Introducing the Matrix methamphetamine treatment program to Australia: a Pilot and subsequent development and trial of the Australian adaptation.

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Background

Globally, methamphetamine use is estimated at between 13.9 and 53.4 million people[1], with an estimated 17.2 million people having dependence[2]. In Australia, 6.3% of the population over 14 years of age have used methamphetamines in their lifetime, with 1.4% having used it in the last 12 months[3]. The main use of the substance is in the form of methamphetamine hydrochloride, also known as 'crystal meth' or 'ice', a more pure form of methamphetamine, with majority of users, 57.3%, consuming methamphetamine in this form during 2016, a substantial rise from 26.7% in 2007[4].

The Original Matrix Model and Objectives

The Matrix program was developed in the United States of America (USA) in 1986 to assist people with cocaine addiction (Rawson 1986). Initial results from the Matrix study showed that the Matrix clients used significantly less cocaine at follow-up[5]. Similar results were shown at replications of the study during 1991 and 1996. The goal of the Matrix model has been to provide a multi-facet programme which can assist drug users by helping them to achieve abstinence from drug use, remain in a treatment program for a longer period of time, understand the background to addiction and relapse, receive support from a trained therapist, educate family members, become familiar with self-help programs and maintain personal accountability and monitoring via urine testing.

The Australian Adaptation

After an initial pilot the South Australian Matrix programme was modernized to incorporate culturally appropriate Australian language and statistics, additional modules for the early recovery skills and relapse prevention, male gender groups, online 'apps', lived experience mentors and was extended from a 16 to a 20-week program. Modules that were added to the Australian Matrix Program included: Gambling, Steroid Usage, Body Image, Opioids and Pain, Internet and Social Media Usage, and Indigenous Australian Culture. The adaptation to the program included the valuable addition of Lived-Experience Mentors (LEM) in the development of Australian language and culturally relevant social support modules.

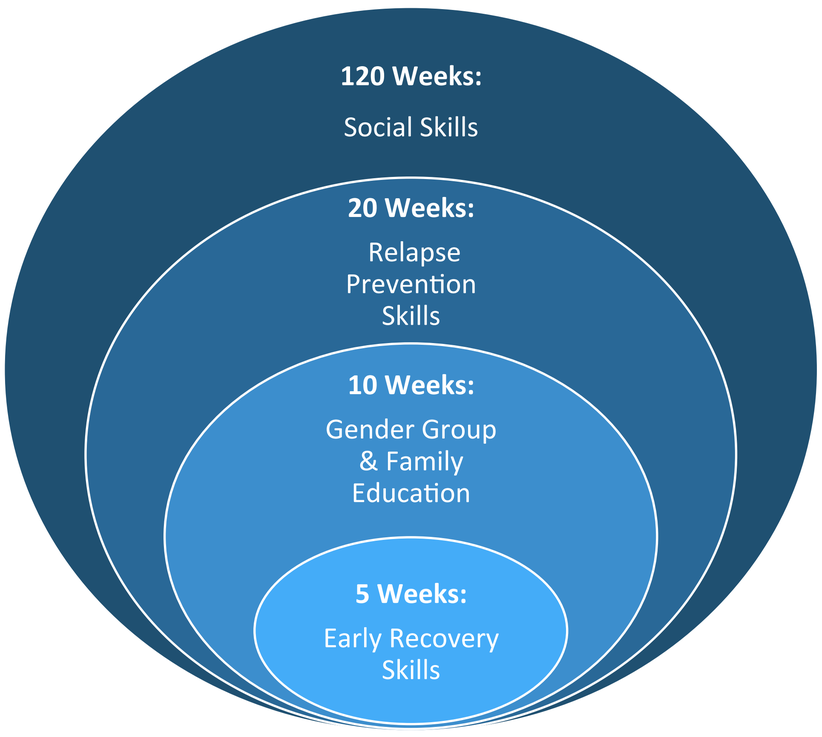

Figure 1. Diagram of Australian Adaptation of the Matrix Program.

Methodology

Participants are required to attend three days per week, consisting of 7 sessions including 2 early recovery skills (ERS) and 2 relapse prevention (RP) sessions, and one session that covers gender specific recovery issues (GG), family education (FE) and social support (SS) in addition to 3 individual sessions. Following the initial 20-week intensive program there is ongoing support for 104 weeks. See Table 1.

Participants

The current research included data from a sample of 59 clients whom completed in full, either the initial 16 week program or the 20 week Australian adaptation.

Outcome Measures

Measures collected from each participant include the Kessler Psychological Distress Scale (K10), Severity of Dependence Scale (SDS), Visual-analogue Craving Scale (VAS), Timeline follow back (TLFB), World Health Organisation Quality of Life Scale (WHO-QoL) and remission data from self-report usage and uri-analysis measures.

Table 1: *Matrix Treatment Protocol; clients are expected to attend all three sessions each week.*

	Intensive Treatment: Week 1-5	Intensive Treatment: Week 6-20	Continuing Care: Week 21-124
Monday	**ERS: 1 hour RP: 1.5 hours**	**ERS: Optional RP: 1.5 hours**	
Tuesday	*12-Step or Smart Recovery Group encouraged*		
Wednesday	**FE/GG: 1.5 hours SS: 1 Hour**	**FE/GG: 1.5 hours SS: 1 hour**	**SS: 1 hour**
Thursday	*12-Step or Smart Recovery Group encouraged*		
Friday	**ERS: 1 hour RP: 1.5 hours**	**ERS: Optional RP: 1.5 hours**	
Weekend	*12-Step or Smart Recovery Group encouraged*		

Results

Remission rates were based on a period of at least 4 weeks of abstinence. Remission was measured subjectively (using self-report measures) and objectively (uri-analysis). Results indicate that 66% of clients achieved a 4 week remission period. Black, et al. (2017) reported that almost 48% of clients maintained complete abstinence, and a further 28% used methamphetamine 5 times or less throughout the Matrix treatment program[6].

Methamphetamine Outcome Measures

The initial results from 59 clients whom completed the program, indicated a significant decrease in days using methamphetamine from the initial assessment (M=21.5, SD=25.8) to completion (M=3.9, SD=11.3) of the Matrix Program, $t(42)=4.6$, $p=<.001$, as measured on the TLFB.

Initial results indicated a significant reduction in severity of dependence from the initial assessment (M=7.3, SD=3.8) to completion (M=4.1, SD=4.2) of the Matrix Program, $t(48)=5.0$, $p=<.001$, as measured on the SDS.

Initial results indicated a significant reduction in methamphetamine urge from the initial assessment (M=5.6, SD=2.9) to completion (M=2.8, SD=3.0) of the Matrix Program, $t(47)=6.3$, $p=<.001$ as measured on the VAS.

Quality of Life And Distress Outcome Measures

Initial results indicated a significant improvement in quality of life from the initial assessment (M=5.9, SD=1.4) to completion (M=8.2, SD=1.9) of the Matrix Program, $t(15)=-3.9$, $p=.001$. As measured on the WHO-QoL.

Initial results indicated a significant reduction in psychological distress from the initial assessment (M=27.9, SD=9.9) to completion (M=19.4, SD=8.3) of the Matrix Program, $t(49)=6.3$, $p=<.001$ as measured on the k10.

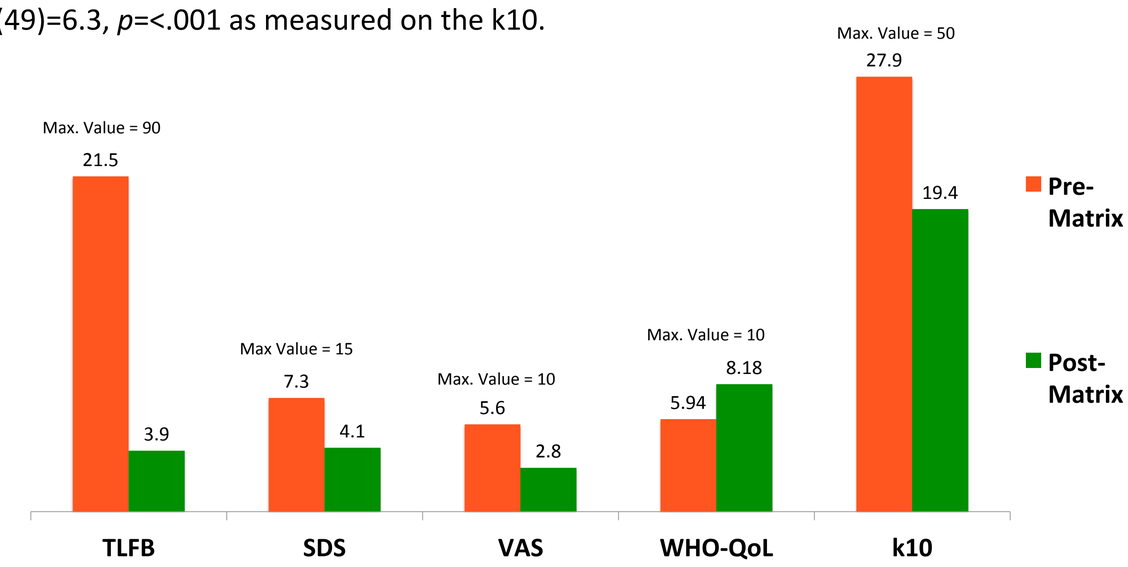

Figure 2. Methamphetamine and Quality of Life Outcome Measures, Before Matrix Treatment Program and after either the 16-week or 20-week Matrix Treatment Program.

Conclusions

Preliminary results showed significant reductions in methamphetamine use, cravings, dependence and psychological distress after completion of the Matrix intensive treatment. Future analyses in early 2019 will provide one year follow up data for the Australian adaptation to enable comparison wth the 16 week Australian trial and past US trials. The program continues to offer new hope and alternative effective community based treatment for methamphetamine users and their families in Australasia, with components of the Adelaide pilot being used in Perth, Brisbane and the Philippines.

References

[1]UN., (2015)
[2]Degenhart et al., (2010)
[3]Australian Bureau of Statistics [ABS], (2016)
[4]Australian Institute of Health and Welfare, (2017)
[5]Rawson et al., (1986)
[6]Black, et al., (2017)

Disclosure of Interest Statement

The Australasian Professional Society for Alcohol and other Drugs (APSAD) recognises the considerable contribution that industry partners make to professional and research activities. We also recognise the need for transparency of disclosure of potential conflicts of interest by acknowledging these relationships in all written publications.