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Evaluation of the Alternate Sanctions Program (ASP): Within-treatment Change

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Aims

To examine whether participation in the ASP pilot was associated with measurable change in a range of drug-related outcomes that were the targets of intervention.

Methods

The sample included in analyses were inmates who completed the program and at least one outcome measure both immediately before starting the program (pre-treatment) and after program completion (post-treatment). Within-treatment change was calculated at the group level using mixed ANOVAs and at the individual level using reliable change indexes. Because the program was implemented differently in two correctional centres, we also looked at differences in patterns of change between centres.

Results

On average, participants showed significant within-treatment improvement on most of our measures. In some cases, this improvement was only apparent in participants from one of the pilot centres; specifically, frequency of reported drug use decreased, and treatment readiness increased, over time in one centre but not the other. Reliable change indexes showed that while over half of participants remained unchanged from pre- to post-treatment on all measures, over 20-40% showed statistical improvement. Participants most commonly reported improvement on self-efficacy; that is, they became more confident that they could resist drug use.

Conclusion

Within-treatment change analyses provided evidence that participation in the ASP may lead to improvement on a number of drug-related outcomes. However, improvement in some outcomes were only found in one of the pilot centres, suggesting that variation in implementation of the model across sites may have been an important moderator of program outcomes for inmates.

INTRODUCTION

Prison entrants are four times more likely to report previous use of illicit drugs compared to those in the general community. Specifically, survey results showed that 65% of 803 prison entrants across Australia reported using illicit drugs during the previous 12 months (Australian Institute of Health and Welfare, 2019). According to self-report surveys, methamphetamine was the most commonly used drug (43%), followed by cannabis (40%) and analgesics or pain killers (10%; Australian Institute of Health and Welfare, 2019). A more objective measure of drug use prevalence, urinalysis, found that the majority of police detainees (82%) at watch houses and police stations across Australia tested positive to at least one drug type during data collection and almost half (46%) tested positive to more than one (Voce & Sullivan, 2020). A survey among NSW inmates further found a high prevalence of previous drug use. Almost three quarters (73%) of inmates reported drug use in the six months prior to the start of their current prison episode, with the most commonly used illicit drugs being cannabis (54%), amphetamine (32%), and heroin (22%; Kevin, 2013). A recent study found almost a quarter (23%) of NSW inmates report a substance abuse disorder history (Korobanova et al., 2022).

Despite the fact that there are fewer opportunities to obtain and use illicit substances in prison compared to in the community, the use of illicit substances in prison nonetheless persists. Almost 40% of NSW inmates report having used an illicit drug during their prison sentence, with about 10% reporting heroin, amphetamines, or cocaine use. The most commonly used drugs by males in prison were cannabis (28%), non-prescribed buprenorphine (14%), and other non-prescribed medication (10%), with the increase in non-prescribed buprenorphine being a particular concern. Among drug users in prison, frequency of use is high. For non-prescribed buprenorphine users, for example, 10% used daily, 18% used weekly, and 42% used more often than weekly (Kevin, 2013). The continuous use of drugs in prison suggests that ensuring inmates are directed into custody-based substance use interventions may be critical to addressing both problem behaviours in custody as well as longer-term needs associated with substance dependence.

Alternate Sanctions Program (ASP)

According to the *Crimes (Administration of Sentences) Regulation 2014*, when an inmate is found committing drug-related misconduct in prison they are charged with a correctional centre offence. A hearing of those charges may impose a penalty of withdrawal of privileges, such as access to the television or library, making telephone calls, contact with visitors, and others.

In 2020-2021, the Alternate Sanctions Program (ASP) pilot in John Morony Correctional Centre (JMCC) and Macquarie Correctional Centre (MCC) was implemented to provide an alternative to standard punishment-oriented responses to drug-related misconduct, whereby eligible offenders could choose to have their sanction suspended in favour of receiving support to abstain from substance use. In brief, under the ASP, participants enter into a behavioural management contract to engage in programs for AOD-related needs, employment and education, family conferences and other case management interventions. Interventions are based on cognitive behavioural therapy (CBT) principles and draw from elements of existing behaviour change programs delivered by Corrective Services NSW, such as EQUIPS Addiction. The exact content and delivery of the ASP varied over time and across sites, which will be discussed further in later sections. However, a common intended aim of the program is to support offenders in their reduction or cessation of ongoing substance use.

The implementation of such a program in response to drug-related misconduct could have promising effects given that a large body of research shows that participation in drug abuse treatment has a statistically and clinically significant effect in reducing drug abuse (e.g., Magill & Ray, 2009; Prendergast et al., 2002; Teesson et al., 2006). There is extensive evidence for the efficacy of CBT for substance-abuse disorders overall and when compared to general drug counselling, treatment as usual, and no treatment controls. A meta-analytic review of 34 randomized control trials found a medium effect size for cognitive-behavioural therapy across all substances (avg d = 0.45). When examining different drug use disorders, the largest treatment effects were found for cannabis, followed by cocaine and opioids, with the smallest effect size found for polysubstance dependence (McHugh et al., 2010).

The Current Study

The purpose of the current study was to evaluate whether providing a therapeutic response to drug-related misconduct, through participation in the ASP, would be associated with change in substance use-related risk factors that are the targets of intervention. In line with the program logic and mechanisms of change identified for the ASP, we examined whether inmates showed change before and after participation in the ASP on a range of key outcomes, including: 1) whether there was a reduction or cessation of ongoing substance use in custody; 2) possible underlying mechanisms of drug use reduction, specifically whether there was decreased psychological symptoms of substance use dependence and increased self-confidence in future drug resistance; and 3) whether there was an increase in participants' treatment readiness.

Whereas the first two categories of outcome relate to direct effects of the ASP in addressing substance use and dependence, the third is of interest because an identified mechanism of change for the ASP is improving inmates' motivation for and engagement in subsequent behaviour change interventions, particularly in the event that the relatively brief format of the ASP is not sufficient to fully address related needs. Improving treatment readiness and motivation for further interventions would provide participants with an increased opportunity to maintain or increase gains over time. Indeed, ambivalence to treatment is related to subsequent symptomatology (Braga et al., 2019). A past study found that 75% of offenders are ambivalent about changing factors that contributed to their offending (Devereux, 2009). Therefore, many participants enter treatment in an early stage of change when they may be unconcerned by their drug use or ambivalent about change (Prochaska et al., 2005) and instead attend treatment programs for external motivations (e.g., the possibility of early release). Treatment readiness, on the other hand, is associated with indicators of therapeutic engagement (Hiller et al., 2002) which, in turn, is related to greater likelihood of change after treatment (Garnick et al., 2012).

A second aim of the current study is to explore the nature and outcomes of operational differences in implementation of the ASP. Initial scoping of this study identified substantial variance in how the ASP was delivered to inmates at the two pilot sites. To account for this, our study included interviews with operational stakeholders at each pilot site to gain an understanding of major implementation differences across sites (see Treatment Context). In addition, given the identified inter-site variance, our analytical plan included tests of differences in the magnitude of within-treatment change across sites. In doing so, this evaluation intends to both derive insights about how participation in the ASP is associated with key outcomes overall, as well as best practices in delivery of the program.

METHOD

Participants

One hundred and eighty-eight male inmates (pre-treatment age M = 32.94, SD = 8.20) had either completed the ASP program, exited before completion, or were still actively participating at the time of the study. To be included in our analyses, participants needed to have completed the program and at least one assessment both immediately before starting the program (pre-treatment) and after program completion (post-treatment). Given that some participants completed some, but not all assessments at both pre- and post-treatment, the final sample size for each measure varied (see Tables 2 and 3 for all sample sizes).

Treatment Context

As previously mentioned, discussions with stakeholders over the course of this study indicated that the ASP was delivered significantly differently in each of the pilot centres and evolved differently over time. To account for this, operational informants from each centre were interviewed to gain a general understanding of these differences in program implementation and operation in each centre. Following is a synopsis of the distinctions between the two centres.

John Morony Correctional Centre

In JMCC, inmates were referred to the program if they had a positive urine test and drug charges prior to their prison sentence. Therefore, inmates who verbally stated their intent to use drugs but had not done so at the time of the urine test were not included. Further, sometimes it would take a few weeks for the urinalysis results to return, by which time the inmate had sometimes been moved out of the correctional centre. Participants were not discouraged from participating if they were not motivated to change and, furthermore, completion of the program could lead to known benefits such as reduced sentences. Therefore, treatment in JMCC was voluntary but incentive-based.

Participants were enrolled in a rolling group and moved to a separate unit. Even though being removed from the general population was seen as conducive to therapy because it allowed participants to let their guard down and likely limited drug access, some drawbacks were noted by stakeholders: 1) the unit that was known for holding sex offenders and some inmates were concerned about the stigma and hesitated to take part in the program, and 2) there were fewer facilities (e.g., an oval to walk on) and resources (e.g., a TV unless one was borrowed from elsewhere).

In the final iteration of the program, a dedicated Services and Programs Officer (SAPO) delivered daily sessions over 10 weeks comprising of Remand Addiction Intervention, CONNECT (a dialectical behaviour therapy resilience program), Narcotics/Crystal Meth Anonymous, one-on-ones with the SAPO as well as other activities such as creating a relapse prevention plan, completing an ASP workbook, community activities, and emotional check-ins. Because the majority of participants were on remand, they could not simultaneously participate in other programs.

Macquarie Correctional Centre

In MCC, on the other hand, inmates were referred to the program if they had a positive test, drug paraphernalia, or if they self-referred during COVID-19 lockdowns.[1] If it became clear that MCC inmates

[1] It is important to note that because the purpose of the ASP was to provide a therapeutic intervention as a response to drug-related misconduct, self-referral was not usually an available option to inmates. Only a few participants in MCC were allowed to self-refer during the COVID lockdowns when urine tests could not be conducted.

wanted to join the program to avoid the sanction rather than because of an intrinsic motivation to change, they were discouraged from participating.

Participants were enrolled in a non-rolling group format and remained dispersed throughout the general population for the duration of the program, potentially leaving access to drugs easier than for their JMCC counterparts. Initially, participants had to try and detox on their own at the start of the program with little support, making participation difficult. However, the buprenorphine injection was later provided which prevents withdrawal symptoms and has been shown to help people achieve abstinence from opioids and control cravings (Haight et al., 2019).

In the finalised program model, participants attended 20 sessions over 10 weeks where they completed discussion activities regarding what drugs and addictions are; cycles of change and addiction; improving self-awareness; understanding other people's roles in addiction; understanding feelings, especially anger; and relapse prevention. Participants also had emotional check-ins and some participated in Narcotics Anonymous as well. There was no dedicated and experienced facilitator to run the program for large portions of the pilot. Instead, senior Case Management Officers (CMOs) were required to facilitate sessions on top of their current workload.

Measures

A battery of self-report psychometric measures was administered to participants at both pre- and post-treatment. The measures were administered by the SAPO or Senior CMO by verbally asking the assessment questions to the inmate.

Use Frequency

This rating was made in relation to the drug the participant reported to have used most often since coming into jail or used most often in the last two weeks (depending on which centre they were in; hereafter "nominated drug"). Participants rated how often they used their nominated drug over the past two weeks (0 = never, 1 = once or twice, 2 = every 2-3 days, 3 = daily/almost daily).

Severity of Dependence Scale (SDS)

On the 5-item SDS (Gossop et al., 1992, 1995), participants rated their level of psychological dependence on their nominated drug. Higher total ratings indicated increased impaired control over drug taking and preoccupation and anxieties about drug use (e.g., "did you think your use of (drug) was out of control?", 0 = never/almost never/not difficult at all; 3 = always/almost always/almost impossible).

Drug-taking Confidence Questionnaire-8 (DTCQ-8)

On the 8-item DTCQ-8 (Sklar et al., 1999), participants rated how confident they were that they could resist using their nominated drug in various scenarios (e.g., "I would be able to resist the urge to use (drug) if I were angry at the way things had turned out", 0 = not confident at all; 100 = very confident). Higher average confidence ratings indicate higher coping self-efficacy.

Treatment Readiness Questionnaire (TRQ)

The 20-item TRQ (Casey et al., 2007) assesses an offender's readiness for treatment programs (e.g., "I want to change", 1 = strongly disagree; 5 = strongly agree). Higher total TRQ scores, following the recoding of negatively keyed items, indicate a higher degree of readiness to participate and engage in treatment. Offenders with a total score of 72 and above are classified as 'program ready' (Casey et al., 2007).

Analytical Plan

We first screened the data to check for any errors or missing values. If participants had one value missing on a scale, we replaced it with the mean of the other

values selected on that scale. If there was more than one missing value, however, that participant's data for that scale was excluded from analyses. One person included in our analyses selected two different responses for two items on the DTCQ-8 (i.e., they circled both "40" and "60"); we replaced both items with the mid-point of those responses ("50"). To ensure there were no fundamental differences in completers compared to other participants before the treatment began, preliminary analyses were also conducted to examine differences in pre-treatment ratings between completers, non-completers, and active participants.

A two-step approach was used in analysing the within-treatment change data. First, we analysed differences in ratings across time and centres for each scale using mixed ANOVAs which included pre- and post-treatment scores as a within-subjects factor and centre as a between-subjects factor. This analysis allowed us to examine whether the average change in scores from pre- to post-treatment was significant ($p < .05$) across the sample. Partial eta squared was used to identify the magnitude of change over time; values of .01, .06, and .14 indicate small, medium, and large effects, respectively. Given that the vast majority of participants nominated opioids as their primary drug, we did not analyse separately per drug type. To maximise our sample, all reported ANOVA results include participants who reported a different nominated drug at post-treatment compared to pre-treatment. We found the same pattern of results when we ran the same ANOVAs after excluding these participants.

Second, we conducted reliable change indexes (RCI) to examine change at an individual level. RCI statistics evaluate the statistical reliability of participants' within-treatment change; that is, whether their change over time accounts for more than just measurement error when compared to the typical scores from samples that would be considered dysfunctional on the assessment (Day et al., 2011; Gossop et al., 1992; Jones et al., 2021; Sklar et al., 1999). RCI is calculated as the difference between each participant's pre-treatment and post-treatment scores, divided by the standard error of the difference based on norms. Participants were included in RCI analyses if they nominated the same drug at both time-points or if they nominated two drugs at one time-point (e.g., "methamphetamines and opioids") and nominated one of those two drugs at the other time-point (e.g., "opioids"). They were excluded if their nominated drug was different at each timepoint to ensure we were examining change in relation to the same drug over time. Participants were classified as improved if their RCI was significant in a positive direction for that scale (SDS RCI: ≤ -1.96; DTCQ-8 and TRQ RCI: ≥ 1.96), unchanged if their RCI was non-significant (> -1.96 to < 1.96), and deteriorated if they had a significant RCI in a negative direction (SDS: ≥ 1.96; DTCQ-8 and TRQ: ≤ -1.96).

RESULTS

Preliminary analyses

We first ran preliminary univariate analyses to determine whether there were significant differences in pre-treatment ratings between completers, non-completers, and active participants (see Table 1). There were no differences between groups on any of our measures (p = .152-.961, ηp^2 = .001-.04, pairwise comparisons = .069-.992).

Use frequency

We analysed differences in drug use frequency ratings across time by centre with a mixed ANOVA. Pre- and post-treatment scores were included as a within-subjects factor and centre as a between-subjects factor. This analysis showed that participants reported using their nominated drug significantly less often at post-treatment compared to pre-treatment ($p < .001$, $\eta p^2 = .30$; see Table 2 for all mean assessment ratings). However, a

significant interaction (p = .007, ηp^2 = .14) clarified that while JMCC participants reported decreased drug use over time (pairwise p < .001), there was no significant change for MCC participants (p = .264; see Figure 1 for all ANOVA results). Further, while there was no difference in reported drug use between centres at pre-treatment (p = .276), drug use was significantly higher in MCC participants than JMCC participants at post-treatment (p = .004).

Table 1. Mean (standard deviation) scores for all measures split by completers, non-completers, and active participants

	n	*M* (SD)
Use frequency		
Complete	53	1.62 (1.16)
Non-complete	40	1.60 (1.22)
Active	10	1.50 (1.18)
SDS		
Complete	52	9.71 (3.31)
Non-complete	39	8.36 (4.49)
Active	11	8.64 (3.93)
DTCQ-8		
Complete	58	41.13 (24.89)
Non-complete	39	40.91 (23.33)
Active	11	48.64 (27.82)
TRQ		
Complete	46	74.82 (8.16)
Non-complete	39	73.05 (7.98)
Active	10	75.77 (7.04)

Substance dependence

A mixed ANOVA confirmed that there was no significant difference in SDS scores from pre- to post-treatment (p = .247, ηp^2 = .03), by centre (p = .356, ηp^2 = .02), nor was there an interaction between time and centre (p = .334, ηp^2 = .02). In other words, participants' level of psychological dependence on their nominated drug did not change from before to after treatment in either centre.

We then ran RCI analyses to determine whether participants' within-treatment change was statistically reliable (see Table 3 for all RCI results). Participants were categorised as unchanged, improved, or deteriorated. We found that more than half of the participants did not exhibit statistical change in drug dependency, about a quarter improved (i.e., their dependency reduced significantly), and the remaining deteriorated significantly over time. Percentages were similar when we examined RCI categories for each centre (see Table 3).

Drug taking confidence

A mixed ANOVA showed that DTCQ-8 scores increased over time in both centres (p < .001, ηp^2 = .37). There was no significant difference between centres, nor was there an interaction between time and centre (ps = .247-.878, ηp^2s = .00-.03). In other words, after program completion, participants from both centres felt more confident that they could resist using drugs in various situations compared to before the program. RCI analyses found that about half of the participants exhibited no change in confidence over time, over two-fifths improved, and only one person deteriorated. Percentages were similar when we examined RCI categories for each centre (see Table 3).

Treatment Readiness

Using a cut off score of 72 (with scores at or above 72 indicating treatment readiness), 67.6% of participants were treatment ready at pre-treatment compared to 97.1% at post-treatment. However, while a mixed ANOVA showed that treatment readiness significantly increased over time (p = .003, ηp^2 = .24), a significant interaction (p = .018, ηp^2 = .16) clarified that treatment readiness increased over time in JMCC participants specifically (p < .001), whereas there was no change in MCC participants (p = .704). Further, while there was no difference between centres at pre-treatment (p = .220), treatment readiness was significantly higher in JMCC participants than MCC participants at post-treatment (p = .045).

Table 2. Mean (standard deviation) pre- and post-treatment scores for all assessments by centre

Scores by centre		Pre-treatment		Post-treatment		Difference size
		n	*M* (SD)	*n*	*M* (SD)	*d*
Use frequency						
	JMCC	34	1.76 (1.16)	34	.18 (.72)	1.49
	MCC	18	1.39 (1.20)	18	1.00 (1.28)	0.37
	All	52	1.63 (1.17)	52	.46 (1.01)	0.93
SDS						
	JMCC	34	10.18 (3.55)	34	8.57 (4.67)	0.40
	MCC	17	8.59 (3.36)	17	8.44 (3.92)	0.04
	All	51	9.65 (3.54)	51	8.52 (4.39)	0.22
DTCQ-8						
	JMCC	33	39.81 (23.56)	33	62.34 (18.06)	-0.98
	MCC	23	44.64 (26.93)	23	68.45 (24.38)	-1.04
	All	56	41.79 (24.87)	56	64.85 (20.90)	-1.01
TRQ						
	JMCC	26	72.80 (7.26)	26	81.23 (4.71)	-1.42
	MCC	8	76.38 (6.30)	8	77.38 (4.10)	-0.17
	All	34	73.64 (7.12)	34	80.32 (4.80)	-0.79

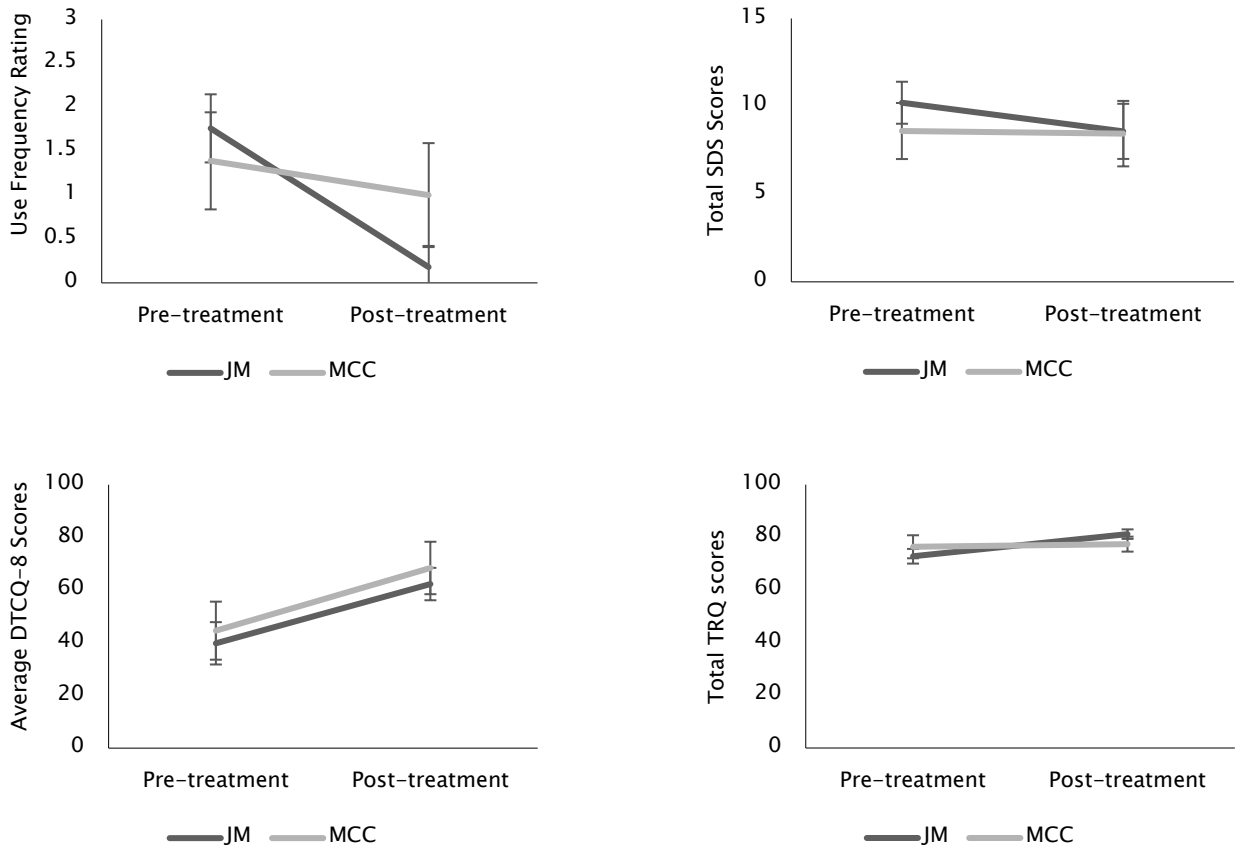

Figure 1. Psychometric ratings pre- and post-treatment by centre

RCI analyses showed that the majority of participants returned treatment readiness scores that remained unchanged over time, about one-fifth improved, and no participants deteriorated. When we examined RCI categories in each centre, percentages remained similar for JMCC participants whereas all participants in MCC remained unchanged over time (see Table 3).

Table 3. RCI categories for psychometrics by centre

	Unchanged		Improved		Deteriorated	
	%	*n*	*%*	*n*	*%*	*n*
Use frequency						
JM	55.6	15	25.9	7	18.5	5
MCC	64.3	9	21.4	3	14.3	2
All	58.5	24	24.4	10	17.1	7
SDS						
JMCC	51.9	14	44.4	12	3.7	1
MCC	57.1	8	42.9	6	0.0	0
All	53.7	22	43.9	18	2.4	1
DTCQ-8						
JMCC	70.0	14	30.0	6	0.0	0
MCC	100	8	0.0	0	0.0	0
All	78.6	22	21.4	6	0.0	0
TRQ						
JMCC	55.6	15	25.9	7	18.5	5
MCC	64.3	9	21.4	3	14.3	2
All	58.5	24	24.4	10	17.1	7

DISCUSSION

The primary aim of this study was to investigate whether ASP participants show change in a range of substance abuse-related risk factors and treatment readiness before and after completing the program. Before commencing the program, participants often presented high levels of risk factors associated with substance dependence. On average, their drug use frequency ranged between once or twice and every 2-3 days in the last couple of weeks and they reported low confidence that they could resist drug use in certain contexts. Further, 94.1% of participants scored five or above on the SDS, which has been indicated in the research literature as consistent with a diagnosis of opioid (specifically, heroin) dependence (Castillo et al., 2010).

Overall, our results gave promising initial indications that directing people in custody into a therapeutic intervention after drug-related misconduct, in the form of participation in the ASP, was successful in producing measurable change in a range of drug-related outcomes. Specifically, global effects of participation in the ASP included significantly reduced drug use frequency and increased self-efficacy and treatment readiness. The only outcome that showed no change over time was psychological dependence.

Increased self-efficacy across both centres is a promising finding given that some studies have shown that self-efficacy is related to treatment outcomes such as the quantity of alcohol or drugs consumed (see Carroll & Kiluk, 2017; Kadden & Litt, 2011 for review). For example, Ilgen et al. (2005) found that a score of 100 on a self-efficacy scale at the end of substance use treatment was the strongest predictor of abstinence a year later. However, others have argued that high self-reported self-efficacy may suggest denial or overconfidence which can result in negative consequences such as making less effort to acquire the skills necessary to cope with problem behaviour (Burling et al., 1989). Furthermore, other studies have found that higher self-efficacy predicts drug use only in the short term but not after more time had passed (Dolan et al., 2008), perhaps because self-efficacy itself reduces after treatment (Brown et al., 2002). Further study would be beneficial to better assess the longer-term effects of ASP on factors such as drug taking confidence and how they relate to behavioural outcomes.

Overall, the main effects of the program across centres are encouraging. However, it is important to note that interaction findings indicated that the magnitude of effects varied significantly across centres for some measures. Specifically, we found

that frequency of drug use decreased, and treatment readiness increased, over time but further analyses qualified that these improvements were found in JMCC participants only. Therefore, given that the ASP was delivered differently in each centre, an implication is that the impact of the program to improve drug-related outcomes may be dependent on the specific operational aspects of the program.

There are a few operational aspects in particular that may have moderated findings between centres. For example, housing JMCC participants in a separate unit may have reduced drug use and, as such, improved treatment readiness. A few studies have found that residential or inpatient treatment, similar to how ASP was implemented in JMCC, may be more effective in preventing relapse compared to day or outpatient treatment (Greenwood et al., 2001; Pettinati et al. 1999; Pettinati et al. 1993). Indeed, housing all participants in a unit separate from the general inmate population likely diminished access to drugs, thus inevitably decreasing frequency of drug use. As another example, the deployment of a SAPO who likely already had the requisite skills to deliver the ASP from prior experience at delivering similar programs in a similar context, may have also contributed to the indications of relative program efficacy among JMCC participants. Consistent with this possibility, clinical research shows that therapist experience and training is associated with a number of measures of client improvement (Stein & Lambert, 1995).

On the other hand, there are other differences between the two models that may have had little to no impact on program efficacy; for example, the fact that completion of the program could lead to benefits for JMCC participants such as reduced sentences. Studies have shown that people who receive treatment ordered or supervised by the criminal justice system perceive greater external pressure to be in treatment. However, this pressure does not necessarily impact motivation for change or substance use and offending behaviours, compared to volunteers receiving the treatment outside of the system for reasons unrelated to offending behaviour (Schaub et al., 2010; Stevens et al., 2006). Therefore, treatment may be just as effective regardless of whether it is quasi-compulsory or even incentivised. Many offenders valued their treatment as an opportunity to receive treatment (Stevens et al., 2006). Our study found that participants in both centres had similar scores on the TRQ at pre-treatment, suggesting that JMCC and MCC participants were equally motivated to change. There could be other operational aspects that may or may not be relevant in maximising benefits for participants. To pinpoint these factors, further research is needed to determine the program's best practice.

Limitations and future directions

This study has some limitations that should be considered. Significantly, we did not obtain psychometric ratings for an equivalent comparison group who did not participate in the ASP, that is, inmates who were convicted of drug-related misconduct in prison but were sanctioned as normal. Without a comparison group, we cannot conclude whether the observed changes are attributed to the program or simply reflect spontaneous change over time. However, it is noted that differences in ASP operations across correctional centres allowed for relatively robust analyses of the causal effects of varying modalities of delivery on participant outcomes. Unfortunately, it was not possible to truly determine which operational aspects are key to improving outcomes given the extensive and evolving differences in ASP delivery between centres. That is, we are unable to determine with any certainty which factors led to differences in findings between centres. It is important that future implementations of the program are standardised as much as possible across centres to ensure program fidelity to best practice principles, and allow for more confident

evaluation of the relationships between what is being delivered and the observed outcomes.

Another limitation is the use of self-report psychometric measures to indicate within-treatment change. Although the extent of socially desirable responding in offenders is smaller than assumed (Mathie & Wakeling, 2011; Juarez & Howard, 2022) and self-report and risk appraisal procedures can produce similar results (Walters, 2006), offenders may be motivated to underreport risk factors (Tan & Grace, 2008). Further, research has shown that inmates' self-report responses can be impacted by changing context, with underreporting of risk factors becoming more likely at post-treatment compared to pre-treatment (Juarez & Howard, 2018). Therefore, reported reductions in negative thoughts and behaviours may not reflect true change. Unfortunately, methods of validating individuals' responses such as by comparing responses with findings from other data collection methods (e.g., urinalysis at both pre- and post-treatment, reports of participants' drug use from friends) can be difficult to implement consistently in this context. As such, the most practical approach to handle self-report bias in future studies is to continue using measures that have been validated with similar drug-using samples, as we have done in this study.

We also did not measure follow-up outcomes, an important limitation given that past findings on the effectiveness of prison-based substance abuse treatments post-release are ambiguous (Mitchell et al., 2007). Therefore, future studies could examine whether there are continued benefits to ASP participation, albeit with an understanding that inmates may participate in other programs post-ASP which may influence these findings.

Last, the small sample size may have underpowered our analyses and distorted our results. Low statistical power reduces both the chance of detecting a true effect and the likelihood that a statistically significant result reflects a true effect (Button et al., 2013), suggesting that future studies would benefit from larger samples.

Conclusions

Overall, the study provides preliminary indications that the ASP shows promise in addressing and improving substance use-related risk factors. Encouragingly, self-efficacy increased for participants in both centres, meaning that confidence in resisting drug use may improve from ASP participation regardless of how the program is delivered. On the other hand, we found evidence that improvements in use frequency and treatment readiness were more pronounced in JMCC participants compared to their MCC counterparts. This pattern has important implications for best practice in implementing the ASP and on further understanding what operational aspects of the program at each of the pilot sites may have contributed to variance in outcomes. Ultimately, identifying best practice principles of program delivery and ensuring fidelity to those principles across sites will be critical in ensuring positive outcomes for participants as targeted by the intervention.

Overall, our findings provide initial indications that participation in the ASP may be a promising response to drug-related misconduct as an alternative to more punitive sanctions; especially given that punishment, including imprisonment itself, does not always lead to positive outcomes such as reduced misconduct (Trevena & Weatherburn, 2015). The findings of this study are the first to contribute to an understanding of the outcomes of ASP that will be supported by additional evaluations in the future.

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