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Methamphetamine crisis in Iraq: Motivation of recovery, barriers of treatment, and mental health comorbidities

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Abstract

Methamphetamine use in Iraq is a growing concern and a complex issue that is associated with social, physical, and mental health problems. This study aimed to measure levels of motivation for recovery, barriers of treatment, and associated mental health comorbidities in clients with methamphetamine addiction, as well as determining the relationship between these variables. A descriptive correlational design using a non-probability sampling technique (convenience sampling) of consenting 257 methamphetamine addicts. The study was conducted in Thi-Qar Province, Al-Hayat Center for Recovery and Addiction Recovery Center and data were collected using six parts questionnaire, sociodemographic, health-related, the severity of dependence scale, motivation and readiness for substance abuse treatment scale, barriers to retention scale, and Arabic DASS 21scale. Severity of addiction among participants ranged between moderate to severe, they had moderate to high motivation level for recovery from substance. Participants experience moderate to severe barriers to treatment reveals. Most of participants experience severe level of depression, anxiety, and stress. Significant relationships are found between motivation of recovery, barriers of treatment, and mental health comorbidities. Despite those participants reported moderate to high level of motivation of recovery from substance, they have experienced various types of barriers to treatment that inhibit their ability change or continue in the treatment process, which also makes them at higher risk for mental health problems, including depression, anxiety, and stress.

Keywords: Methamphetamine addiction, Motivation of recovery, Barriers of treatment, Mental health comorbidities

Introduction

Methamphetamine is a central nervous system stimulant that is a powerful addictive substance. It is a crystalline powder, odorless, and bitter that is dissolved quickly in alcohol or water (Chomchai and Chomchai, 2015; Abbas et al., 2025). Methamphetamine was developed in the early of 20th century as a part from amphetamine drug, methamphetamine is the synthetic stimulant substance that is used worldwide. It was first used in nasal decongestants and bronchial inhalers. is similar to amphetamine in terms of causing decreased appetite, increased activity, talkativeness and pleasurable feeling of well-being or euphoria. However, at comparable doses, much greater amounts of the drug enter the brain, making it a more potent stimulant (Panenka et al., 2013).

Recovery from methamphetamine addiction dependents on several factors that play a role as barriers of recovery. Barriers of recovery include, but not limited to stress, fear of treatment, financial strain, social stigma, limited addiction service and access to service, and lack of family support (Luongo et al., 2017). However, other factors can play the role as motivation factors during therapy process, which improve the probability of remain motivated through treatment. Spiritual believe, family support, and availability of specialized health services (Owens et al., 2018).

Methamphetamine and mental health have a complicated relationship including depressed mood, psychosis, and suicide. On the other hand, individuals who have mental health issues are more likely self-medicate in order to cope with their psychological discomfort, which could be a risk factor for the onset of substance abuse (Robinson et al., 2009).

Substance abuse, including methamphetamine, has a number of psycho-social consequences such as family disintegration, job loss, and social isolation, all of which can exacerbate mental health issues.

Chronic methamphetamine use has been linked to both structural and functional alterations in the brain that may cause psychiatric disturbances (Rusyniak, 2013).

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Methods and Materials

Study design: A descriptive-correlational study design is used to achieve the study objectives including variables description and the relationship between independent variables (motivation of recovery for addiction, barriers of addiction treatment), and dependent variable(mental health) comorbidities for methamphetamine addiction. The study started in October 1, 2024 and finished in June 15, 2025.

Population and sampling plan: A non-probability sampling technique, convenience sampling, was used on a total sample of 257 consenting methamphetamine addicts (183 males and 74 females). Self-administered process was performed to gather study data, which started from 4th of December 2024, until 17th of February 2025. The time required for each subject around (10-20) minutes as a maximum time to complete the responses. About 280 individuals agreed to be a part of the study and received an anonymous questionnaire. About (8%, No. 23) did not return the questionnaire or the information were not complete, which led the research to remove them from the valid responses. Finally, a total of 257 valid forms were included in the study.

Study instrument: A comprehensive instrument composed of a five parts questionnaire, the sociodemographic variables, health-related variables, motivation and readiness for substance abuse treatment scale, barriers to treatment scale, and DASS-21 scale (Arabic version). The motivation and readiness scale is used for measuring motivation for substance treatment. It consists of 18 items that are rated on five-points Likert scale as follows: ''strongly agree''=5 ''agree''=4, ''neither agree or disagree'' =3, ''disagree''=2, ''strongly disagree''=1. The minimum score is 18 and the maximum score is 72. The higher score indicates a high level of motivation. The barriers for retention scale consists of 19 items that are classified in to 5 domains; : Perception of the need/ value of treatment, fear of social, fear of leaving substances, personal barriers, and basic logistic barriers. Total items are measured on five points Likert scale as fallow: strongly disagree = 1, disagree = 2, neither agree or disagree = 3, agree =4, strongly agree = 5. The minimum score a participant can achieve is 19 and the maximum score is 95, and the higher score indicates a high level of barriers of treatment.

The Arabic version of the DASS scale was used to measure the psychiatric comorbidities of methamphetamine users. This scale consists of 21items that are measured on a four- point Likert scale 1= did not apply to me at all; 2= apply to me to some degree or some of the time; 3= applied to me to a considerable degree or a good part of time; 4= applied to me very much or most of the time. Scores on the DASS-21 will need to be multiplied by 2 to calculate the final score as follow:

D (Depression) = Items 3, 5, 10, 13, 16, 17, 21 (Total score x 2 = Depression). normal = 0-9, mild depression = 10-12, moderate depression = 13-20, severe depression = 21-27, and extremely severe level = 28-42.

A (Anxiety)= Items 2, 4, 7, 9, 15, 19, 20 (Total score x 2 = Anxiety). normal = 0-6, mild anxiety = 7-9, moderate anxiety =10-14, severe anxiety = 15-19, and extremely severe level = 20-42.

S (Stress) = items 1, 6, 8, 11, 12, 14, 18 (total score x 2 = stress). normal = 0-10, mild stress = 11-18, moderate stress = 19-26, severe stress = 27-34, and extremely severe level = 35-42.

Ethical approvals: The study is proved as free of physical or emotional harm by the Research Ethics Committee at the University of Kufa. The administrational approval was obtained from the Ministry of Iraqi Health, Department of Planning, Health Research Section. The approval was also obtained from the administrations of the study settings, Thi-Qar Health Directorate Al-Hayat Center for Recovery in AL Hussein Teaching Hospital and Addiction Recovery Center in Directorate of Narcotics and Psychotropic Substances Affairs.

Statistical analyses: Descriptive statistics analysis was used to describe the demographic data, health-related variables, severity of addiction, motivation for recovery, barriers of treatment, mental health. Correlation Analysis was used to measure the relationship between independent variable (motivation for recovery, barriers of treatment) and dependent variable (mental health).

Study Results

Table 1: Descriptive analysis was used to describe the demographic variables of study participants. The findings indicates that the majority of participants were young adults (47.9%) aged between 27–37 years old and (38.9%) followed by the age between 16–26 years old. (71.2%) of the study sample are male.

Table 1. Descriptive statistics of the socio demographic variables of methamphetamine users

Age Groups	**F**	**%**
16 - 26 Years Old	100	38.9
27 - 37 Years Old	123	47.9
38 - 48 Years Old	29	11.3
49 - 59 Years Old	4	1.6
60 and Older	1	.4
Total	257	100.0
Sex	F	%
Male	183	71.2
Female	74	28.8
Total	257	100.0
Education Levels	F	%
Does not Read or Write	44	17.1
Primary Education	142	55.3
Secondary Education	61	23.7
University Education	10	3.9
Total	257	100.0
Living Address	F	%
Country	51	19.8
City	206	80.2
Total	257	100.0
Marital Status	f	%
Single	90	35.0
Married	118	45.9
Separated	23	8.9
Widow	9	3.5
Divorce	17	6.6
Total	257	100.0
Occupation	f	%
Governmental Employee	76	29.6
Not Working	57	22.2
Retired	3	1.2
Free Jobs	121	47.1
Total	257	100.0
Monthly Income	f	%
Enough	73	28.4
Enough to some Extent	138	53.7
Not Enough	46	17.9
Total	257	100.0

Most of the methamphetamine users had primary education (55.3%), followed by secondary education (23.7%). In regard to living address, urban residents constituted (80.2%). Married individuals were the largest group (45.9%), followed by singles (35.0%). Nearly half (47.1%) of the participants reported having free jobs, while (22.2%) reported unemployed. In regard to income, more than half (53.7%) of the participants reported income as enough to some extent, followed by (17.9%) reported not enough income.

Table 2: The descriptive statistics of health-related variables among methamphetamine users reveal several key patterns. First, with relation to smoking history, most individuals (73.2%) were current smokers; a lesser percentage classified as ex-smokes (5.1%) or non- smokers (21.8%). This implies that among users of methamphetamine, smoking is rather common.

When looking at concurrent drug usage, most (75.5%) participants said they did not take other drugs alongside methamphetamine; (24.5%) of people did. This suggests that although a subset of users engage in polydrug use, most members of this group do not follow this pattern. Regarding mental health history, (59.1%) of participants said they had no such history whereas (40.9%) reported having a history of mental disease.

Although a small majority of this cohort claimed not to have any past mental health troubles. This emphasizes a quite high frequency of mental health problems in this group.

Table 2. Descriptive statistics of the health-related variables of methamphetamine users

Smoking History	**f**	**%**
Smoker	188	73.2
Ex-Smoker	13	5.1
Not Smoker	56	21.8
Total	257	100.0
Using other Drugs with Methamphetamine	f	%
Yes	63	24.5
No	194	75.5
Total	257	100.0
History of Mental Illness	f	%
Have History	105	40.9
No History	152	59.1
Total	257	100.0

Table 3 The descriptive analysis of motivation levels for recovery among substance users indicates that the majority of participants exhibiting moderate to high motivation (52.1%), also a significant proportion (40.5%) demonstrated high motivation level for recovery. Conversely, a (7.4%) exhibited low level of motivation.

Table 3. Descriptive statistics of motivation level of recovery from substances

Motivation for Recovery	F	%
Low Motivation	19	7.4
Moderate Motivation	134	52.1
High Motivation	104	40.5
Total	257	100.0

Table 4: Descriptive analysis of barriers to treatment A among methamphetamine users. The analysis of treatment barriers across five key domains reveals significant challenges that may hinder recovery efforts, as well as areas where individuals exhibit greater resilience. Regarding domain 1, perception of the need/value of treatment (72.4%) of participants had a low perception level of treatment necessity, while only (7%) viewed it as highly valuable.

Fear of social stigma domain, over half (56.4%) reported low level of fear of social stigma, but a notable portion experienced "moderate (29.2%) or severe (14.4%) fear of social stigma. Concerning domain 3, fear of leaving substances, the majority

(83.7%) had low fear of quitting substances, with only (1.2%) expressing severe fear. In regard to 4th domain, personal barriers, the findings show that over half (52.1%) of methamphetamine users who participated in the study had moderate level of personal barriers and participants with high level(24.5%) had high levels.

Basic logistic barriers are the last domain measured using the descriptive statistical analysis, the finding in table 5indicates that nearly equal proportions reported mild (45.9%) and moderate (45.1%) levels of logistical barriers.

The findings of overall levels of barriers to treatment reveals that about half of study participants (50.6%) experienced moderate barriers; while, (47.5%) had mild barriers.

Table 4. Descriptive statistics of barriers of treatment

Domain 1: Perception of the need/ value of treatment	f	%
Low Perception	186	72.4
Moderate Perception	53	20.6
High Perception	18	7.0
Total	257	100.0
Domain2: Fear of Social Stigma	f	%
Low Fear	145	56.4
Moderate Fear	75	29.2
Severe Fear	37	14.4
Total	257	100.0
Domain 3: Fear of Leaving Substances	f	%
Low Fear	215	83.7
Moderate Fear	39	15.2
Severe Fear	3	1.2
Total	257	100.0
Domain4: Personal barriers	f	%
Mild Level of barriers	60	23.3
Moderate Level of barriers	134	52.1
High Level of barriers	63	24.5
Total	257	100.0
Domain5: Basic Logistic Barriers	f	%
Mild Level of barriers	118	45.9
Moderate Level of barriers	116	45.1
High Level of barriers	23	8.9
Total	257	100.0
Overall Barriers of Treatment	f	%
Mild Level of barriers	122	47.5
Moderate Level of barriers	130	50.6
High Level of barriers	5	1.9
Total	257	100.0

Table 5: This table displays the common mental health comorbidities among methamphetamine users who participated in this study. The mental health assessment of participants indicates significant levels of psychological distress, especially concerning depression, anxiety, and stress. In regard to depression levels, (45.9%) of participants indicated extremely severe depression, whereas (18.3%) exhibited severe symptoms, (12.8%) of the participants fell within the normal range.

Findings related to anxiety, a significant proportion (72.4%) exhibited extremely severe anxiety, (7.4%) severe symptoms, and (10.1%) were scored normal Psychological stress is the third common mental health comorbidity among methamphetamine users.

Table 5. Descriptive statistics of mental health comorbidities

Depression Levels	**f**	**%**
Normal	33	12.8
Mild	17	6.6
Moderate	42	16.3
Severe	47	18.3
Extremely Severe	118	45.9
Total	257	100.0
Anxiety levels	f	%
Normal	26	10.1
Mild	3	1.2
Moderate	23	8.9
Severe	19	7.4
Extremely Severe	186	72.4
Total	257	100.0
Stress Levels	f	%
Normal	53	20.6
Mild	21	8.2
Moderate	34	13.2
Severe	79	30.7
Extremely Severe	70	27.2
Total	257	100.0

A significant proportion of individuals were found to have severe level of stress (30.7%), (27.2%) had extremely severe levels. In total, more than half (57.9%) experienced severe or greater levels of stress.

Table 6: The Pearson Correlation analysis demonstrates statistically significant correlations between participants, scores of motivations for recovery and their mental health (depression, anxiety, and stress) as well as overall score. The findings of table 6 indicates that there is a statistical significant relationship between depression and motivation for recovery ($r = .387$, $p < .001$); a statistical significant relationship between anxiety and motivation for recovery ($r = .378$, $p < .001$); a statistical significant relationship between stress and motivation for recovery ($r = .348$, $p < .001$). In terms of the overall mental health comorbidities, a statistically significant relationship was also with the motivation for recovery from substances ($r = .388$, $p < .001$). There is a statistically significant relationship exist between overall treatment barriers and depression ($r = .404$, $p < .001$), anxiety ($r = .393$, $p < .01$), and stress ($r = .422$, $p < .01$).

Table 6. Relationship between clients' motivation for recovery, barriers of treatment, and their mental health comorbidities

		Overall Mental Health	**Depression**	**Anxiety**	**Stress**
Motivation for Recovery	Pearson Correlation	.388**	.387**	.378**	.348**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	257	257	257	257
Overall, Barriers of Treatment	Pearson Correlation	.425**	.404**	.393**	.422**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	257	257	257	257
**. Correlation is significant at the 0.01 level (2-tailed).					

Discussion:

Regarding the levels of motivation for recovering from substances, the findings of the present study highlighted that moderate level is the most prevalent level which constitute more than half of participations. High motivation is also representing major part of the sample after moderate motivation. According to Ryan & Deci, 2000, whilst inner variables inspire great motivation, external forces such as legal pressure, which often results in middling motivation. A meta-analysis also indicated that long-term sobriety was predicted by intrinsic motivation which represents the personal health goals. Consistent with the 7.4% low-motivation category (Kelly et al., 2017). Reinforcement is the second key for motivation; the amount of structure and application of behavioral reinforcement varies based on the individual's motivation and stage status. Less motivated people, may benefit more from organized behavioral program with clear sub objectives and rewards for engagement and participation. This type of treatment may be less significant for persons who are more motivated for

managing mental illness or for changing substance abuse behavior (DiClemente, et al., 2008).

Another study finds a link between treatment motivation and social network pressure. Friends are an important target group for management during stage of developmental and may be crucial in motivation young people to seek treatment for their substance use. Friend pressure to take in a treatment program continues to be a significant indicator of internal motivation (Goodman et al., 2011).

Studies reported that finding elements affecting treatment motivation such as self-efficacy, belief on one's capacity for rehabilitation (Bandura, 1997; Jam et al., 2205). Two outside elements are social support from family or peers (Moos & Moos, 2007). Legal pressure, court ordered therapy (Wild et al., 2016). Clinical intervention, customized treatment plans, deal with personal obstacles (e.g., comorbidities related to mental health), Motivational interviewing (MI) is a great way to boost inspiration. The data reflects a broadly motivated sample, with external and internal factors shaping recovery readiness. Targeted interventions (e.g., MI for low-motivation groups) could optimize outcomes (Rollnick & Miller, 2013; Mansoor et al., 2025).

The result displays that the expose important new perspectives on the serious mental health issues methamphetamine users experience and the obstacles preventing treatment participation. These findings underline the great mental health load in this population as well as the immediate necessity of focused treatments addressing both structural and psychological challenges to recovery. The findings show a complicated terrain of obstacles to treatment, with inadequate awareness or low perception of treatment need rising as the most common problem and majority for study sample. Though less prevalent, fear of social stigma and practical constraints for logistic barriers nevertheless have great influence for some population groups.

The study finding more than half of participations moderate level have personal barriers. In addition, low fear for leaving substances. The study reported the narrative that revealed challenges to treatment and rehabilitation, including felling of homesickness, insufficient family support, fear of medical therapy, financial difficulties, social stigma, a sense of worthless. Social stigma is amore barriers to request treatment, stigma diminishes an individual's identity and is linked to stress and anxiety. Furthermore, drug dependence may be worsened by marital status, poor family connections, and contact with meth using peers. However, seeking or accepting treatment at a drug rehabilitation center is a result of the potential loss of family support and trust was high barriers and illicit drug use. Managing addiction on one's own without family support makes treatment sense hopeless (Valencia & Peters, 2023).

Another study highlighted that cost of care is a significant barrier to treatment, access mental health and substance use disorder services has long been restricted by a lack of health insurance and disparities in coverage related to other health disorders. Substance use disorders services may be more stigmatizing than mental health treatments due to more stigmatizing about others views. Negative attitudes towards substance use treatment have been primary factor for not using services according study by (Mojtabai, et al., 2014).

Study result conducted by(Alexander, et al., 2018). Reported significant perceived internal and external barriers to long term recovery include conflicting ideas about methamphetamine use and withdrawal symptoms, a lack of confidence, escaping the illicit substance environment, negative support from family and friends, and issues with treatment programs. According to (Janz& Beccker, 1984). Both perceived internal and external obstacles are not addressed, they will discourage and impede long term rehabilitation.

This study presents data on depression, anxiety, and stress levels among 257 methamphetamine users, revealing severe mental health challenges across all three domains. Extremely severe depression, dominates the data, majority of participants affected, and more than two third of participants in the current study experiencing severe to extremely severe symptoms depression, anxiety, and stress.

One of the studies that link substance abuse to mental illness indicates that prevalence of mental illness is highly associated with methamphetamine usage including mood disorder and anxiety disorders. These mental illnesses are induced by methamphetamine use (Salo et al., 2011).

According to research study reported by (Watt, et al., 2015). High rate of psychological problems were finding half had depression and more than half relating post-traumatic stress disorders . In spite the high prevalence of mental disorders, few participations have utilized mental health services highlighting significant an urgent need for mental health treatment.

A study done in 2012 align with the results of the current study, which highlighted some mental illness inducing factors. Risk factors for inducing psychotic symptoms among substance abusers include longer duration of use, heavier usage, injection as the method of administration, and a history of psychotic symptoms. Meth use can also exacerbate psychotic symptoms in individuals with schizophrenia. Depression is prevalent among meth users, with one-third reporting a diagnosis at some point in their lives. Adolescent meth use is linked to depression in adulthood, although early depression does not predict future meth use.

Anxiety disorders are also common, with 75% of users reporting significant anxiety symptoms after starting meth use, and 50% reporting pre-existing anxiety symptoms. Lifetime prevalence of anxiety disorders among meth users is 11%. Prolonged use, early initiation, high addiction levels, regular use, and injection are associated with higher rates of anxiety, depression, and suicidal tendencies. Violent behavior is also prevalent among meth users, particularly those who inject the drug. In the past year, 12% of users committed violent offenses, and over one-third reported assaulting someone while under the influence (Petit et al., 2012).

Depression related symptoms such as anhedonia, fatigue, a lack of activity, dysphoria during first week but subside by the end acute period. At the onset of subacute phase, less severe symptoms. While anxiety and craving, which can continue up to five weeks (Alexander et al., 2018). Regarding to research study was done In 2008 indicated that meth users experience social isolation, which associated more than only addiction related withdrawal symptoms. Challenges with social cognition may contribute to the depression linked to meth abuse. Impairment in social cognitive functioning may lead to increase violent behavior and aggression by (Homer et al., 2008).

Based on the findings of table 6, a strong statistically significant correlation is found between outcomes of mental health and levels of motivation for recovery from substances. Higher motivated people show less mental health problems. This conclusion is similar to study was done by (Sleem, 2025) who found moderate level over two-thirds of substance abusers who have self-empowerment. The study found nearly 75% of substance abusers used substance on a daily basis for over a year to cope conflicts, remorse, dissatisfaction. This negative impacts their self-esteem and self-empowerment. Kelly & Greene (2014) validate this finding by demonstrating that intrinsic motivation correlates with improved mental health outcomes in recovery-oriented populations.

The findings of table 6 conclude that mental health correlate significantly with barriers to treatment among methamphetamine users, worsening addiction cycles The study reported by (Valencia & Peters, 2023) justified the relationship by indicating that obstacles to recovery, such as addiction-related stigma has a strong connection to stress and anxiety. It also jeopardizes the client's successful rehabilitation due to unpleasant effects on mental health and self-esteem. Similarly, according to study conducted by (Wang, 2006). Individuals with comorbid mental problems were more likely to face difficulties in complying to treatment or seek treatment. Other perspective is that economic factor is also found as a significant obstacles to treatment from both substance abuse and mental health problems.

Conclusions:

This study aimed to measure the levels of motivation for recovery, barriers of treatment, mental health comorbidities among methamphetamine addiction, as well as the relationship between these variables. Methamphetamine use has become an alarming crisis in Iraq that need close attention. Despite those participants reported moderate to high level of motivation of recovery from substance, individuals reported various types of barriers to treatment that inhibit their ability change or continue in the treatment process. Methamphetamine abusers also found to be at higher risk for mental health problems, including depression, anxiety, and stress. In addition to the interchangeable effect between substance

abuse and mental health problems, experiencing barriers or challenging to treatment worsen the influence on their mental health. Therefore, the need for tailored programs or interventions has become crucial to address substance abuse -related mental health comorbidities and minimize the barriers for treatment.

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