



# Motivational Interviewing Can Facilitate Entry to Matrix Treatment for Methamphetamine Dependence

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## Abstract

**Background:** Methamphetamine dependence on a stable methadone dose is a health problem in Iran (i.e. the most populated Persian Gulf country). However, many Iranian patients are not motivated to enter treatment.

**Objectives:** The study aimed to assess the efficacy of motivational interviewing for entry to matrix treatment for methamphetamine dependence.

**Methods:** A study was conducted on 275 Persian male and female methadone patients who were methamphetamine-dependent, however they reported unwillingness to receive the matrix model. The study was conducted in 20 methadone services in Karaj, Iran during 2014. Addiction severity index was used to collect data on demographics and illicit drug use. Psychological well-being and social functioning were assessed using the Persian versions of the general health questionnaire-28 and the social functioning subscale of the opiate treatment index.

**Results:** The study indicated that 5 sessions of motivational interviewing were significantly efficacious in increasing attendance in the Matrix Model in the treatment group ( $P < 0.001$ ). Attendance in motivational interviewing was significantly accompanied with increased psychological well-being ( $P < 0.001$ ) and social functioning ( $P < 0.001$ ).

**Conclusions:** Motivational interviewing should be provided for those participants who are methamphetamine dependent but are not motivated for change. Conducting randomized controlled trials is suggested.

**Keywords:** Matrix Model, Methamphetamine, Motivational Interviewing, Treatment

## 1. Background

In recent years, methamphetamine dependence has become a serious health problem in methadone maintenance treatment in Iran (Persia) (1-3). Psychological treatments are the main interventions for methamphetamine dependence (3). One of them is motivational interviewing (4).

Motivational interviewing is a therapeutic approach that was developed in the field of drug and alcohol treatment (4). This treatment utilizes the principles of individual centred counselling to encourage people to move through the stages of change (5). People's resistance is considered as evidence of conflict or ambivalence and is addressed with reflection style (4). Motivational interviewing is counselling style-based on these assumptions: ambivalence about drug dependence is normal and refers to an important motivational barrier to recovery (6). Ambivalence can be managed by working with motivations. There-

fore, an empathic counselling style can facilitate change to stop drug dependence (7).

Motivational interviewing recognizes and accepts the fact that patients who need to make changes in their lives approach counselling at different levels of readiness to change. During counselling, some clients may have thought about making a behavioural change, but are not likely to have yet taken steps to make change. Other patients are likely to be actively trying to change their behaviors and may have been doing so unsuccessfully for a long time (6).

Motivational interviewing attempts to increase the client's awareness of the potential problems caused and risks faced (6). Motivational interviewing focuses on the present, and entails working with a patient to access motivation to change (5). Another important concept is that ambivalence about decisions is managed by weighing of pros and cons of change versus not changing (7).

## 2. Objectives

For the first time, the current brief report aimed to determine the efficacy of motivational interviewing in encouraging Iranian methadone patients with methamphetamine dependence to enter the matrix model. The other aims were to assess the efficacy of motivational interviewing in improving psychological well-being and social functioning among the participants.

## 3. Materials and Methods

The study design was quasi-experimental. Overall, 276 participants were assigned into 2 groups (1 intervention group and 1 control group). The samples were recruited from 20 methadone treatment clinics in Karaj, Iran in 2014. The intervention group included 87 men and 50 women. The control group included 88 men and 50 women.

Participants who were in methadone treatment and were dependent on methamphetamine but did not like to participate in matrix model were recruited for this study. Participants were in methadone treatment for at least 3 months. They met the DSM-IV-TR criteria for methamphetamine dependence while in methadone treatment. The study inclusion included individuals 18 years and above. Male or female gender was included in the study. The exclusion criteria included self-reporting severe medical or psychiatric conditions at the time of interview.

Participants in the intervention group received 5 60-minute sessions of motivational interviewing for 5 consecutive weeks while the control group was in the wait-list control condition over the same time. All intervention sessions were conducted individually in private interview rooms at the study centers. Participants were informed that participation was voluntary and confidential. All participants signed a consent form before conducting the study. The study was approved by Tehran University (939548) in Tehran, Iran.

Addiction severity index (8) was used to collect data on demographics and illicit drug use. The Iranian versions of the general health questionnaire-28 (GHQ-28) (9) and the social functioning subscale of the opiate treatment index (10) were used to assess psychological well-being and social functioning. Higher scores of the GHQ-28 and the OTI indicate more problems. The cut-off point of 4 and more on the GHQ-28 indicates poor psychological well-being (9).

## 4. Results

The baseline characteristics of the participants have been reported in Table 1. There were no between-group differences in terms of mean age ( $t = 0.12$ ,  $P = 0.26$ ), living sta-

tus ( $X^2 = 0.97$ ,  $P = 0.18$ ), marital status ( $X^2 = 0.87$ ,  $P = 0.19$ ), educational status ( $t = 0.42$ ,  $P = 0.17$ ) and job status ( $X^2 = 0.78$ ,  $P = 0.42$ ). The duration of methamphetamine dependence was 6 years. Lifetime methamphetamine treatment (community treatment program) was reported by only 20% of the participants (Table 1).

Five sessions of motivational interviewing were significantly efficacious in increasing attendance in the Matrix Model in the treatment group ( $P < 0.001$ ). Attendance in motivational interviewing was significantly associated with improved psychological well-being ( $P < 0.001$ ) and social functioning ( $P < 0.001$ ) in the treatment group (Table 2).

## 5. Discussion

The study indicated that 5 sessions of motivational interviewing were significantly efficacious in increasing attendance in the Matrix Model in the treatment group. Attendance in motivational interviewing improved psychological well-being and social functioning in the treatment group. A recent study in Iran indicated that motivational interviewing increased treatment entry for methamphetamine dependence (11). A study indicated that motivational enhancement improved social functioning and psychological well-being among people with regular amphetamine use problem (12). Further studies are suggested.

Due to the lack of adequate funding, the study design was quasi-experimental. Randomized control trials with 6 and 12-month follow-ups should be conducted. Future studies should consider these treatment outcomes in terms of gender differences.

The brief report indicated that motivational interviewing was an effective treatment. This was accompanied with improvements in the social and health contexts of the participants. Further studies are still needed on those aspects of motivational interviewing, which can result in retention in the Matrix Model and abstinence from methamphetamine.

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## Footnotes

**Authors' Contribution:** Sima Salimi designed the study. Mohammad Effatpanah and Alireza Mahjoub contributed to data collection and designing the research dataset, and did data entry. Sima Salimi analyzed the data and drafted

**Table 1.** Baseline Characteristics

Variables	Treatment Group (n = 137)	Control Group (n = 138)	X <sup>2</sup> /t	P
Mean age, year	35.42 (SD = 8.91)	34.00 (SD = 8.92)	t = 0.12	0.26
Living status			X <sup>2</sup> = 0.97	0.18
Stable	68 (49.63%)	62 (44.92%)		
Unstable	69 (50.36%)	76 (55.07%)		
Marital status			X <sup>2</sup> = 0.87	0.19
Currently married	68 (49.63%)	60 (43.47%)		
Currently unmarried	69 (50.36%)	78 (56.52%)		
Educational status, year	7.00 (SD = 9.81)	6.50 (SD = 6.77)	t = 0.42	0.17
Job status			X <sup>2</sup> = 0.78	0.42
Currently jobless	57 (41.60%)	61 (44.20%)		
Currently employed	80 (58.40%)	77 (55.80%)		
Duration of methamphetamine dependence, year	6.32 (SD = 8.43)	6.12 (SD = 7.43)	-	-
Lifetime methamphetamine treatment <sup>a</sup>	27 (20.00%)	28 (20.00%)	-	-

<sup>a</sup>Therapeutic community programmes.

**Table 2.** Study Outcomes

Variables	Assessment Point	Treatment Group (n = 137)	Control Group (n = 138)	X <sup>2</sup> /t	P
Attendance <sup>a</sup>	Pre-test	23 (16.78%)	24 (17.39%)	X <sup>2</sup> = 0.16	0.07
	Post-test	125 (91.24%)	27 (19.56%)	X <sup>2</sup> = 2.87	< 0.001*
Psychological well-being	Pre-test	8.00 (SD = 9.61)	7.00 (SD = 8.62)	t = 0.38	0.06
	Post-test	3.50 (SD = 8.52)	7.00 (SD = 4.63)	t = 2.24	< 0.001*
Social functioning	Pre-test	18.00 (SD = 6.43)	17.00 (SD = 7.98)	t = 0.67	0.08
	Post-test	12.00 (SD = 5.34)	18.00 (SD = 6.53)	t = 2.19	< 0.001*

<sup>a</sup>Observed entries to Matrix treatment.

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