Relapse and Risk-taking among Iranian Methamphetamine Abusers Undergoing Matrix Treatment Model

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Original Article

Abstract

Background: This study investigated the correlation between risk-taking and relapse among methamphetamine (MA) abusers undergoing the Matrix Model of treatment.

Methods: This cross-sectional study was conducted on male patients who were stimulant drug abusers undergoing the matrix treatment in the National Center for Addiction Research. A sampling was done using the availability method including 92 male patients. Demographic questionnaires and drug abuse related questionnaire were completed for each patient. Then, Bart's balloon risk-taking test was administered to the patients.

Findings: Participants had a mean age ± standard deviation (SD) of 27.59 ± 6.60 years with an age range of 17-29 years. Unemployment, unmarried status, criminal offense, and also addiction family history increased the probability of relapse. In addition, a greater adjusted score of the risk-taking test increased the odds of relapse by more than 97%. The simultaneous abuse of opium and stimulants compared to the abuse of stimulants only, revealed no statistically significant differences for relapse. Patients with higher risk-taking behavior had a more probability of relapse.

Conclusion: This finding indirectly implies the usefulness of Bart's risk-taking test in assessing risk-taking behavior in stimulant drug abusers.

Keywords: Relapse; Risk-taking; Methamphetamine; Substances abuse

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Introduction

Ecstasy, glass, methamphetamine (MA), and other psychoactive substances are presently the main substances abused by 30-40 million addicts throughout the world.[1] Iran is one of the countries in which the use of psychoactive substances is constantly increasing and in the middle Asian region, Iran has a specific situation for the abuse of different types of amphetamine stimulants. Although there was no report of the abuse of these substances in Iran before 2004, some recent studies demonstrated that the prevalence of the abuse of MA is increasing among the teenagers and adolescents. It has been reported that 18.5% of adolescents aged 18-25 years experienced the abuse of stimulants.[2]

Further, the findings of a study demonstrated that 18.0% of a population of university students experienced the abuse of MA (glass), 8.5% experienced the abuse of ecstasy, and 4.8% experienced the abuse of lysergic acid diethylamide during their lives.[3-5] The study of Ataee et al.[6] reported 12.7% abuse of MA in a sample of adolescents. Other studies have reported an abuse prevalence with a range of 2-18.[7,8] The rate of abuse of amphetamine stimulants has increased by 400% in Iran during 2010-2011. Iran ranks first in this regard followed by 166% growth in Thailand, 153% in US, and 140% in China.[9] The injectional abuse of stimulants is increasing in Iran warning the prevalence of acquired immune deficiency syndrome (AIDS).[10,11]

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Mortality rate due to abuse of psychoactive substances is increasing in Iran.[12,13] Furthermore, MA was the most common cause of sudden heart attacks.[12] The results of another study showed that, of four cases of intoxication with MA, three cases resulted in death.[13] Today, change in youths' attitudes from traditional substance abuse (opium and cannabis) toward industrial substances such as ecstasy, crack, and crystal needs special attention.[14] While the age of abuse of traditional substances begins after the age of 30 years, the age of abuse of industrial substances has lowered to the age of < 20 years.[3,4]

A some of the common causes of the abuse of stimulants in Iran are the following: access to MA, increased the cost of opiums, curiosity for the use of different substances, people's unawareness of the hazards of stimulants abuse, and the effects of MAs on increasing sexual pleasure.[8,15] Furthermore, place of residence and relationships with addicted peers and friends were powerful predictive factors for the abuse of stimulants and hallucinogens. Being male, low education level, and high-income level were also reported as predictive factors for the abuse of stimulants and hallucinogens.[5,14]

MA-dependent subjects may not have the capability to make proper decisions to select the greatest action from a group of choices with unclear consequences. Such an ability is significant for daily performance in healthy person. Dysfunctional decision making may represent substance-dependent patients[16] and may play a role to relapse. These individuals usually tend to select actions related to temporary and smaller gains rather than selecting actions with long-term greater gains though they may face long-term losses.[17] Such patients have a higher probability of selecting risky reactions[18,19] and a lower likelihood of considering the options with long-term gains.[20] It is also likely that stimulant-dependent patients do not properly consider the likelihood and extent of the reward of the accessible choices.[21] Some investigations have revealed that risk-taking was one of the most important factors contributing to opium and stimulant abuse.[4,22] Risk-taking emphasizes decision making on the basis of immediate success producing a desirable feeling in the individual yet exposing them to seriously unsafe hazards.[23] One of the specific features of dependence behavior is that despite an awareness of the psychological or physical disadvantages of that behavior, abusers tend to do it, for example, the decision to use recreational drugs frequently regardless of the likely negative outcomes.[24,25]

MA abuse places the patient in a situation in which they have no tendency for the treatment and this is perhaps the worst effect of these substances on the brain.[26-28] Presently, treatment of MA is the most difficult in the domain of drug abuse treatment.[27] So far, no effective medicine has been developed for the treatment of these patients.[27-29] It appears that the clients undergoing treatment plans have no stable abstinence period regardless of the cognitive-behavioral and psychological problems related to withdrawal.[26-29] The symptoms of stimulant withdrawal such as arrhythmia,[27] anxiety, and palpitation could be removed by some medicines.[27,29-31] Regarding the lack of efficacy of the current treatments for treating stimulant-dependence, several behavior treatment modalities including the Matrix Model have been developed. The application of Matrix Model in treating stimulant addiction has increased during the 1980s. The goal of this method is to help discontinue stimulant abuse, encourage to treat from the beginning to the end, understand the risks of relapse, and prevent relapse. The Matrix Model usually includes therapy group, therapy family, acquiring group skills training, prevention of relapse, and analysis of relapse. The efficacy of Matrix Model in reducing stimulant abuse has been proved.[32,33]

Despite the application of medicinal and behavior therapy programs, relapse is the main challenge of the treatment among MA abusers. No accurate statistics are available regarding relapse to stimulants abuse. Relapse to drug abuse is a complex process occurring in more than 50% of stimulant-dependents who seek treatment.[23] Dysfunctional decision-makings may characterize stimulant-dependents and may be effective in relapse.[26,34] The several factors promote risk of relapse to addiction including environmental setting, the presence of signs of drug abuse, personal coping repertoire, and an increased craving for abuse after experiencing drugs.[35] It is also assumed that the relapse processes are affected by cognitive-behavioral factors,[36] person-situation interactions,[37] cognitive appraisal,[38] and

expectation of consequences.[39,40] Ultimately, these individuals produce perseverative response patterns when they make a prediction and choose actions that are more stimulant-bound and less pertained to changes in the frequency of prediction errors.[41,42] These behavioral disorders may reflect modification in the cerebral circuit which are very important in decision-making. Functional neuroimaging examinations have demonstrated dysfunctions of the inferior prefrontal and dorsolateral prefrontal cortex in stimulant-dependent patients.[43,44]

There is still need for additional effective methods for preventing stimulant abuse relapse. Strategies for reducing stimulant abuse relapse such as the application of innovative methods should be considered as a priority. This study investigated the correlation between risk-taking performances of patients undergoing Matrix Treatment Model and stimulant abuse relapse. Assessing the risk-taking performances of individuals and investigating its correlation with stimulant relapse may lead to understanding the factors effective in preventing relapse.

Methods

In this cross-sectional study, the population under study consisted of 92 patients undergoing Matrix treatment. They presented to Stimulants Clinic at the National Center for Addicition Research. Availability sampling method was used to select participants. The inclusion criteria included relapse history in < 6 months of the beginning of treatment (control group) and 6 months without relapse (experimental group). This research was approved by the appropriate university ethics board, and all participants provided informed consent prior to participation. Informed written consent was obtained from all patients. To study stimulant addiction, all patients with and without relapse were tested for amphetamine. Demographic information and data related to substance abuse were collected for each patient via a questionnaire. Bart's balloon risk-taking test was used to estimate risk-taking.[24] The validity and of this instrument was assessed on a group of 84 students.[45]

This instrument is used to measure the patients' potential for risky behaviors and can reveal the degree of risk-taking by individuals. Before administering the test, the following text was read to them: "During this test, 30 balloons will be displayed for you separately. For each balloon, you can press a button to increase its size. Each time you pump the balloon, you will be credited 500 Rials (the Iranian Currency) in a temporary account. The amount you have saved in this temporary account will not be displayed for you. Whenever you wish, you can stop pumping the balloon and press another button and collect your money. This action displays the next balloon and causes the transmission of your deposit in the previous balloon as "total collected money." The amount of money you have earned from the previous balloon is displayed in a box called "the last balloon." It depends on you how much to pump the balloon, yet you should know that the balloon will blow out at some point. The threshold of the explosion is different for various balloons and can include the time of the first pumping until the balloon occupies all the surface of the monitor (screen). If the balloon blows out before you press the money-collecting button, you will be transmitted to the next balloon and all the money you have saved in the temporary account of the related balloon will be lost. The explosion of balloons will have no effect on the amount of money saved in your permanent account." The most important index of individuals' risk-taking is based on adjusted value or AV which is equal to the mean of times of pumpings of balloons that have not blown out. In this study, risk-taking was defined on the basis of adjusted mean score. Patients with an adjusted score greater than the mean were classified as risk-takers and those with an adjusted score less than the mean as non-risk-takers.[46]

Chi-square test was applied to examine differences regarding age groups, education level, employment, marital status, history of criminal offense across the relapse, and non-relapse groups. The results of balloon risk-taking test were compared for the relapse and non-relapse groups using independent t-test. To assess comparisons among the groups, multinomial logistic regression analysis was performed, and the relapse group was considered as the reference group. Socio-demographic and drug abuse factors were entered independently in each logistic regression. Since employment status, marital status, age, and history of criminal offense were significantly correlated with relapse, these variables were included as covariates in the regression analysis.

Results

The participants in this study had a mean age ± standard deviation (SD) of 27.59 ± 6.60 years with a range of 17-29 years. Of these, 33.7% were single, 32.6% were married, and 33.7% were divorced; besides, 47.8% had no work, 23.9% worked part-time, and 28.3% worked full-time. Furthermore, 14.1% had an education level below diploma, 43.5% held a high school diploma, and 42.4% had attended university. In addition, 62.0% had a family history of addiction and 52.5% had imprisonment history. Among all the patients, 77.2% had a past history of treatment. Furthermore, a total of 55 patients consumed alcohol in addition to drug abuse. Of these, 68.5% abused multiple drugs simultaneously, 33.7% abused drugs through inhalation, 11.0% through ingestion, 13.0% via injection, 25.0% via inhalation/injection and 17.0% via inhalation/ingestion (abuse methods integrated into two categories for data analysis due to rational statistics).

There were some differences between groups regarding age, employment status, history of criminal offense, and a family history of addiction ($P < 0.002$, $P < 0.001$) (Table 1). The differences between groups according to abuse method, a history of treatment and adjusted risk-taking score are displayed in table 2 ($P < 0.001$). The adjusted risk-taking score was higher in the relapse group. Tables 3 and 4 present the distribution of socio-demographic and drug abuse variables, as well as pairwise comparison results among the groups. The tables 3 and 4 display estimated odds ratios (ORs) and 95% confidence intervals (CIs) for each 2-level comparison. As shown in table 3, the participants were more likely to be in the relapse group than in the non-relapse group if they were in the lower than 20 years age group rather than in the 20-29 years age group (84.0 vs. 0.2%; CI: 03-0.79). The 20-29 years age group, compared with > 30-year-old, were about 82.0% more likely to be in the relapse group. Patients with no employment were more likely to be in the relapse group than those with part-time employment (79.0 vs. 0.2%; CI: 0.07-0.60).

Divorced/widow patients were 4 times more likely to be in the relapse group compared to the married patients (OR: 4.16; 95% CI: 1.38-12.50).

Table 1. Demographics by relapses and non-relapses

Characteristics	Relapse	Non-relapse	P
	n (%)	n (%)	
Age (year)			
< 20	3 (6.5)	6 (13.0)	0.001
20-29	18 (39.1)	32 (69.6)	
> 30	25 (54.3)	8 (17.4)	
Education level			NS
Under high school	9 (19.6)	4 (8.7)	
High school	17 (37.0)	23 (50.0)	
University	20 (43.5)	19 (41.3)	
Employ status			
No employee	16 (34.8)	28 (60.9)	0.002
Part time	11 (50.0)	11 (50.0)	
Full time	19 (41.3)	7 (15.2)	
Marital status			0.001
Single	17 (37.0)	14 (30.4)	
Divorced/widow	22 (47.8)	8 (17.4)	
Married	7 (15.2)	24 (52.2)	0.001
Criminal history			
Yes	30 (65.2)	18 (39.1)	
No	16 (34.8)	28 (60.9)	
Family history addiction			0.001
Yes	36 (78.3)	21 (45.7)	
No	10 (21.7)	25 (54.3)	

Chi-square tests were used to compare the groups in terms of selected study variables and determine whether there were associations between relapses and non-relapses and the demographic variables; NS: Not significant

Table 2. Participant demographics by relapses and non-relapses

Characteristics	Relapse	Non-relapse	P
	n (%)	n (%)	
Poly drug			NS
Poly drug stimulant and opium	32 (69.6)	31 (67.4)	
Stimulant substance	14 (30.4)	15 (32.6)	
Using way			0.001
Injection + Ingestion	19 (41.3)	38 (82.6)	
Inhalation + Ingestion	27 (58.7)	8 (17.4)	
History treatment			0.001
Yes	36 (78.3)	21 (45.7)	
No	10 (21.7)	25 (54.3)	
Using alcohol			NS
Yes	17 (37.0)	20 (43.5)	
No	29 (63.0)	26 (56.5)	
Addiction long (year)			NS
< 5	14 (30.4)	21 (45.7)	
5-9	12 (26.1)	8 (17.4)	
10-14	15 (32.6)	9 (19.6)	
15-19	2 (4.3)	4 (8.7)	0.001
> 20	3 (6.5)	4 (8.7)	
AP	31.52 (2.61)	35.93 (1.54)	

Chi-square tests were used to compare the groups in terms of selected study variables and determine whether there were associations between relapses and no relapses and the demographic variables. T-test was used to compare (AP) values. AP: Mean number of pumps did not pop, Up: Mean number of popped balloons
NS: Not significant; AP: Adjusted pumps

Table 3. Odds of being in relapses and non-relapses by socio-demographic factors

Characteristics	Contrasts	OR	CI	P
Age				
< 20	Relapse versus non-relapse	0.16	0.03-0.79	0.002
20-29	Relapse versus non-relapse	0.18	0.06-0.48	0.001
> 30	Relapse versus non-relapse			
Education level				
Under high school	Relapse versus non-relapse	2.13	0.56-8.12	NS
High school	Relapse versus non-relapse	0.70	0.28-1.70	NS
University	Relapse versus non-relapse			
Employment status				
No employee	Relapse versus non-relapse	0.21	0.07-0.60	0.004
Part time	Relapse versus non-relapse	0.36	0.11-1.22	NS
Full time	Relapse versus non-relapse			
Marital status				
Single	Relapse versus non-relapse	9.42	2.93-30.31	0.011
Divorced/Widow	Relapse versus non-relapse	4.16	1.38-12.50	0.001
Married	Relapse versus non-relapse			
Criminal history				
Yes	Relapse versus non-relapse	0.34	0.14-0.80	0.001
No				
Family history addiction				
Yes	Relapse versus non-relapse	4.28	1.72-10.64	0.002
No				

Estimated or and 95% CI are presented for each 2-level comparison (P < 0.002, P < 0.001).
OR: Odds ratio; CI: Confidence interval; NS: Not significant

Table 4. Odds of being in relapses and non-relapses drug using factors and risk taking value

Drug using factors	Contrasts	OR	CI	P
Poly drug				
Poly drug stimulant and opium	Relapse vs. non-relapse	0.83	0.36-1.91	NS
Stimulating substance	Relapse vs. non-relapse			
Using way				
Injection + Ingestion	Relapse vs. non-relapse	6.75	2.57-17.66	0.001
Inhalation + Ingestion	Relapse vs. non-relapse			
History treatment				
Yes	Relapse vs. non-relapse	1.79	0.29-0.40	0.004
No	Relapse vs. non-relapse			
Using alcohol				
Yes	Relapse vs. non-relapse	1.312	0.56-3.02	NS
No	Relapse vs. non-relapse			
Addiction long (year)				
< 5	Relapse vs. non-relapse	1.12	0.21-5.81	NS
5-9	Relapse vs. non-relapse	0.50	0.08-2.86	NS
10-14	Relapse vs. non-relapse	0.45	0.08-2.48	NS
15-19	Relapse vs. non-relapse	1.50	0.15-14.42	NS
> 20	Relapse vs. non-relapse			
Risk taking value				
AP	Relapse vs. non-relapse	0.03	0.011-0.10	0.001

Estimated OR and 95% CI are presented for each 2-level comparison (P < 0.004, P < 0.001).

OR: Odds ratio; CI: Confidence interval; NS: Not significant; AP: Adjusted pumps

A history of criminal offense increased the probability of relapse by 66.0% (66.0 vs. 34.0%; CI: 0.14-0.80). Furthermore, a family history of addiction increased 4 times the odds of relapse compared to a negative history (OR: 4.28; CI: 1.72-10.64). No significant differences were found among the groups regarding education level.

The injection/ingestion methods of drug abuse increased about 7 times the probability of relapse compared to the inhalation/ingestion methods (OR: 6.75; CI: 2.57-17.66). A past history of treatment increased about 2 times the probability of relapse. Moreover, an adjusted risk-taking score greater than the mean increased the probability of relapse by 97.0% compared to an adjusted risk-taking score smaller than the mean (97.0 vs. 3.0%; CI: 0.011-0.10). The simultaneous abuse of opium and stimulants compared to the single abuse of stimulants demonstrated no significant difference for relapse. No differences were also found between the relapse and non-relapse groups for poly drugs, alcohol consumption, and addiction length.

Discussion

The nature of dependence behaviors is relapse. It is always observed that individuals make many attempts to quit their smoking behavior, alcohol consumption, and drug abuse, but they are often not successful and face relapse. An identification of the factors affecting return to the unhealthy wrong behavioral patterns would greatly help the designing of preventive interventions, and maintenance of healthy behavior. The present study investigated the correlation between risk-taking and relapse of stimulant abuse in the treatment of clients under matrix treatment. The predicting variables of this relapse were age, employment status, marital status, a history of criminal offense, and a history of familial addiction.

Our results showed that younger patients were more likely to be in relapse group. The findings of the study by McKetin et al.[19] on consequences of a consultation treatment program in MA abusers suggested that there was a greater decrease in MA abuse by the younger group. McKetin's et al.[19] sample included abusers who had previously received no other treatment plan compared to the older group with simultaneous abuse of MA and heroin. The interaction of age with other demographic characteristics especially sex and

socio-economic status and their role in stimulant abuse relapse should be investigated more carefully.

Regarding the predictive role of employment status in the present study, the findings of another study revealed that individuals without any occupation relapsed more frequently.[47,48] The findings of study of Marlatt and Donovan also demonstrated that there was a correlation between patients' employment and a longer period of abstinence from heroin.[36] Furthermore, the findings of the study by Platt[49] indicated the effective role of occupation in the treatment. Kerrigan et al.[50] observed a significant positive correlation between employment status and staying in the treatment plan.

In research for assessing addiction treatment, employment has been observed as a desirable element of treatment,[47,48] and subsequently may reduce drug abuse.[48] Other socio-cultural effective characteristics related to occupation and relapse should be investigated more carefully and comprehensively.

It has been shown that marriage provides social support in some way for abusers and functions as a protective factor against relapse during treatment.[51] The results of this study showed that single patients were more frequently exposed to the danger of relapse. The findings of study of Walitzer and Dearing[52] on the sex differences regarding relapse to alcohol consumption and drug abuse showed that marriage and its related stress were among the risk factors for relapse to alcohol consumption in females. However, marriage reduced the risk of relapse among the males. The results of a report on receiving treatment for drug abuse and marital status indicated a lower probability of the 1st time treatment in never-married individuals.[41] Hence, the correlation of marriage and relapse should be studied separately for the two sexes. Sex differences related to the role of marriage in relapse may pertain to the type of drug abused, partners of the drug abused, and other factors related to abuse. Moreover, the sex differences related to the role of marriage in relapse may lead to needs analysis based on sex to design useful interventions to prevent relapse.[42,43] The review study by Magura showed that married individuals experienced positive pleasant consequences.[44]

Although there was no correlation between relapse and education level in this study, in study of O'Brien and McLellan the rate of success of improving addiction disturbances was greater in patients with higher education levels.[34] Furthermore, the study by Termorshuizen et al.[26] on the correlation between predictors of heroin abuse relapse revealed that there was a correlation between low education level and heroin abuse relapse.

Furthermore, this study showed that a history of imprisonment is correlated with relapse. Similarly, study of Matto et al.[53] suggested that contribution in drug trafficking predisposes the relapse and reduces abstinence duration. This factor approves that social context may influence drug abuse methods and treatment consequences. Another explanation is that highly risk-taking patients are more likely to get engaged in illegal behavior like recreational drugs abuse regularly despite the probable undesirable consequences.

Another finding of this study was the significant correlation between relapse and familial history of addiction. The study by Brecht and Herbeck[54] indicated that addiction of one of the parents or members of family to alcohol or drugs predicted less maintenance time and higher incidence of relapse ($OR = 1.25$, $P < 0.002$). Moreover, this factor has been introduced as the predictor of onset of drug abuse in another study. It should further be pointed out that addiction of parents or family members reveals a wide range of risk factors at the family setting regarding drug abuse.[53]

Patients with past unsuccessful treatment had shorter abstinence period. One justification for this finding is that the history of unsuccessful treatment has reduced patients' self-confidence in drug abstinence. Although a few of previous studies reached similar conclusion,[21] some other studies reveal a negative effect of withdrawal on relapse.[22]

Patients who abused multiple drugs simultaneously with stimulants were at higher risks of relapse. The results of a study in Iran indicated a shorter period of maintenance in patients under treatment with methadone who abused several opioids.[18] This finding is confirmed by Shah et al.[55] who identified the factors predicting the variables related to relapse in injection abusers. Hiltunen and Eklund[56] also confirmed it in patients who were under maintenance methadone treatment.

The present study found no correlation

between alcohol consumption and relapse. Nonetheless, the study by Fischer et al.[57] and Joe et al.[58] indicated a negative correlation between maintenance in treatment and alcohol consumption. Another study showed that patients under maintenance treatment, who consumed alcohol during the treatment period, were less frequently exposed to the risk of relapse to drug abuse. It seems that alcohol consumption hindered drug abuse while in our study the patients abused stimulants. More research is required on the connection between alcohol consumption and drug or stimulant abuse and its correlation with relapse.

This study investigated the association between risk-taking and relapse to stimulant abuse in patients under matrix treatment model. As it was assumed, the risk-taking score of patients with relapse to stimulant abuse was greater that the non-relapsers' score. Previous studies in this field reported controversial and contradictory results. Similar to our findings, some studies concluded that alcohol consumption and drug abuse correlated more greatly with risk-taking.[46,59,60] However, some other studies found no difference in the calculated risk-taking score based on the number of exploded balloons in the control group and at-risk drug abusers and recent withdrawers of marijuana. For instance, in study of Gonzalez et al.[61] risk-taking was not correlated in cannabis abusers. Yet, Hanson et al.[46] findings were consistent with our results regarding the average number of unexploded balloons. However, previous studies did not test group differences in the number of blown out balloons.[61,62]

Study of Honson et al. demonstrated that risk-taking score based on the number of blown out balloons could predict the number of times of drug abuse during the last 18 months. However, if the variable of age was included, the risk-taking score could not predict alcohol consumption and marijuana abuse. In other words, age was a stronger predictor of drug abuse during the past 18 months compared to risk-taking score.[46] Ekhtiari and Behzadi assessed the behavior of opium addicts before and after maintenance treatment with methadone using balloon risk-taking score. The findings suggested that the risk-taking behavior of addicts was less than the control group after 3 months of treatment with methadone.[63] Yet, some studies indicated that methadone abuse reduced risk-taking behaviors such as drug injection with a shared syringe, or risky sexual behaviors[64,65] which is probably due to changes in the functioning of the prefrontal cortex of the brain due to methadone abuse.[29] Findings of Hopko et al.[66] also indicated the correlation between Bart's calculated risk-taking score with younger ages and the use of amphetamine.

Limitations

One limitation of the study was interference of different substances. We compared abusers of glass, opium, stimulants, and also injection/ingestion abusers in relation to the phenomenon of relapse. Hence, it was impossible to reach clear conclusions regarding the role of stimulants abuse compared to other substances as a predictor of relapse in poly-drug abusers. Furthermore, regarding the intercorrelation between substance abuse and risk-taking potential, it was impossible to determine whether risk-taking behavior is the direct consequence of drug abuse and relapse or, on the contrary, it may predict drug abuse and relapse. Hence, more studies should be conducted in this regard. It was likely that the Matrix Treatment Model has affected the risk-taking factor. Considering that our population under study was under Matrix Treatment Model, it was possible that risk-taking differences between relapsers and non-relapsers might be influenced by this model. Furthermore, regarding the fact that our patients were all male, there was no access to sex differences in our study needing future research. Further, this study was not able to exactly test the correlation between abstinence periods and administration of risk-taking test. We compared patients with an abstinence period of more than 6 months without relapse to relapsers. Hence, it is possible that abstaining patients might have had different abstinence periods even longer than 12 months. This point results in the probability of emergence of various risk-taking patterns in terms of duration of abstinence periods. Regarding the present sample size, there was no possibility of comparison in terms of varying durations of abstinence periods. Future studies should test the risk-taking potential in terms of the length of abstinence period.

Conclusion

The relapse behavior was influenced by different

individual and cognitive variables. Patients with lower ages, lack of employment, single status, history of criminal offense, history of family addiction, and experience of unsuccessful withdrawal were more likely at the risk of relapse. Consequently, it could be noted that highly risk-taking patients are at higher risk to relapse. This finding indirectly implies the usefulness of Bart's risk-taking test for assessing risk-taking potential in stimulant abusers. There is a need to design effective treatment interventions to reduce relapse and improve tailored treatment.

Conflict of Interests

The Authors have no conflict of interest.

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عود و خطرپذیری در بیماران وابسته به متاآمفتامین و تحت درمان ماتریکس

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مقاله پژوهشی

چکیده

مقدمه: طی سال‌های اخیر گرایش به مصرف مواد محرک از دسته متاآمفتامین‌ها در ایران رو به افزایش بوده است. هدف از انجام این پژوهش، بررسی ارتباط بین خطرپذیری و عود در درمانجویان تحت درمان ماتریکس بود.

روش‌ها: مطالعه حاضر به صورت مقطعی بر روی درمانجویان مرد مصرف کننده مواد محرک تحت درمان ماتریکس در مرکز ملی مطالعات اعتیاد صورت گرفت. نمونه‌گیری به صورت در دسترس انجام شد و ۹۲ درمانجوی مرد انتخاب شدند. به منظور بررسی اعتیاد، تست متاآمفتامین از همه افراد با و بدون عود انجام گرفت. پرسش‌نامه‌های دموگرافیک و پرسش‌نامه مختص به شرایط مصرف مواد برای هر بیمار تکمیل و سپس تست خطرپذیری بادکنکی BART برای بیماران انجام گردید.

یافته‌ها: میانگین سنی شرکت کنندگان مطالعه ۶/۶۰ ± ۲۷/۵۹ سال و پیش‌بینی کننده‌های عود شامل سن، وضعیت اشتغال، وضعیت تأهل، سابقه رفتارهای مجرمانه و داشتن سابقه اعتیاد در خانواده بود. همچنین، کسب نمره آزمون خطرپذیری تنظیم شده بالاتر از میانگین گروه، احتمال عود را بیش از ۹۷ درصد افزایش داد. تفاوت معنی‌داری از لحاظ بروز عود در میان بیماران با مصرف هم‌زمان مواد اپیوم و محرک در مقایسه با مصرف تنها مواد محرک وجود نداشت. همچنین، بیماران دارای رفتار خطرپذیرتر، احتمال بیشتری برای بروز عود نشان دادند.

نتیجه‌گیری: یافته به دست آمده سودمندی این ابزار برای ارزیابی ویژگی خطرپذیری در مصرف کنندگان مواد محرک را نشان می‌دهد.

واژگان کلیدی: عود، خطرپذیری؛ متاآمفتامین؛ سوء مصرف مواد

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