The Effectiveness of a Programme Based on Matrix Therapy in Developing Emotional Self-Regulation and Reducing the Risk of Relapse Among Amphetamine Addicts at a Mental Health Hospital in Taif

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Abstract

Background and Aim: The lack of effective interventions for amphetamine addiction remains a significant public health concern worldwide. The purpose of this study was to determine the effectiveness of the Matrix therapy programme in developing emotional self-regulation and reducing the risk of relapse among a sample of amphetamine addicts at the Mental Health Hospital in Taif. Participants: The study sample included twenty-two males diagnosed with amphetamine abuse disorder, with an average age of 37.77±7.65 years, and visitors to the Mental Health Hospital in Taif. Methodology: Emotional Self-Regulation and Relapse Risk were used as study scales. The Relapse Risk Scale was translated into Arabic and used to determine the effectiveness of the 16-week Matrix therapy programme. Cronbach's alpha, Spearman and Brown half-fractionation methods were used to test the scale's stability and reliability. Mann-Whitney and Wilcoxon Rank test was applied to the data using SPSS. The treatment programme lasted 16 weeks. Findings: The results revealed that the Matrix therapy programme significantly (p=0.05) developed emotional self-regulation of positive cognitive strategies (acceptance, positive refocus, focus on plans) and reduced negative strategies (self-blame, rumination, blaming others). However, the programme did not affect dimensions such as re-evaluation of positive re-appraisal, setting the record straight, putting into perspective, and catastrophic thinking. The effect size (r) for the therapeutic programme in the experimental group compared to the control group on the dimensions of emotional self-regulation of statistical significance ranged from 0.697 to 0.854, indicating a large effect. The treatment programme effectively lowered (p=0.05) the risk of relapse among amphetamine addicts with a large effect size (r=0.848) between the experimental group and the control group.

Keywords: *Programme Based on Matrix Therapy, Emotional Self-Regulation, Relapse, Amphetamine Addicts, Mental Health Hospital in Taif, Therapeutic Programme, Drugs*

Introduction

Drug addiction and abuse are two of the most common problems and challenges confronting the world today (Dalal, 2020). Their consequences affect individuals and societies on multiple levels, including poor health, social and economic outcomes. According to the United Nations report on drugs and crime, amphetamines are among the most commonly utilized narcotics, with the rate of their use in Asia representing 0.5% of the continent's population aged 15-64, which is estimated at 12 million and 730,000 amphetamine users. Furthermore, 525 tonnes of amphetamine-type stimulants were seized that year, a 15% annual rise since 2010 (DRUGS &

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CRIME., 2022; Rajpal, 2022)

According to the Saudi Ministry of Health, amphetamines are only second to cannabis as one of the country's most widely used illegal drugs (1443; Substance abuse and dependence; Saudi Arabian Ministry of Health). The risk of relapse is a significant issue for drug addicts, including amphetamine addicts (Hendershot et al., 2011). It is influenced by factors including emotional state, drug craving, and lack of social support (Hendianti & Uthis, 2018). Abstainers from substance abuse in the recovery period face many challenges in controlling their emotional states or moods. They also struggle to control cravings for substance abuse, making emotional regulation one of the most critical factors associated with addiction, recovery, or relapse. According to Kober et al., drug use is an attempt to regulate the emotional state by increasing positive or alleviating negative emotions. The selection of a particular drug is not random but is related to the quality of negative emotions, and thus the quality of negative emotions guides the drug selection process. Alcohol and anxiolytic drugs like Valium and Xanax are linked to anxiety, while the use of depressive drugs like morphine is linked to depression (Kober, 2014). Moreover, using effective emotional regulation strategies decreases the likelihood of substance abuse when the individual is under the influence of substances (Bahrebar et al., 2019; Tiza et al., 2023)

Theoretical Framework and Previous Studies

Addiction to Amphetamines

Zou et al., defined substance addiction as "a neuropsychiatric disorder characterized by a frequent desire to continue taking the drug despite its serious consequences" (Zou et al., 2017). The term "amphetamines" was adopted as a type of stimulant [amphetamine-type stimulants (ATS)] at the 1996 World Health Organization meeting to describe amphetamines. Amphetamines are derived chemically from beta-phenethylamine and are distinguished by their stimulant effects on the central nervous system (Chung & Choe, 2019).

Relapse

Witkiewitz and Marlatt et al. distinguished three terms lapse, relapse, and prolapse, with the term "relapse" meaning a return to the previous behavior before the treatment process, associated with failure (Witkiewitz & Marlatt, 2007). Relapse is defined as "failure in the process of behavior change or inability to progress in the process of change, such as failure to maintain a state of abstinence from the drug" (Hendershot et al., 2011).

Emotional Self-Regulation

Emotional self-regulation is defined by Gross et al. as "the processes by which individuals influence their emotions and how they are felt and expressed, and these organizational processes may be automatic or intentional, conscious or unconscious" (Gross, 1998). Emotional regulation and addiction recovery are closely related concepts, as abstainers face substance abuse during their recovery period and frequently struggle to control their emotional states or moods and drug cravings. Stellern, and Weiss et al., conducted a systematic review of the relationship between emotional self-regulation and substance use disorders. They discovered that emotional self-regulation difficulties are related to substance use disorders (Stellern et al., 2023; Weiss et al., 2022).

Matrix Outpatient Therapy Program

The National Institute on Drug Abuse recommends the matrix therapy program (2018), a psychosocial intervention incorporating cognitive-behavioral therapy, motivational development, and therapeutic relationships (*Principles of Drug Addiction Treatment: A Research-Based Guide.* , 2018). This program involves individual therapy sessions, group sessions such as an early recovery and relapse prevention group, and

family and social support (Treatment, 2006).

Previous Studies

Rawson et al. compared the outcomes of the matrix therapy program with those of standard care for amphetamine addicts across eight US outpatient facilities. They found that the matrix program improved clinical attendance, treatment adherence, and duration of abstinence among a sample of 978 methamphetamine addicts compared to standard treatment (Rawson et al., 2004). The results from the matrix therapy program's experimental support for psychosocial approaches proved its efficacy. Eghbali et al. evaluated whether the matrix program helped to ease opioid addicts' transition to methadone treatment and mitigate their risk of relapse, as well as decreasing their anxiety, depression, and anger. Twenty-four participants were split into two groups: one group received standard care of methadone alone, while the other received methadone plus matrix therapy. The matrix therapy program effectively reduced relapse, increased treatment adherence, and alleviated symptoms of anxiety, depression, and anger (Eghbali et al., 2013; Şengül, 2022)

Zardkhaneh et al. sought to determine whether matrix therapy effectively enhanced emotional regulation and decreased relapse rates among Iranian methamphetamine addicts. The study sample consisted of thirty subjects, and fifteen were randomly assigned to either the experimental or the control group (Zardkhaneh, 2014). Thirty methamphetamine addicts in Iran were split into an experimental and control group for a study by Ghasemnezhad et al. aimed to determine whether matrix therapy effectively reduced the likelihood of relapse and increased the confidence of those undergoing methamphetamine withdrawal. The experimental group met twice weekly for therapy sessions using the matrix program for 18 weeks. Urine analysis and increased confidence in one's ability to use matracy were effective tools in the Matrix pro-program or reducing the risk of relapse. After three months of follow-up, the program's positive effects remained stable (Ghasemnezhad et al., 2016).

Amiri et al. used a sample of 40 methamphetamine addicts from Iran, split evenly between an experimental and control group, to evaluate the Matrix therapy program's efficacy in reducing cognitive-emotional regulation and craving difficulties for the drug among those dependent on the drug (Amiri et al., 2019). Zanjani et al. recruited thirty participants, dividing them into an experimental group and a control group, to test the efficacy of the matrix therapy program in helping methamphetamine users improve their self-control and emotional regulation. The matrix therapy group had twenty-four sessions over two weeks, and the outcomes showed that they benefited from matrix therapy's ability to improve self-control and emotional regulation (Zanjani et al., 2020). Hoe et al., evaluated the efficacy of combining the matrix therapy program and methadone to treat amphetamine addicts in Vietnam. The study sample comprised 951 methadone-dependent amphetamine users and was split into an experimental and control group (Hoe et al., 2021; Mohammed & Ahmad, 2022)

Study Questions and Problem

The importance of emotional regulation variables and relapse risks in addiction recovery and relapse prevention is clear from previous studies. However, there is a lack of Arab studies, particularly in the Kingdom of Saudi Arabia, regarding the effectiveness of the matrix treatment program. Therefore, the current study aimed to determine the impact of the program on the development of emotional regulation and the risk of relapse by addressing the following research questions:

A. What are the differences between the average ranks of the experimental and control groups on the relapse risk scales and emotional self-regulation in the telemetry of amphetamine addicts in the mental health hospital?

B. What are the differences between the average performance ranks in the pre-/post-measurement on the relapse risk scales and emotional self-regulation in the experimental group members?

C. What are the differences between the mean performance grades in the dimensional and tracking measurement on the relapse risk scales and emotional self-regulation in the experimental group members?

Methodology

Study Population and Sample

All treatment seekers and reviewers of psychiatric clinics at the Mental Health Hospital in Taif, Saudi Arabia, were included in the study population. Of the 25 male adults from the Mental Health Hospital in Taif, 2020, Irada Department, three were excluded for failing to meet the inclusion criteria, so the final sample was reduced to 22 males diagnosed with amphetamine use disorder (Figure 1), with an average age of 37.77 ± 7.65 years. The sample had previously been addicted and recovered from addiction, and they are now in the follow-up phase after recovery. The reviewers of the Mental Health Hospital in Taif were purposefully chosen from among the members of the study community who used the study tools, represented by the emotional self-regulation scale and the relapse risk scale. Those who obtained the highest scores on the relapse risk scale and the lowest in emotional self-regulation were assigned at random after numbering. The questionnaires were distributed to the experimental and control groups. Then their permission to participate in the study was obtained. The following criteria were used to select the sample: a medical diagnosis of an amphetamine use disorder, no other disorder other than amphetamine use disorder, no psychotic symptoms, no drug use, not to be using any therapeutic drugs, to have the desire to join the programme, and to have the highest mucus scale score. The amphetamine used is Captagon pills, the duration of abuse was 5-10 years, and the patients were aged between 25-45 years.

Males were chosen as the sample for this study because they were the only available participants. Additionally, due to the sensitivity of the community being studied, the focus was limited to males. This decision was made because females tend to decline treatment and may have difficulty attending psychotherapy sessions even after they have recovered.

Figure 1. The distribution of the study sample according to the experimental and control group.

Multiple Line of addiction_period by age by group
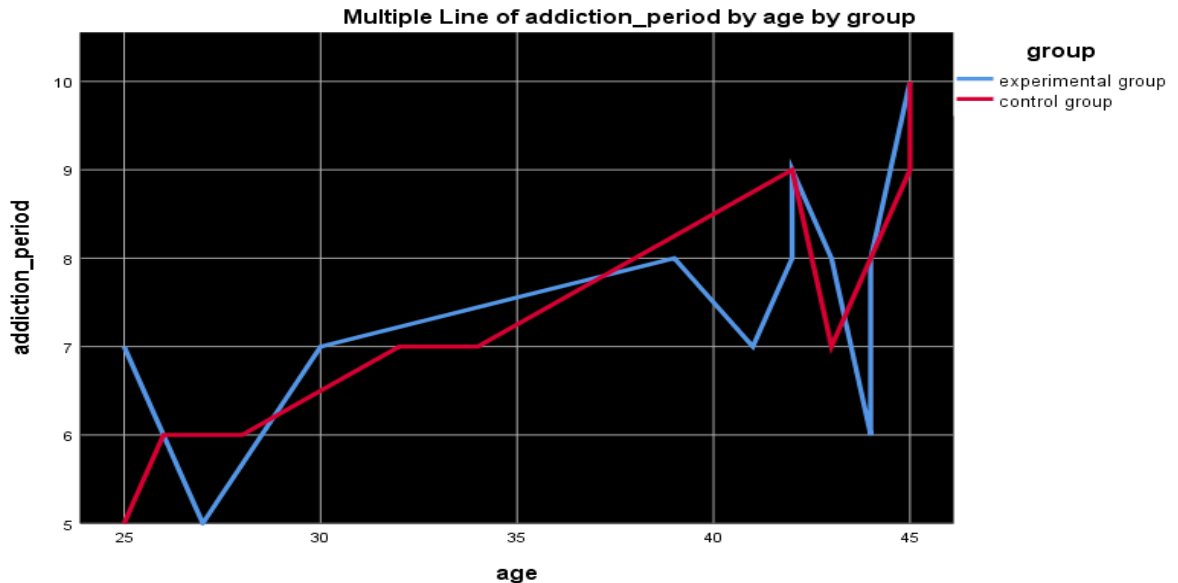
Emotional Self-Regulation Scale

Garnefski & Krange's et al., studied that the emotional self-regulation scale has 36 items and 9 dimensions, with 5 positive dimensions (acceptance, positive re-appraisal, focus on plans, and putting into perspective) and 4 negative dimensions (self-blame, focus on thought-rumination, catastrophizing, and blaming others) (Garnefski & Kraaij, 2007). The scale was adapted to the current research setting. A survey sample of 59 amphetamine addicts and 42 non-addicts was used to validate the psychometric properties. The internal consistency coefficients ranged between 0.630 and 0.879. The validity was calculated to determine whether the scale differentiates between opposite groups, addicts diagnosed with amphetamine abuse disorders and a normal group. The results showed that all T values for all dimensions were statistically significant at the 0.01 level of significance, indicating that the scale can distinguish between opposing groups. The Cronbach's alpha stability coefficient for scale dimensions ranged from 0.739 to 0.877, to the Spearman and Brown half-fractionation method 0.673 to 0.896, all acceptable values indicating the scale's stability and reliability.

Stimulant Relapse Risk Scale

Ogai et al., developed the stimulant relapse risk scale for doping addicts, which includes 30 items and 5 sub-dimensions, namely anxiety, and intention to use drugs, emotional problems, compulsivity for drugs, positive expectation of the effects of the drug and lack of control over the drug, and lack of negative expectancy for the drug (Ogai et al., 2007). The scale was adapted to the current research setting. The psychometric properties were tested on 59 amphetamine addicts, 33 of whom recovered. The internal consistency coefficients of Pearson's correlation coefficient for the scale items and the total score of the tool ranged between 0.44 to 0.85. The concept's validity was also calculated to determine whether the scale distinguishes between opposing groups, addicts diagnosed with amphetamine use disorders, and addicts recovering from amphetamine addiction. The T value was 37.96, which is statistically significant at the 0.01 level of significance, indicating that the scale can distinguish between opposing groups. The Cronbach alpha and Spearman-Mann and Brown methods produced values of 0.923 and 0.902 for the overall scale and dimensions, respectively. The Cronbach alpha method produced values ranging from 0.589 to 0.869. In contrast, the Spearman and Brown half-fractionation method produced values ranging from 0.589 to 0.869, and 0.650 to 0.91, indicating the scale's stability, and reliability.

Matrix Therapy Programme

The treatment programme was created after reviewing the relevant literature and previous research, and it was based on evidence provided by the Drug Abuse Treatment Center (the counsellor's treatment manual, the counsellor's family education manual, and the client's handbook) and the Center for Substance Abuse Treatment. The intensive matrix treatment program consists of various therapeutic components. It includes three individual or group interviews lasting 50 minutes each, eight sessions of early recovery skills group with 50-minute sessions twice a week, thirty-two relapse prevention group sessions lasting 90 minutes each, with sessions twice a week, twelve sessions of family awareness group lasting 90 minutes each, conducted once a week, and four sessions of social support group. The entire intensive treatment period spans sixteen weeks.

Results

A significant difference between pre-and post-measurements of emotional self-regulation in the dimensions of self-blame, acceptance, rumination, refocus, focus on plans, and blaming others. The high effect size ranging from 0.625 to 0.631 for these dimensions indicates the positive effect of the Matrix programme on the addicts' development of emotional self-regulation as shown in Table 1.

Table 1. Wilcoxon test comparing the differences between the pre-and post-measurements of the emotional self-regulation of the experimental group and the effect size.

Scale	Type of ranks	Number of ranks	Sum Ranks	Total Ranks	(Z)	sig	Effect size
Self-blame	Negative ranks	0	0	0	2.94	0.003	0.627
	Positive ranks	11	6	66			
Acceptance	Negative ranks	11	6	66	2.94	0.003	0.627
	Positive ranks	0	0	0			
Rumination	Negative ranks	0	0	0	2.96	0.003	0.631
	Positive ranks	11	6	66			
Refocus	Negative ranks	11	6	66	2.93	0.003	0.625
	Positive ranks	0	0	0			
Focus on plans	Negative ranks	11	6	66	2.95	0.003	0.629
	Positive ranks	0	0	0			
positive re-appraisal	Negative ranks	5	4. 5	21.5	0.119	0.905	
	Positive ranks	4	5. 88	23.50			
	Equivalent ranks	2					
Putting into perspective	Negative ranks	4	5. 50	22	0.060	0.952	
	Positive ranks	5	4. 60	23			
	Equivalent ranks	2					
Catastrophic thinking	Negative ranks	1	3.5	3.5	1.78	0.074	
	Positive ranks	6	4. 08	24.50			
	Equivalent ranks	4					
Blaming others	Negative ranks	11	6	66	2.95	0.003	0.629
	Positive ranks	0	0	0			

Table 2 also shows significant differences between the pre-and post-measurements of the total score and dimensions of the relapse risk scale among amphetamine addicts, indicating a lower risk of relapse among the experimental group after the treatment programme. The large effect size confirms that the programme effectively reduces the risk of relapse among addicts.

Table 2. Wilcoxon test comparing the differences between the pre-and post-measurements of relapse risk of the experimental group and the effect size (r = z / √N).

Scale	Type of ranks	Number of ranks	Sum Ranks	Total Ranks	(Z)	sig	Effect size
Anxiety and the desire to abuse	Negative ranks	0	0	0	2.938	0.003	0.626
	Positive ranks	11	6	66			
Emotional problems	Negative ranks	0	0	0	2.941	0.003	0.627
	Positive ranks	11	6	66			
Compulsive and impulsive behaviours	Negative ranks	0	0	0	2.847	0.004	0.607
	Positive ranks	11	6	66			
Positive outlook for the drug effects	Negative ranks	0	0	0	2.941	0.003	0.627
	Positive ranks	11	6	66			
Lack of negative expectations for the drug effects	Negative ranks	0	0	0	2.943	0.003	0.627
	Positive ranks	11	6	66			
Total	Negative ranks	0	0	0	2.936	0.003	0.626
	Positive ranks	11	6	66			

Table 3 shows significant between-group differences in the dimensions of emotional self-regulation (self-blame, acceptance, rumination, refocus, focus on plans, and blame others) in favour of the experimental group. Also, the large effect size of these dimensions (ranging from 0.697 to 0.844) indicates the effectiveness of the therapeutic programme on the development of emotional self-regulation of the experimental group compared to the control group.

Table 3. Mann–Whitney tests comparing the differences between the experimental and control group in emotional self-regulation and the effect size.

Scale	Group	N	Sum Ranks	Total Ranks	(Z)	sig	Effect size
Self-blame	Experimental group	20	6. 05	66.50	3. 961	0.000	0.844
	Control group	20	16. 95	186.50			
Acceptance	Experimental group	20	16.91	186	3. 93	0.000	0.838
	Control group	20	6.09	67			
Rumination	Experimental group	20	6	66	4. 008	0.000	0.854
	Control group	20	17	187			
Refocus	Experimental group	20	16	176	3. 266	0.001	0.697
	Control group	20	7	77			
Focus on plans	Experimental group	20	16.95	186.50	3. 96	0.000	0.844
	Control group	20	6.05	66.50			
Revaluation	Experimental group	20	12. 45	137	0. 746	0.456	
	Control group	20	10.55	116			
Setting the record straight	Experimental group	20	12.86	141.50	1. 065	0. 287	
	Control group	20	10.14	111.50			
Catastrophic thinking	Experimental group	20	9.23	101.50	1. 7	0.089	
	Control group	20	13. 77	151.50			
Blame others	Experimental group	20	6	66	4. 009	0.000	0.854
	Control group	20	17	187			

There are statistically significant differences between the experimental and control groups in the

dimensional measurement of the total score and the relapse risk scale among amphetamine addicts favouring the control group. There was also a larger treatment effect confirming its significant impact on reducing the relapse risk in the experimental group compared to the control as shown in Table 4.

Table 4. Mann–Whitney test for comparing the differences between the experimental and control group in the dimensional measurement of relapse risk and the effect size.

Scale	Group	N	Sum Ranks	Total Ranks	(Z)	sig	Effect size
Anxiety and desire to abuse	Experimental group	11	6	66	3. 991	0.000	0.851
	Control group	11	17	187			
Emotional problems	Experimental group	11	6. 36	70	3. 724	0.000	0.794
	Control group	11	16. 64	183			
Compulsive and impulsive behaviours	Experimental group	11	6. 23	68.50	3. 819	0.000	0.814
	Control group	11	16. 77	184.50			
Positive prognosis for the drug effects	Experimental group	11	6. 59	72.50	3. 558	0.000	0.759
	Control group	11	16. 41	180.50			
Lack of negative expectations of the drug effects	Experimental group	11	6	66	3. 987	0.000	0.850
	Control group	11	17	187			
Total	Experimental group	11	6	66	3. 977	0.000	0.848
	Control group	11	17	187			

There were no differences between the dimensional and tracer measurements of the experimental group on the dimensions of the emotional self-regulation scale, and relapse risk as shown in Table 5, and 6.

Table 5. Wilcoxon test to compare the differences between the dimensional and tracer measurements of emotional self-regulation of the experimental group.

Scale	Type of ranks	Number of ranks	Sum Ranks	Total Ranks	(Z)	sig
Self-blame	Negative ranks	5	7.40	37	0.972	0.331
	Positive ranks	5	3.60	18		
	Equivalent ranks	1				
Acceptance	Negative ranks	5	6.60	33	0.575	0.565
	Positive ranks	5	4.40	22		
	Equivalent ranks	1				
Rumination	Negative ranks	7	5.07	35.50	0.829	0.407
	Positive ranks	3	6.50	19.50		
	Equivalent ranks	1				
Refocus	Negative ranks	4	6.75	27	0.535	0.592
	Positive ranks	7	5.57	39		
Focus on plans	Negative ranks	2	4.50	9	1.268	0.205
	Positive ranks	6	4.50	27		
	Equivalent ranks	3				
Positive re-appraisal	Negative ranks	3	6.83	20.50	1.137	0.256
	Positive ranks	8	5.69	45.50		
Putting into perspective	Negative ranks	2	5.75	11.50	1.316	0.188
	Positive ranks	7	4. 79	33.50		
	Equivalent ranks	2				
Catastrophic thinking	Negative ranks	7	4.43	31	1.018	0.309
	Positive ranks	2	7	14		
	Equivalent ranks	2				

Blaming others	Negative ranks	3	5.17	15.50	1.241	0.215
	Positive ranks	7	5.64	39.50		
	Equivalent ranks	1				

Table 6. Wilcoxon test comparing differences between telemetry and tracking of the relapse risk among the experimental group.

Scale	Type of ranks	Number of ranks	Sum Ranks	Total Ranks	(Z)	sig
Anxiety and desire to abuse	Negative ranks	5	5.60	28	0052	0.959
	Positive ranks	5	5.40	27		
	Equivalent ranks	1				
Emotional problems	Negative ranks	4	5.63	22.50	0.939	0.348
	Positive ranks	7	6.21	43.50		
Compulsive and impulsive behaviours	Negative ranks	7	4.43	38	0.447	0.655
	Positive ranks	4	7	28		
Positive prognosis for the effects of the drug	Negative ranks	8	6.31	50.50	1.560	0.119
	Positive ranks	3	5.17	15.50		
Lack of negative expectations of the drug effects	Negative ranks	5	5.90	29.50	0.314	0.754
	Positive ranks	6	6.08	36.50		
Total	Negative ranks	6	6.67	40	0.629	0.530
	Positive ranks	5	5.20	26		

Discussion

This study showed that the matrix therapy programme is effective in developing emotional self-regulation through the development of positive cognitive strategies (acceptance, positive refocus, focus on plans) and the reduction of negative strategies (self-blame, rumination, blaming others). This finding is consistent with the studies of (Amiri et al., 2019; Zanjani et al., 2020), which indicated the effectiveness of matrix therapy in the development of emotional self-regulation, while the matrix therapy programme did not affect the dimensions of re-evaluation, setting the record straight, and catastrophic thinking. This also agrees with Zardkhaneh et al., concluded that the Matrix therapy programme did not affect emotional self-regulation (Zardkhaneh, 2014). This can be explained by the reality of the programme's components and sessions, which use many tools and skills to improve cognitive strategies that regulate emotions and mood, for example, models and publications that include cognitive processing and the discovery of methods to accept and deal with addiction. Also, some of the sessions focus on developing plans to deal with external stimuli or internal states (emotions or mood) that stimulate cravings (eagerness or longing) to use, as in the second, third, and sixth recovery skills sessions, as well as the twenty-eighth relapse prevention session.

In these sessions, the participants also learn how to deal with emotions like anger and negative moods like boredom, stress, and tension, which can lead to depression. The sixth session of the early recovery skills sessions, as well as the second, fifth, eighteenth, twenty-second, twenty-third, and twenty-ninth sessions of the relapse prevention group, include some tools and skills such as emotional catharsis, relaxation, behavioural activation, and schedules of low mood cases. Some sessions also aid in the development of a positive refocus strategy. The training to stop thinking is repeated in several sessions, such as the first group session of the early recovery skills and the twenty-eighth group session of relapse prevention. Stopping thinking or distraction aids in developing a positive refocus strategy. According to Sheppes et al., stopping thinking training does not specify the need to refocus on positive aspects but rather stops at separating attention from processing information related to emotions (Sheppes, 2014). The researcher believes that the programme's contribution to identifying and understanding emotions,

as in the third session of early recovery skills, increases emotional awareness, which may be reflected in developing a positive refocus strategy and stopping thinking training. Also, stopping thinking helps reduce rumination and self-blame, one of the cognitive strategies for emotional regulation. The sixth session of relapse prevention sessions helps to plan individuals' time and occupy their time, which reduces the survival of individuals alone and thus reduces the likelihood of starting the rumination process, one of the objectives of the eighteenth session of relapse prevention sessions.

One of the key components of early recovery skills sessions is improving one's recovery progress, which contributes to increased self-esteem and decreased self-blame. Furthermore, the twenty-ninth session deals with emotions and depression symptoms. Social support groups and family awareness aim to achieve social and family support. The twelve and twenty-sixth sessions of the relapse prevention group are aimed at providing the individual the skills to deal with others' doubts about their recovery and abstinence from narcotic substances, with a plan to restore relationships, rebuild trust, and gain the support of those around them, which are all components of the matrix therapy programme. Therefore, the matrix therapy programme promotes positive strategies (acceptance, positive refocus, and focus on plans) while decreasing negative strategies (self-blame, rumination, blaming others). The results also confirm the programme's role in reducing the risk of relapse. They are consistent with the results of Tran et al.,, who stated in their systematic review of therapeutic interventions for amphetamine addicts that integrated therapeutic models such as matrix therapy and comprehensive (psychosocial) programmes are more effective in treating amphetamines and preventing relapse (Tran et al., 2021). This finding is consistent with the literatures which all indicated the effectiveness of the matrix therapy programme in preventing relapse (Eghbali et al., 2013; Ghasemnezhad et al., 2016; Rawson et al., 2004).

Furthermore, the individuals retained their treatment gains one month after the end of the treatment programme, which is consistent with the study of Eghbali et al.,, which reported the programme's contribution to maintaining its gains in preventing relapse and reducing the severity of emotional problems (Eghbali et al., 2013). It is also consistent with the study of Ghasemnezhad et al., in maintaining the programme's effectiveness in prevention and relapse prevention during the follow-up period (Ghasemnezhad et al., 2016).

Limitations

This study has some limitations, includes, the study sample of amphetamine addicts in Taif, Saudi Arabia, who visit psychiatric clinics at the mental health hospital, and the study duration of sixteen weeks in 2023.

Recommendations

The matrix therapy programme is recommended for use by institutions concerned with mental health and addiction treatment. However, further studies should investigate the effectiveness of matrix therapy with the same study variables on other study samples and groups of substance use disorders. Also, studies should be conducted to investigate the effectiveness of matrix therapy on other variables, such as craving anaesthetics, self-efficacy, quality of life, and self-esteem.

Acknowledgements

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