Meta-Analysis of Comparing Personal and Environmental Factors Effective in Addiction Relapse (Iran, 2004 - 2012)

Abstract

Objective: Addiction is one of the most important social problems in society that is associated with several issues in medical, psychiatric, family, employment, legal, financial and spiritual areas. Therefore, in recent years, numerous studies have been conducted to investigate the causes of addiction relapse in treated addicts and researchers have also tried to determine the amount and importance of the role of each personal and environmental factor effective in this disorder. As a meta-analysis, this study aims to integrate different studies and investigate the impact of personal and environmental factors on the addiction relapse into treated patients. **Method**: This study is a meta-analysis which uses Hunter and Schmidt's approach. For this purpose, 28 out of 42 studies enjoying acceptable methodologies were selected, upon which the meta-analysis was conducted. A meta-analysis checklist constituted the research instrument. Using summary of the study results, the researcher manually calculated effect sizes and interpreted them based on the meta-analysis approach and Cohen's table. **Results**: After data collection, the results revealed that the effect size of environmental factors on addiction relapse was .64 ($p \leq 0.00001$) while it was obtained equal to .41 ($p \leq 0.001$) for personal factors on addiction relapse. **Conclusion**: According to Cohen's table, these effect sizes are evaluated as high and moderate for environmental factors and personal factors on addiction relapse, respectively.

Keywords: meta-analysis, addiction relapse, personal factors, environmental factors, treated addicts

Saideh SafariHajatAghaiee, Ayuob kamali, Samireh DehghaniFiroozabadi, Mahdi Esfahani

Saideh SafariHajatAghaiee
M.A. Student of Clinical Psychology
Esfahan University
Esfahan, Iran
E-mail: Bahar_s1368@yahoo.com

Ayuob kamali
M.A. Student of Clinical Psychology
Esfahan University
Esfahan, Iran

Samireh DehghaniFiroozabadi
M.A. Student Family Counseling
Esfahan University
Esfahan,Iran

Mahdi Esfahani
Ph.D. Student of Psychology
Esfahan University
Esfahan, Iran

Introduction

A problem that is so widespread that threatens the most important values of a society can be referred to as a "social problem" which stands against social welfare, as disease simply stands as the other of health. According to some experts, social problems should have four features: a) the availability of a multiplicity of complications b) high prevalence and widespread c) being considerd as a problem by experts, and d) being accepted as a problem by people (Ebrahimi, 2010). Addiction is one of the most important social problems in the community that is accompanied by several issues in medical, psychiatric, family, employment, legal, financial and spiritual areas. Addiction not only affects a person's life, but also brings about numerous flaws and problems for the family and the community, and imposes a number of burdens on them. Addiction requires management over time like any other disorders (Daley et al., 2005; Termorshuizen et al., 2005). United Nation Office for Drug Control (2005) has estimated the number of 15-64-year-old drug abusers at 200 million or 5% of the total world population. From among them, 15 million, or 4% of the population of drug users, are opioid users and 11 million of them have been estimated to be heroin users. The number of drug users in Iran has been estimated to range from 8.1 to 3.3 million people where opiates take up the highest frequency of the type of drug (Makri, 2002).

Treatment of drug abuse has been of concern to the authorities and also the substance abusers and their families. Bodily drug use cessation is not a very big problem; indeed, the main problem is the relapse and reuse of it (Laleh, 2000). In a study, addiction recidivism was reported to be 70% in Taiwan. For this reason, some experts use the term chronic and recurrent disorder to describe addiction (Ching, Yu-Jhen & Fu-Cun, 2007). Marlatte & Gordon (1985) have predicted the possibility of having a relapse to drugs to be 50% in the most optimistic state.

They suggest that this probability may be valid for up to 90% (cited in Snow & Anderson, 2000). Coob (2000; cited in Hedayati, 2005) also estimated that 80% of the drug addicts who have successfully undergone detoxification period resume drug-taking within a year or less and only 20% of them continue their recovery after detoxification. For this reason, relapse into heavy and uncontrolled periods of drug use is at play as a common problem despite advances in the treatment of this disorder. After the passage of 90 days from detoxification and entering treatment rehabilitation centers, the majority of drug abusers relapse into substance abuse (McKay, Franklin, Patapis & Lynch, 2006). According to the statistics pertaining to the presence of drug addicts in rehabilitation centers, most of them, after the abstention from drug use, have used the rehabilitation services by themselves or have been forced by the court to use such services more than2 to 3 times. For example, in a study conducted on 96 addicts referring to a rehabilitation center in Zanjan, it was revealed that all the clients had had one attempt to

stop drug-taking at least (Din Mohamadi, Amini & Yazdankhah, 2007). Addiction is a chronic and relapsing disease and multiple factors (such as biological, psychological, social, and family factors) play some part in the relapse of its symptoms after completion of detoxification (Nathan, 1980; Rotgers, 1996; Golestani, 2007). Fallahzadeh & Hosseini (2006) enumerate the factors affecting drug relapse as follows: addicted friends, stress, reference to the former locations, adverse situations, rejection by family and society, and observing the objects and tools of drug use. Narimani (2000) considers the following factors as the main causes of addiction relapse: lack of planning for addicts' employment, lack of awareness of how to cope with the problems of life, contaminated social environment, addicted friends, leisure vacancy, non-participation in group therapy, anxiety, depression, and lack of hope. According to Amini, Amini, Afshari Moghadam & Azar (2003), contact with opioid substances, financial bankruptcy, addicted friends, family rejection, feelings of mental compulsion to use drugs, mental retardation and physical defects, and a false confidence are the most important factors that cause people to relapse into addiction. Similarly, Ahari, Azami, Brock, Amani & Sedigh (2004) found that addicted friends, family conflicts, the short period of treatment program, and social problems are the contributory factors in addiction relapse.

Overall, the factors leading to addiction relapse can be categorized into the following groups: personal factors (spiritual poverty, depressed mood, numbers of treatment, previous dose, education, unemployment, physical weakness, temptation, lack of confidence, lack of perseverance), family factors (addiction of one or more members of the family, family conflicts, weakness of parental supervision, father's unemployment, low parental education), social factors (school environment, bad friends, unhealthy entertainment, unemployment, lack of social acceptance, cultural poverty, population growth , uncontrolled migration), and geographic and economic factors (living in the areas situated in the routes of drug trafficking, ease of access to drugs, poverty and economic crisis, unemployment and escape from life's problems) (Younesi & Mohamadi, 2006). Meta-analysis is a great way to put together different results from different studies and also is a statistical approach for integrating the independent results which leads to the conclusions that are more accurate and reliable than the results derived from separate studies (Rosenthal & DiMatteo, 2001, 2001; cited in Martins, Ramalho & Morin, 2010). Due to various reasons noted for addiction relapse, this study was an attempt to compare personal and environmental factors influencing addiction relapse via a meta-analysis in the hope that the results of this study and other similar studies can be put into use towards designing an appropriate model for developing an effective program to increase the period of abstention of drug abuse.

Method

In this study, considering the objective of the study, a meta-analysis was used which is categorized in descriptive studies. A meta-analysis combines the results of similar but independent surveys (Sharon & Normand, 1999). The basic principle of a meta-analysis is calculating the effect size for distinct researches and translating it into a common matrix and combining them to achieve a mean effect (Howitt, & Cramer, 2009). The statistical population of the study included the published articles with appropriate sample sizes in scientific journals and valid conferences during the last 8 years (2004-2012) relating to personal and environmental factors affecting addiction relapse in Iran. As well, the selected papers should meet the requirements in terms of the reliability and validity of the instrument and sampling method. The researcher referred to the following locations and resources to obtain the required articles: Archive of Scientific Research Journals available in the libraries of School of Education and Psychology at the universities of Isfahan, Iran scientific documentation center website (Irandoc), website of Iranian scientific Information Database (Sid), website of Iranian information magazines (Magiran), and the booklet of the conferences held on the issue of addiction. To this end, the studies that had met methodological requirements were used, that is, the articles that had observed inclusion criteria. The number of such articles amounted to 28 articles which were selected out of 42 ones. In this study, the inclusion criteria were as follows: the satisfaction of methodological requirements (hypothesis, research methodology, population, sample size and sampling method, instrumentation, validity and reliability of the instruments, statistical assumptions, methods of statistical analysis, and accuracy of statistical calculations), the placement of research focus in the area of personal and environmental factors, and study in a cohort research group (case studies and single subject studies were not selected).

Instrument

1. Primary sources: the literature on the research topic that had met inclusion criteria was used.
2. The checklist of content analysis: this checklist was used to extract necessary information towards conducting the meta-analysis from the content of the research papers with inclusion criteria. Table 1 shows the features of the selected studies for this meta-analysis.

Procedure

The procedure of conducting the meta-analysis was as follows: definition of the research problem, research coding, detailed statement of the selection criteria, focus on the factors effective in addiction relapse, selection of the standard papers for using in the meta-analysis, review of research papers,

summary of the results, calculation of effect sizes, formulation of research questions and hypotheses, descriptive analysis of research papers, and description and interpretation of the effect sizes and combination of the studies. Since none of the research papers used here to conduct this meta-analysis had correctly reported the effect size, the statistics of different studies were manually converted to the r index and then to d index via Hunter-Schmidt's approach in this study. The following formulas were used to calculate the total effect size using Hunter-Schmidt's approach, significance level, and moderating variable.

$$\bar{r} = \frac{\sum_{j=1}^{k} N_j\, r_j}{\sum_{j=1}^{k} N_j} \ \& \ \text{SDr} = \sqrt{\frac{\sum Ni(ri - \overline{r})^2}{\sum N}} \ \& \ \text{SEMr} = \frac{SDr}{\sqrt{K}} \ \& \ Z = \frac{\bar{r}}{SEMr}$$

$$\& \text{SEV} = \frac{(1-\bar{r}^2)^2}{\bar{N}-1} \ \& \ V_{\text{total}} = \frac{\sum Ni(r - \bar{r}^2)^2}{\sum Ni} \ \& \ \text{Moderating variable} = \frac{\text{SEV}}{V_{\text{total}}}$$

Results

Descriptive information relating to the selected studies in the meta-analysis is presented in the following table.

Table 1: Descriptive information relating to the selected studies in the meta-analysis

Research Topic	Researcher	Sources	Year	Sample
Investigation of the causes of addiction relapse from the perspective of drug abusers referring to the welfare center of Yazd city	Hossein Fallahzadeh	Yazd School Health	2007	230
Factors effective in the relapse into drug addiction in the patients self-referring to rehab centers in Tehran	Sadeghiyeh Ahari	Ardabil Medical Sciences	2005	140
Factors effective in addiction relapse of drug abusers self-referring to rehab centers in Zahedan	Nasr Nastiayi	Uremia Nursing and Midwifery	2011	200
Factors effective in drug dependence and addiction relapse among NA groups of Khomein city	Abolfazl Seraji	Medical Sciences of Arak	2011	350
Factors effective in addiction relapse from the perspective of drug abusers referring to rehab centers of Rafsenjan city	Tayebeh Mirazayi	Iranian Journal of Nursing	2011	200
Mutual relationship between drug use and attentional bias: comparison of relapse users and treated patents	Mahdiyeh Rahmaniyan	Iranian Scientific Information Database	2006	60

Research Topic	Researcher	Sources	Year	Sample
Personality dimensions effective in addiction relapse in the opioid addicts under maintenance treatment	Akram Asghari	Research on Addiction	2011	210
The role of irrational beliefs, perceived self-efficacy and social support in relapse of substance abuse disorders	Touraj Hashemi	Research on Addiction	2010	200
On the comparison of the effectiveness of group cognitive-behavioral therapy and maintenance treatment changing relapse prevention beliefs	Tahereh Ghorbani	Research on Addiction	2012	30
Effectiveness of the matrix model in relapse prevention and increase of coping skills in substance dependent patients	Ali Farnam	Research on Addiction	2014	22
Teaching Bowen's self-differentiation in the relapse of substance abuse symptoms	Mahdi Narimani	Research on Addiction	2011	36
The role of effective factors in drug abstinence	Hamid Kiyanipour	Research on Addiction	2012	90
On the comparison of primary maladaptive schema between the addicts successful in drug abstention, addicts unsuccessful in drug abstention, and non-clinical populations	Bahram Sahand	Research on Addiction	2010	90
The effectiveness of stress management through cognitive-behavioral approach in relapse prevention in male addicts	Negar Karimian	Research on Addiction	2012	30
The impact of training coping strategies in relapse prevention with emphasis on cognitive-behavioral techniques	Shoaa Kazemi	Research on Addiction	2010	30
The relationship between personality traits and the number of drug abstention in addicts	Leila Bayat Mokhtari	Research on Addiction	2010	83
The effectiveness of the relapse prevention based on mindfulness in relapse prevention and motivation of the opioid dependent patients	Ali Kaldavi	Clinical Psychology	2012	24

Research Topic	Researcher	Sources	Year	Sample
Sociological analysis of addicts' relapse into drug use in community-based treatment centers of Mashhad	Hossein Behravan	Study of Iranian Social Problems	2010	120
Internal and external control resources in addiction relapse at the work-treatment camp	Alirea Kaldi	Social Welfare	2008	277
The effectiveness of group cognitive-behavioral therapy in relapse prevention and improvement of the mental health of addicts	Javad Mollazadeh	Knowledge and Behavior	2007	30
The factors associated with addiction relapse in the clients self-referring to substance addiction centers	Ghazal Poursetayi	Second National Conference on Addiction	2013	181
The impact of spirituality and religious-social activities on the mental health of members NA after abstention	Ali Beigi	Second National Conference on Addiction	2013	96
Relationship between motivation for achievement and resilience of those who have had drug abstention	Maeziyeh Nemati	Second National Conference on Addiction	2013	45
On the investigation of the factors effective in addiction relapse in the residents of Isfahan therapeutic community center	Ahmad Abedi	Second National Conference on Addiction	2013	50
Life skills training effects on control displacement and addiction relapse in treated addicts	Amin Asgari	Fifth Congress of Addiction	2012	60
Examining the causes of addicts' failure in drug abstention in Gonabad prison	Tayebeh Reihani	Fifth Congress of Addiction	2012	200
The effectiveness of cognitive-behavioral therapy in male addicts' relapse prevention	Mehrnosh Bagherian	Fifth Congress of Addiction	2012	26
Investigating external/internal control resources in addiction relapse in the addicts referring to rehabilitation centers	Roshanak Khodabakhsh	Fifth Congress of Addiction	2012	100

The results of personal factors associated with addiction relapse are presented in the table below.

Table 2: The results of personal factors associated with addiction relapse

No.	Independent variable	Frequency	Effect size		
			Statistic	*D*	*r*
1	Gender	8	$x^2 = 14.59$	.27	.56
2	Employment	8	$x^2 = 9.48$	.41	.20
3	Marital status	8	$x^2 = 19.08$	.28	.34
4	Duration of abstention	2	$x^2 = 14.78$	.25	.52
5	Depressed mood	3	r	1.22	.52
6	Duration of drug-taking	2	$x^2 = 14.78$	.25	.52
7	Frequency of daily consumption	1	$x^2 = 8.91$	.19	.39
8	Frequency of abstention attempts	4	r	.43	.21
9	The addicts' hopefulness at the onset of drug abstention	1	t= 4.879	.98	.44
10	Education	10	$x^2 = 98.83$	1.19	.51
11	Type of drug	3	$x^2 = 255.10$	2.87	.82
12	Tired of one's status	2	t= -3.225	4.69	.92
13	Unemployment and income change	6	r	.80	.37
14	Irregularity in referring to treatment centers	2	r	1.04	.66
15	Insomnia	4	t= -5.643	.54	.26
16	Lethargy	4	r	.77	.36
17	Physical pains	4	r	.32	.24
18	Sexual dysfunction	1	r	.18	.09
19	Lack of self-confidence	4	$x^2 = 5.107$	2.14	.73
20	Revenge from family	1	r	1.04	.46
21	Stubbornness with family	1	$x^2 = 17.66$	.43	.21
22	Failed marriage	1	$x^2 = 9.21$	.43	.21
23	Love Failure	1	$x^2 = 8.91$	.19	.39
24	Discarding treatment recommendations	3	r	1.39	.57
25	Craving	10	r	6.86	.96
26	Duration of abstention	2	r	.82	.38
27	Perseverance	3	r	1.04	.46
28	Novelty seeking	1	r	3.71	.88
29	Irrational Beliefs	2	$x^2 = 82.150$	1.62	.63
30	Emotional Intelligence	3	r	.85	.39
31	Psychological hardiness	1	r	.18	.09
32	Impulse Control	1	r	.72	.34
33	Dysfunctional schemas from childhood	2	r	1.15	.50
34	Enjoyment of effective coping strategies	2	r	.52	.25
35	Introversion	2	r	2.67	.80
36	Neuroticism	4	r	3.71	.88
37	Self confidence	3	r	1.46	.79

No.	Independent variable	Frequency	Effect size		
			Statistic	D	r
38	Motivation	2	r	4.69	.92
39	Commitment to family and relatives	1	r	.80	.37
40	Commitment to the goals and values of society	1	r	.18	.09
41	Positive attitude to addiction	2	r	.65	.31
42	Perceived discrimination	2	r	.04	.02
43	Success in achieving life goals	1	r	2.14	.73
44	Religiosity	2	r	.43	.21
45	Frequency of drug abstention	2	r	.52	.25
46	Spirituality	2	r	.28	.58
47	Previous imprisonment experience	2	r	.16	.80
48	Loneliness	2	r	.15	.30
49	External control resource	3	t= 2.340	.39	.19

The results pertinent to the role of environmental factors in addiction relapse are presented in the table below.

Table 3: The results of the environmental factors effective in addiction relapse

No.	Independent variable	Frequency	Effect size		
			Statistic	d	r
1	Addicted friends	12	x^2=9.21	4.69	.92
2	Family conflicts	10	r	2.87	.82
3	Associative factors	4	-	.43	.21
4	Contaminated environment	5	x^2=6.63	1.04	.66
5	Inefficiency of psychotherapy sessions	2	-	.43	.21
6	Family pressure	4	x^2=20.46	.47	.23
7	Residence	2	r	1.39	.57
8	Former Friends	10	x^2=9.21	4.69	.92
9	Drug accessibility	11	$x^2 =107.50$	86.6	.96
10	Availability of hangouts	1	$x^2 =84.50$	1.71	.65
11	Normalization of drug use	2	$x^2 =52.11$	.80	.37
12	Community rejection	3	$x^2 =17.66$	.43	.21
13	Lack of healthy entertainments	2	$x^2 =9.21$	.43	.21
14	Loss of family head	3	r	.77	.36
15	Family inattention	5	r	.32	.24
16	family members being drug abuser	7	r	.18	-.09
17	No follow-up by medical staff	2	r	.72	.34
18	Emphasis on medical therapy alone	4	r	1.32	.55

19	Social support	4	r	.77	.36
20	Cognitive Behavioral Therapy	8	t=-3.772	.54	.26
21	Treatment based on matrix model	2	t=-3.087	.50	.14
22	Self-differentiation training	1	t=-5.643	.54	.26
23	Ambiguous family boundaries	4	x^2=9.21	.43	.21
24	Mindfulness-based therapy	2	t=2.340	.39	.19
25	Social Satisfaction	2	r	.16	.08
26	Social participation	2	r	-.15	.30
27	Social class	3	r	.52	.25
28	Labelling	4	r	.82	.38
29	Group cognitive-behavioral therapy	4	t=3.700	.45	.22
30	Teaching life skills	2	r	.72	.34
31	Absence of social rights	2	r	1.15	.50
32	Social control	1	r	.49	.24
33	Legal issues	2	r	.52	.25

The effect size means for personal factors and environmental factors are presented in the table below.

Table 4: effect size means for personal factors and environmental factors

Type of factor	Effect size mean (d)	Effect size mean ($\bar{r}$)	Sig.	SEV/V$_{total}$
Personal factors	.41	.40	.001	.42
Environmental factors	.64	.51	.0005	.51

Discussion and Conclusion

The basic purpose of a meta-analysis on internal studies focused upon factors effective in addiction relapse can result in a general understanding from the results of research done on this subject via the combination and integration of the previous results. The results of the present study showed that the mean effect size (Cohen's d) was .64 for environmental factors and .41 for personal factors in addiction relapse. The magnitude of effect size represents the rate or degree of the presence of a phenomenon in society; and the greater the effect size is, the stronger the presence of that phenomenon is felt in society. According to Cohen and Cohen's effect size table, environmental factors have come out with a large effect size, but the effect size for personal factors is moderate. In fact, the results of the meta-analysis implicated the stronger relationship of environmental factors with addiction relapse compared to that with personal factors. Due to the significance level and confirmation of the null hypothesis, it is implied that the difference

between both personal and environmental factors in addiction relapse is significant and considerable.

Amongst the personal factors, craving took the greatest magnitude of effect size. Craving is representative of desire and willingness to pleasant stimuli; in other words, when the drug-taking behavior is inhibited, the addict's need is aroused and this inclination engenders an increase in one's attentional bias which itself occasions a rise in craving and emotions for relapse into drug use (Lavy & Van den Hout, 1993; Ornstein, Iddon & Baldacchino, 2000; Elgeili & Bashir, 2005; Mirzayi, 2007; Franken, Kroon, Wiers & Jansen, 2000). As well, dopamine level increases, particularly in the amygdaloid and cingulate gyrus and, thereby, the person's attention is drawn to substance-related stimuli (Franken, 2003). According to Robinson & Berridge (1993), relapse sufferers cannot afford to ignore substance-related symptoms in contrast to the treated persons and this will lead to focus on symptoms and an augmentation in craving for relapse into drug use. Thus, the presentation of specific methods towards dealing with these factors is necessary to stabilize the success of treatment.

Among the environmental factors, capability of sourcing drugs, as a main reason for drug relapse, enjoyed a high effect size. Walton, Reish & Ramanthan (1995) have studied the effects of environmental factors on addiction relapse and found a significant relationship between addiction relapse and drug encounters. This finding is indicative of the need for more attention to the environment of home, residence, and personal workplace of the individuals who have already stopped drug use. According to the ecological model of substance abuse; family atmosphere, workplace, lifestyle, and reference to former group of friends are effective in addiction relapse. In this situation, if the environment stresses imposed on an individual surpass his/her adaptive capabilities, he/she will be at risk of relapse into drug abuse. This finding is consistent with that obtained by Shargh, Shakibi, Neysari & Alilou (2011); Fallahzadeh & Hosseini (2006); Behravan & Miranouri (2010); and Kiyanipour & Pourzad (2011). Friends play an important role in addiction relapse in that drug users try to convince their friends to accompany them. Relationship and friendship with people suffering substance abuse is a significant risk factor for addiction relapse and is likely to destroy any progress obtained in treatment (Din Mohamadi, Amini & Yazdankhah, 2007).

Many studies such as those done by Ahari, Azami, Brock, Amani & Sedigh (2004) and Gossop, Stewort & Browne (2002) have come to the conclusion that the greatest number of relapse has occurred in the first six months of treatment and more than 60% of the clients have undergone relapse in this period. It seems that supporting the clients should not be summarized solely in counseling sessions, medication, and training. This statement confirms Mundt, Moore & Bean's (2006) who have stated that effective

monitoring and follow-up treatment of addicted patients can lead to a better prognosis. People should accept that they are responsible for support request. Lack of social support whose origin is family, friends, and the community causes a reduction in the patients' resistance to environmental stress and can lead to relapse and drug use (Zeinali, 2010; Copello, 2000). In Marlatt & Barrett's treatment model (1994), lack of social support increases the possibility of slipping back to drug abuse and this slip may lead to relapse via a process called abstinence-violation effect.

Another important part of the process of the meta-analysis was the discovery of moderating variables which manipulate the relationship between two variables under study. Using mathematical equations, researchers find such mediating variables. Therefore, it is possible to predict the relevant moderating variables according to the results of previous studies. In such a situation, the obtained relationship has not been affected by the mediating variables (Safari Hajat Aghaii, Kamaly, & Esfahani, 2012). In the present study, SEV/V_{total} was obtained $.75 \geq .51$ for environmental factors and $.75 \geq .42$ for personal factors. This means that a vivid role for mediating and effective variables in both variables. Thus, according to previous studies and calculations about moderating variables, one can certainly view the mixed role of both personal and environmental factors effective in addiction relapse. In other words, collection of personal, familial, social, cultural, and economic factors with different ratios affects addiction relapse. This is so while this research came out with a more tangible role for environmental factors. Therefore, it is strongly needed to design some studies with more focus on relevant environmental factors and the strategies for prevention of relapse addiction as the main problem.

In this research, many studies were not included in the meta-analysis since they had not fully reported statistical indexes. In the same way, the number of specified causes which are categorized under the heading of personal and environmental factors, was not enough to separately calculate and compare the effect size of all types of the causes with each other. Therefore, in case the replication of research on any of the causes effective in addiction relapse is welcomed and complete statistical reports are included in such researches, the possibility of comparative evaluation of various possible causes effective in addiction relapse in the form of meta-analysis will be provided. The meta-analysis of comparative study of various interventions in the treatment of addiction is an important issue that could be examined in future research projects. Another limitation of this study was that Howitt & Cramer's approach was used rather than Hunter and Schmidt's approach in the initial calculations of the meta-analysis since even some selected studies lacked the report of accurate statistics. According to the results, the following suggestions are offered: 1- strengthening the activities pertaining to the prevention of tendencies to drugs due to high probability of addiction relapse

after abstinence, 2- establishing counselling centers with social workers for the follow-up of addicts' treatment, especially in the first six months of abstinence, 3- Providing counselling services to the whole family members of the patient to acquaint them with treatment process and diminish family disputes and tensions, 4- increasing one's belief in his/her personal capabilities to change individual therapies and inculcating this feeling into the person that he/she is supported by the work-treatment personnel so that he/she will feel the availability of more self-efficacy about the new conditions by observing the established relations and positive changes, 5- Stopping the person under treatment from socializing with addicted friends and commuting the previous locations wherein he/she has taken drugs, 6- conducting more watchful surveillance on drug distribution centers by the police and local residents, 7- moving to another city if possible, and 8- changing the public image about the ex-addicts via education and mass media.

Reference

Ahari, S., Azami, A., Brock, M., Amani, F., & Sedigh, A. (2004). Factors effective in the relapse into drug addiction in the patients self-referring to rehab centers in Tehran, *Journal of Ardabil University of Medical Sciences, 3 (4),* 36-40.

Amini, K., Amini, D., Afshari Moghadam, F. & Azar, M. (2003). Study of social and environmental factors associated with patients' relapse into opiate use among the clients referring to governmental rehab centers of Hamadan, *Journal of Zanjan University of Medical Sciences, 45,* 41-47.

Behravan, H. & Miranouri., A. (2009). Sociological analysis of addiction relapse on the addicts in community-based treatment centers of Mashhad, *Journal of Studies on Social Problems*, *1 (1),* 45-78.

Carr, A. B. (2002). Systematic reviews of the literature: The overview and Meta-analysis. *Dental Clinics of North America, 46*, 79–86.

Ching, C., Yu-Jhen, H., & Fu-CunY. (2007). A Study on Factors Affecting the Abstention of Drug Abuse in Private Rehabilitation Institutes in Taiwan—Operation Dawn Taiwan as an Example. *Flinders Journal of Law Reform*, *2(5),* 1-22.

Copello, K. (2000). Social Role Negotiation Skills For substance abusing adolescents: A Group model. *Journal of Substance Abuse Treatment, 11 (3),* 197– 204.

Daley, A. C., Marlatt, G. A., Lewinson, J. H., Ruiz, P., Millman, R. B., Langrod, J. G. (2005). Substance Abuse (A Comprehensive Textbook), 4th edit. Boston: Williams & Wilkin.

Din Mohamadi, M., Amini, K., & Yazdankhah, M. (2007). Social and environmental factors affecting the tendency to resume taking opiate drugs

from the perspective of the abusers self-referring to the Reception, Treatment, and Prevention Welfare Organization, *Journal of Zanjan University of Medical Sciences*, *15(59),* 85-94.

Ebrahimi, A. (2010). *Community-based program and its measurement*, Kankash Publication.

Elgeili, E.S, Bashir, T.Z. (2005). Precipitants of Relapse among Heroin Addicts. *Addictive Disorders & Their Treatment, 4(1),* 29-38.

Fallahzadeh, H. & Hosseini, N. (2006). Investigation of the causes of addiction relapse from the perspective of drug abusers referring to the welfare center of Yazd city, *Quarterly Journal of Yazd School Health*, *5 (1 & 2),* 62-73.

Franken, I. H. (2003). *Cognitive and neuropharmacological processes in human drug craving,* Unpublished thesis, University of Amsterdam

Franken, I. H., Kroon, L. Y., Wiers, R. W, Jansen, A. (2000). Selective cognitive processing of drug cues in heroin dependence. *Journal of Psychopharmacology*, *14,* 395-400.

Golestani, F. (2007). *Evaluating the effectiveness of group therapy based on stages of change to prevent the recurrent relapses of drug users in Kerman*, Master's thesis (in press), Allameh Tabatabai University.

Gossop, M., Stewort, D., Browne, N. (2002). Factors associated with abstinence, lapse or relapse to heroin use after residential treatment: protective effect of coping responses. *Addiction, 97(10),* 1259- 67.

Hedayati, N. (2005). *Personal protective characteristics of addiction in Narcotics Anonymous (NA) in Shiraz*, Clinical Psychology Master's thesis (in press), University of Welfare and Rehabilitation Sciences.

Howitt, D., & Cramer, D. (2009). Introduction to Research Methods in Psychology (translated by Pashasharifi, H., Najafiand, J., Mirhashemi, M., Sharifi, N., Manavipoor, D), Tehran: Sokhan.

Kiyanipour, O. & Pourzad, A. (2011). On the investigation of the role the factors effective in abstention of addiction, Addiction and Substance Abuse Research Quarterly, *6(22),* 39-54.

Laleh, M. (2000). Addiction: *An individual disorder, a social disaster*, Tehran: Teimourzadeh Publication.

Lavy, E. H, Van den Hout, M. A. (1993). Attentional bias for appetitive cues: Effects of fasting in normal subjects. *Behavioral Cognitive Psychotherapy*, *21,* 297-310

Marlatte, G. A, Barrett, K. (1994*). Relapse Prevention; In H. Pkleber (Ed) the text book of substance abuse*; Washington D .C. *American Psychiatric Press Inc*.

Martins, A, Ramalho, N, & Morin, E. (2010). A comprehensive meta-analysis of the relationship between Emotional Intelligence and health, *Jornal of Personality and Individual Differences*, *49*, 554–564.

McKay, J., Franklin, T., Patapis, N., & Lynch, K. (2006). Conceptual, methodological, and analytical issues in the study of relapse. *Clinical Psychology Review*, *26(2),* 109-127.

Mirzayi, T. (2007). Factors effective in addiction relapse from the perspective of the relapse sufferers referring to drug treatment centers in Rafsanjan, *Iranian Journal of Nursing, 23(67),* 49-58.

Mokri, A. (2002). Brief overview of the status of drug abuse in Iran. *Archives of Iranian Medicine*, *5*, 184-190.

Mundt, G. C., Moore, H. K., Bean, P. (2006). An interactive response program to reduce drinking relapse: A feasibility study. *Journal of Substance Abuse Treatment*, *30(1),* 21-9.

Narimani, M. (2000). *Addiction and the methods of coping with it*, Ardabil: Sheikh Safi Publication.

Nathan, P. E. (1980). *Etiology and process it? The addictive behavior*. In W.R. Miller. (Ed.), The addictive behavior. New York: Pergamin.

Ornstein, T. J., Iddon, J. L., & Baldacchino, A. M. (2000). Profiles of cognitive dysfunction in chronic amphetamine and heroin abuse. *Neuropsychopharmacology*, *23,* 113-126.

Robinson, T. E., & Berridge, K.C. (1993). The neural basis of drug craving: An incentive-sensitization theory of addiction. *Brain Research Review*, *18,* 247-291.

Rotgers, F. (1996). *Behavioral theory of substance abuse treatment. Bringing science to bear on practice*. In F. Rotgers, D. Keller, & J. Morgenstern (Eds.), Treating substance use: theory and practice. New York: Guilford press. 174-200.

Safari Hajat Aghaii, S, Kamaly, A, Esfahani, M. (2012). Meta-Analysis of Personal and Environmental Factors That Influence People's Tendency to Addiction. *International Journal* of *High Risk* Behaviors and *Addiction, 1(3),* 91-99

Seipp, B. (1991). Anxiety and Academic Performance: A Meta- Analysis of Findings. *Anxiety Research*, *4*, 27- 41.

Shargh, A., Shakibi, A., Neysari, R. & Alilou, L. (2011). Factors affecting addiction relapse from the perspective of the addicts referring to rehab centers in West Azerbaijan province, *Uremia Medical Journal, 22(2),* 129-136.

Sharon, L, Normand, T. (1999). Tutorial in biostatistics: Meta-analysis formulating, evaluating combining and reporting. *Statistic in medicine*, *18,* 321- 359.

Snow, D., & Anderson, C. (2000). Exploring the factors influencing relapse and recovery among drug and alcohol addicted women. Psychiatric Mental Health Nurse Practitioner Program. *Journal of Psychosocial Nursing and Mental Health Services*, *38(7),* 8-19

Termorshuizen, F., Krol, A., Prins, M., Geskus, R., van den Brink, W., Van Ameijden, E. (2005). Prediction of relapse to frequent heroin use and the role of methadone prescription: an analysis of the Amsterdam Cohort Study among drug users. *Drug and alcohol dependence*, *79(2),* 231-240.

United Nations Office for Drug Control and Crime Prevention. (2005). *Global illicit drug trends,* New York: United Nations.

Walton, M.A, Reish, T.M, Ramanthan, C.S. (1995). Social setting and addiction relapse. Journal of *Substance Abuse* Treatment*, 7(2),* 223-33

Wolf, F. (1986). *Meta- analysis*. London: Sage Publication.

Younesi, J. & Mohamadi, M. (2006). The use of information dissemination approach in prevention programs of drug use among adolescents, *Journal of Clinical Psychology and Personality*, *1(16),* 1-10.

Zeinali, A. (2010). Predisposing areas of ex-addiction in treated addicts, *Journal of Psychiatry and clinical psychology, 1(14),* 44-55.