25
p		.0028	.0102	.0153	.0116	.0098
AIC	2611.62	2602.64	2605.64	2608.84	2608.08	2608.95
BIC	2622.92	2630.89	2645.18	2710.51	2754.95	2761.46
LR test with previous model LR chi2		14.98 <i>p</i> =.0018	1.01 <i>p</i> =.6050	18.80 <i>p</i> =.0647	16.75 <i>p</i> =.0328	1.14 <i>p</i> =.2859

Table 12 Operational factors associated with completion amongst Aboriginal offenders, including having at least two Aboriginal people within EQUIPS grouping (custody)

	Model 0 N=1853 Null model	Model 1 N=1853 Cross-classified	Model 2 N=1853 Sub-study
Fixed effect			
Parole attached to sentence		1.31 (.66) 95% CI (.49,3.51)	1.31 (.67) 95% CI (.48, 3.59)
Education at referral		1.06 (.15) 95% CI (.81,1.38)	1.04 (.15) 95% CI (.79, .1.37)
Employment at referral		1.48 (.22) 95% CI (1.11,1.98)	1.47 (.22) 95% CI (1.10, 1.98)
Months since EQUIPS program commenced at referral		1.01 (.01) 95% CI (.99,1.02)	1.00 (.01) 95% CI (.99, 1.01)
Months prior to sentence end when referred to program		1.04 (.01) 95% CI (1.02,1.05)	1.03 (.01) 95% CI (1.02, 1.05)
Months since sentence started when referred		1.01 (.01) 95% CI (1.00,1.03)	1.02 (.01) 95% CI (1.00, 1.03)
Number of unique commencements of EQUIPS through the custodial referral pathway		1.07 (.11) 95% CI (.88,1.31)	1.06 (.27) 95% CI (.87, 1.31)
Needing to move location to participate in program		1.12 (.17) 95% CI (.84, 1.50)	.93 (.15) 95% CI (.68, 1.26)
Program Type			
Addiction		1.30 (.20) 95% CI (.97, 1.76)	1.24 (.19) 95% CI (.91, 1.68)
Domestic Abuse		.74 (.16) 95% CI (.48, 1.13)	.78 (.17) 95% CI (.50, 1.21)
Aggression		1.23 (.24) 95% CI (.83, 1.80)	1.20 (.24) 95% CI (.81, 1.77)
Sub-study variables			
Two or more Aboriginal offenders in group			1.94 (.37) 95% CI (1.33, 2.83)
Total number of program group members			1.01 (.04) 95% CI (.93, 1.10)
Random effects	34.88****	28.43****	30.65****
Offender ID (U2)	1.98 (.56) 95% CI (1.13, 3.45)	1.70 (.52) 95% CI (.94, 3.08)	1.86 (.56) 95% CI (1.04, 3.36)
Model Statistics			
Log Likelihood	-1152.32	-1115.71	-1105.14
Integration points	7	7	7
Wald Chi2		57.79	68.00
df		11	13
p		<.00005	≤.0005
AIC	2308.64	2257.42	2240.29
BIC	2319.69	2329.24	2323.16
LR Test		73.22****	21.13****

Table 13 Individual factors associated with participation amongst Aboriginal offenders (community)

Community participation	Model 0 N=5737 OR (SE)	Model 1 N=5737 OR (SE)	Model 2 N=5737 OR (SE)	Model 3 N=5737 OR (SE)	Model 4 N=5737 OR (SE)	Model 5 N=5737 OR (SE)
Fixed effects						
Block one: Demographic factors						
Age at referral		1.00 (.00) 95% CI (1.00,1.01)	1.00 (.00) 95% CI (.100,1.01)	1.01 (.00) 95% CI (1.00,1.01)	1.01 (.00) 95% CI (1.00,1.02)	1.01 (.00) 95% CI (1.00,1.02)
Gender (male)		1.42 (.13) 95% CI (1.19,1.71)	1.43 (.13) 95% CI (1.19,1.71)	1.41 (.13) 95% CI (1.17,1.70)	1.42 (.14) 95% CI (1.18,1.72)	1.45 (.14) 95% CI (1.20,1.74)
In a relationship		.96 (.07) 95% CI (.83,1.10)	.94 (.07) 95% CI (.82,1.09)	.94 (.07) 95% CI (.82,1.09)	.94 (.07) 95% CI (.81,1.07)	.93 (.07) 95% CI (.81,1.07)
Block two: Socioeconomic factors						
SEIFA IRSAD			.99 (.04) 95% CI (.91,1.07)	.99 (.04) 95% CI (.91,1.07)	.99 (.04) 95% CI (.91,1.07)	.99 (.04) 95% CI (.92,1.08)
ABS Remoteness Index			.83 (.10) 95% CI (.32,.72)	.83 (.04) 95% CI (.76,.90)	.83 (.04) 95% CI (.76,.90)	.84 (.04) 95% CI (.78,.91)
Block three: Criminogenic factors						
LSI-R Risk Category ¹ (overall)				1.26 (.13) 95% CI (1.03,1.54)	1.26 (.13) 95% CI (1.04,1.54)	1.26 (.13) 95% CI (1.03,1.53)
Criminal History ²				.91 (.04) 95% CI (.84,.99)	.95 (.04) 95% CI (.87,1.04)	.97 (.04) 95% CI (.89,1.06)
Education/Employment				.95 (.04) 95% CI (.87,1.04)	.97 (.05) 95% CI (.88,1.06)	.98 (.05) 95% CI (.89,1.07)
Financial				.93 (.04) 95% CI (.86,1.01)	.93 (.04) 95% CI (.86,1.01)	.94 (.04) 95% CI (.87,1.01)
Family/Marital				.97 (.04) 95% CI (.90,1.04)	.96 (.04) 95% CI (.89,.104)	.96 (.04) 95% CI (.89,1.00)
Accommodation				.93 (.03) 95% CI (.86,1.00)	.93 (.03) 95% CI (.87,1.00)	.93 (.03) 95% CI (.87,1.00)
Leisure/Recreation				1.05(.04) 95% CI (.98,1.12)	1.05 (.04) 95% CI (.98,1.12)	1.05 (.04) 95% CI (.98,1.13)
Companions				1.03 (.04) 95% CI (.95,1.11)	1.04 (.04) 95% CI (.96,1.12)	1.04 (.04) 95% CI (.96,1.12)
Alcohol and Drug				.96 (.04) 95% CI (.88,1.04)	.95 (.04) 95% CI (.88,1.04)	.96 (.04) 95% CI (.89,1.04)
Emotional/Personal				.92 (.03) 95% CI (.86,.99)	.92 (.03) 95% CI (.86,.99)	.93 (.03) 95% CI (.87,1.00)
Attitude/Orientation ²				.87 (.03) 95% CI (.81,.94)	.88 (.03) 95% CI (.81,.94)	.88 (.03) 95% CI (.82,.95)
Block four: History of contact with criminal justice system and sentencing characteristics						
Accumulated Conviction Count (lifetime)					.93 (.04) 95% CI (.86,1.02)	.93 (.04) 95% CI (.86,1.02)
Cumulative time in prison (lifetime)					.94 (.04) 95% CI (.87,1.02)	.94 (.04) 95% CI (.86,1.02)
Most Serious Offence Category (compared with other types of offences)						
Serious Violent Offence ³					1.31 (.17) 95% CI (1.02,1.68)	1.30(.16) 95% CI (1.01,1.66)
Nonserious Violent Offence					1.15 (.14) 95% CI (.90,1.47)	1.14 (.14) 95% CI (.90,1.46)
Property offence					1.12 (.16) 95% CI (.85,1.47)	1.08 (.15) 95% CI (.82,1.42)
Breach of court order					1.49 (.30) 95% CI (1.00,2.23)	1.58 (.32) 95% CI (1.06,2.35)
Driving offence					1.15 (.27) 95% CI (.73,1.82)	1.11 (.26) 95% CI (.71,1.75)
Drug Offence					1.07 (.21) 95% CI (.73,1.57)	1.05 (.20) 95% CI (.72,1.53)

Number of unique referrals to EQUIPS programs through community pathway						.79 (.03) 95% CI (.73,.85)
Random effects	44.87****	42.35****	37.30****	34.32****	31.67****	29.99****
Offender ID (U1)	.77 (.16) 95% CI (.52,1.15)	.74 (.15) 95% CI (.49,1.12)	.69 (.15) 95% CI (.45,1.06)	.66 (.15) 95% CI (.42,1.02)	.63 (.15) 95% CI (.40,1.00)	.61 (.14) 95% CI (.38,.96)
Model Statistics						
Log Likelihood	-3751.72	-3743.62	-3731.68	-3717.70	-3708.73	-3689.45
Integration points	7	7	7	7	7	7
Wald Chi2		15.88	39.09	65.51	82.02	116.66
df		3	5	16	24	25
p		0.0012	<.00005	<.00005	<.00005	<.00005
AIC	7507.44	7497.23	7477.36	7471.40	7469.46	7432.89
BIC	7520.75	7530.51	7523.94	7591.18	7642.48	7612.57
LR Test		16.21***	23.88****	27.96**	17.94*	38.56****

Table 14 Operational factors associated with participation amongst Aboriginal offenders (community)

	Model 0 N=5737 Null model	Model 1 N=5737 Cross-classified
Fixed effect		
Parole attached to sentence		1.10 (.07) 95% CI (.98, 1.24)
Months since EQUIPS program commenced at referral		.98 (.00) 95% CI (.98, .99)
Months prior to sentence end when referred to program		1.02 (.00) 95% CI (1.01, 1.03)
Months since sentence started when referred		.99 (.01) 95% CI (.98, 1.01)
Number of unique referrals to EQUIPS through the community referral pathway		.90 (.03) 95% CI (.84, .97)
Program Type		
Addiction		.54 (.04) 95% CI (.47, .64)
Domestic Abuse		1.03 (.08) 95%CI (.88, 1.20)
Aggression		.39 (.04) 95% CI (.32, .48)
Random effects		
Program participation location (U1)		.24 (.06) 95%CI (.14, .41)
Offender ID (U2)		9.64e ⁻²² (2.71e ⁻¹⁶) 95%CI (00, .00)
Model Statistics		
Log Likelihood	-3705.80	-3593.11
Integration points	1	1
Wald Chi2		209.42
Df		8
p		≤.0001
AIC	7419.60	7210.225
BIC	7446.22	7290.081
LR Test		225.37****

Table 15 Individual factors associated with completion amongst Aboriginal offenders (community)

	Model 0 N=2568 OR (SE)	Model 1 N=2568 OR (SE)	Model 2 N=2568 OR (SE)	Model 3 N=2568 OR (SE)	Model 4 N=2568 OR (SE)	Model 5 N=2568 OR (SE)
Fixed effects						
Block one: Demographic factors						
Age at referral		1.03 (.00) 95% CI (1.02,1.04)	1.03 (.01) 95% CI (1.02,1.04)	1.04(.01) 95% CI (1.03,1.05)	1.04 (.01) 95% CI (1.03,1.06)	1.04 (.01) 95% CI (1.03,1.06)
Gender (male)		1.59 (.24) 95% CI (1.17,2.15)	1.56 (.24) 95% CI (1.16,2.11)	1.56 (.24) 95% CI (1.15,2.12)	1.55 (.25) 95% CI (1.14,2.12)	1.52 (.24) 95% CI (1.11,1.06)
In a relationship		1.07 (.12) 95% CI (.86,1.33)	1.07 (.12) 95% CI (.86,1.33)	1.05 (.12) 95% CI (.84,1.30)	1.03 (.11) 95% CI (.83,1.29)	1.04 (.12) 95% CI (.84,1.30)
Block two: Socioeconomic factors						
SEIFA IRSAD			.86 (.06) 95% CI (.76,.98)	.85 (.06) 95% CI (.75,.97)	.86 (.06) 95% CI (.75,.97)	.85 (.06) 95% CI (.75,.97)
ABS Remoteness Index			.88 (.06) 95% CI (.77,1.00)	.87 (.06) 95% CI (.76,.98)	.86 (.06) 95% CI (.75,.97)	.85 (.06) 95% CI (.75,.97)
Block three: Criminogenic factors						
LSI-R Risk Category ¹ (overall)				1.13 (.18) 95% CI (.83,1.54)	1.15 (.18) 95% CI (.84,1.57)	1.14 (.18) 95% CI (.84,1.56)
Criminal History ²				.75 (.05) 95% CI (.66,.86)	.78 (.06) 95% CI (.68,.90)	.78 (.06) 95% CI (.67,.89)
Education/Employment				.91 (.07) 95% CI (.79,1.04)	.92 (.07) 95% CI (.80,1.06)	.92 (.07) 95% CI (.80,1.06)
Financial				.91 (.06) 95% CI (.80,1.03)	.91 (.06) 95% CI (.80,1.03)	.91 (.06) 95% CI (.80,1.03)
Family/Marital				.91 (.05) 95% CI (.81,1.02)	.90 (.06) 95% CI (.80,1.02)	.90 (.06) 95% CI (.79,1.01)
Accommodation				.91 (.05) 95% CI (.81,1.02)	.91 (.05) 95% CI (.81,1.02)	.90 (.05) 95% CI (.81,1.02)
Leisure/Recreation				1.00 (.05) 95% CI (.90,1.11)	1.00 (.05) 95% CI (.90,1.11)	1.00 (.05) 95% CI (.90,1.11)
Companions				.92 (.05) 95% CI (.82,1.03)	.93 (.06) 95% CI (.83,1.04)	.93 (.06) 95% CI (.82,1.04)
Alcohol and Drug				.91 (.06) 95% CI (.80,1.03)	.90 (.06) 95% CI (.79,1.02)	.90 (.06) 95% CI (.79,1.02)
Emotional/Personal				.93 (.05) 95% CI (.83,1.05)	.93 (.05) 95% CI (.83,1.04)	.92 (.05) 95% CI (.82,1.04)
Attitude/Orientation ²				.99 (.06) 95% CI (.88,1.11)	.99 (.06) 95% CI (.88,.98)	.99 (.06) 95% CI (.88,1.12)
Block four: History of contact with criminal justice system and sentencing characteristics						
Accumulated Conviction Count (lifetime)					1.07 (.08) 95% CI (.93,1.23)	1.07 (.08) 95% CI (.93,1.24)
Cumulative time in prison (lifetime)					.86 (.06) 95% CI (.76,.98)	.86 (.06) 95% CI (.75,.98)
Most Serious Offence Category (compared with other types of offences)						
Serious Violent Offence ³					.96 (.19) 95% CI (.65,1.41)	.96 (.19) 95% CI (.65,1.43)
Nonserious Violent Offence					.87 (.17) 95% CI (.59,1.27)	.87 (.17) 95% CI (.59,1.29)
Property offence					.73 (.16) 95% CI (.47,1.12)	.74 (.17) 95% CI (.48,1.15)
Breach of court order					1.27 (.39) 95% CI (.70,2.31)	1.21 (.37) 95% CI (.66,2.22)
Driving offence					.99 (.36) 95% CI (.49,2.01)	.99 (.36) 95% CI (.49,2.03)
Drug Offence					.76 (.23) 95% CI (.42,1.39)	.77 (.24) 95% CI (.42,1.41)

Number of unique commencements of EQUIPS programs through community pathway						1.16 (.07) 95% CI (1.02, 1.31)
Random effects	21.22****	18.21****	17.91****	15.36****	14.54***	15.23****
Offender ID (U1)	1.43 (.47) 95% CI (.75,2.73)	1.31 (.45) 95% CI (.66,2.58)	1.29 (.45) 95% CI (.65,2.56)	1.16 (.42) 95% CI (.56,2.37)	1.12 (.42) 95% CI (.54,2.32)	1.16 (.43) 95% CI (.57,2.39)
Model Statistics						
Log Likelihood	-1759.96	-1741.15	-1738.12	-1711.46	-1705.29	-1702.62
Integration points	7	7	7	7	7	7
Wald Chi2		32.83	36.29	71.53	78.35	79.97
df		3	5	16	24	25
p		<.00005	<.00005	<.00005	<.00005	<.00005
AIC	3523.91	3492.29	3490.25	3458.92	3462.57	3459.24
BIC	3535.62	3521.55	3531.20	3564.23	3614.70	3617.22
LR Test		37.62****	6.04*	53.33****	12.34	5.33*

Table 16 Operational factors associated with completion amongst Aboriginal offenders, including having at least two Aboriginal people within EQUIPS grouping (community)

	Model 0 N=2556 Null model	Model 1 N=2556 Cross-classified	Model 3 N=2556 Sub-study
Fixed effect			
Parole attached to sentence		.67 (.07) 95% CI (.54,.83)	.68 (.08) 95% CI (.54, .85)
Months since EQUIPS program commenced at referral		1.00 (.00) 95% CI (.99,1.01)	1.01 (.01) 95% CI (1.00, 1.02)
Months prior to sentence end when referred to program		1.01 (.01) 95% CI (.99,1.02)	1.00 (.01) 95% CI (.99, 1.02)
Months since sentence started when referred		1.00 (.01) 95% CI (.98,1.01)	1.00 (.01) 95% CI (.98, .1.01)
Number of unique commencements of EQUIPS programs		1.13 (.07) 95% CI (.999,1.28)	1.12 (.08) 95% CI (.98, .1.29)
Needing to move location to participate in program		.73 (.10) 95% CI (.55, .97)	.69 (.10) 95% CI (.51, .92)
Program Type			
Addiction		.83 (.12) 95% CI (.63, 1.11)	.88 (.14) 95% CI (.65, 1.19)
Domestic Abuse		1.36 (.18) 95% CI (1.05, 1.76)	1.36 (.19) 95% CI (1.04, 1.78)
Aggression		.79 (.15) 95% CI (.55, 1.14)	.92 (.18) 95% CI (.63, 1.35)
Sub-study variables			
Two or more Aboriginal offenders in group			1.00 (.14) 95% CI (.76, 1.31)
Total number of program group members			1.03 (.02) 95% CI (.99, 1.08)
Random effects	21.40****	21.34****	23.56****
Offender ID (U2)	1.45 (.48) 95%CI (.76, 2.76)	1.48 (.49) 95%CI (.78, 2.84)	1.66 (.54) 95% CI (.88, 3.14)
Model Statistics			
Log Likelihood	-1752.18	-1732.30	-1636.298
Integration points	7	7	7
Wald Chi2		33.95	31.91
df	0	9	11
p		<.00005	≤.00008
AIC		3297.90	3298.60
BIC		3361.59	3373.86
LR Test		39.75****	3.31