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Comparison of the Effectiveness of Short-term Cognitive-Behavioral Group Therapy and Brief Intervention in the Mental Health Dimensions of Addicted People under the Auspices of Harm Reduction Centers in Ahvaz

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Abstract

Background: Drug addiction is regarded as one of the daunting challenges posed to people in human societies. Since this issue has many hidden and visible dimensions, it should be considered from different perspectives.

Objectives: The present study aimed to compare the effectiveness of short-term cognitive-behavioral group therapy and brief intervention in the mental health dimensions of addicted people under the auspices of harm reduction centers in Ahvaz.

Methods: This quasi-experimental study was conducted based on a pre-test-post-test design with a follow-up. From two harm reduction centers in Ahvaz, a center was randomly selected. After sampling and estimating the sample size, 80 subjects were selected and randomly assigned to three groups (two experimental groups and one control group). A general health questionnaire was used to collect the needed data. In this study, statistical methods of analysis of covariance (ANCOVA) and repeated measures analysis of variance were used. A p-value of less than 0.05 was considered statistically significant.

Results: Based on the results, cognitive-behavioral group therapy and brief intervention had no significant effect on physical symptoms and social functioning; nonetheless, they exerted a significant effect on anxiety (P<0.001) and depression (P<0.001). Moreover, the comparison of means demonstrated that brief intervention is more effective than cognitive-behavioral group therapy (P<0.001).

Conclusion: As evidenced by the obtained results, it can be concluded that the two methods of cognitive-behavioral group therapy and brief intervention were effective in improving the mental health of addicted people under the auspices of harm reduction centers in Ahvaz.

Keywords: Brief intervention, Mental health, Short-term cognitive behavioral therapy

1. Background

"Drug addiction" which is one of the most harmful and common phenomena in the family system refers to pathological dependence on one or more types of drugs. This dependence leads to some behaviors in search of substances. Moreover, if the desired substances are not consumed, the symptoms of deprivation occur in the addicted person's behavior (1). This disease is a global problem that causes irreparable damage to people and society. It can exert negative effects on physical, psychological, social, legal, professional, family, educational, and other aspects of life (2).

The results of several studies indicated that addicted people are not in a good state of mental health and suffer from mental health problems and psychological disorders (3). Mental health refers to the successful state of mental function that leads to effective activities, satisfying and effective interpersonal relationships, as well as the ability to effectively adapt to change, life problems, and challenges (4). It is necessary to devote more attention to the mental state of addicts and be aware of their mental state to plan for comprehensive and scientific treatment. Due to the critical importance of recognizing addicts and planning treatment contracts, such as cognitive-behavioral therapy, assiduous attention need to be devoted to the study of addicts' mental health, coping skills, and relapse prevention.

One of the applied therapies is cognitive-behavioral therapy and brief intervention (5). This approach is a therapeutic method that not only changes attitudes but also seeks to change behaviors that have arisen from inadequate and erroneous learning, as well as attitudes, beliefs, and irrational beliefs. This method is based on the theory that the determining factor of human behavior is his/her way of thinking about him/herself and his/her role in the world (6). Cognitive-behavioral therapy has emerged as a research-based approach to the treatment of mental disorders, including interventions for mental health problems and addictive behavior (7).

Studies have demonstrated that among psychological interventions, the cognitive-behavioral approach is one of the most effective approaches which plays a key role in reducing recurrence by mitigating anxiety and depression, improving relationships with others, as well as enhancing self-esteem and overall quality of life (8). According to this view, drug dependence is viewed as a learned behavior that is acquired through experience based on misconceptions and beliefs (9).

Short-term cognitive-behavioral therapy is a

summary of intensive cognitive-behavioral therapy and the number of sessions is reduced to 4-8 sessions, and the focus is on specific therapy for a limited number of patient problems (10). In their research, Shi et al. (11) concluded that cognitive-behavioral therapy is effective in the reduction of depressive symptoms for a short time. In the same context, Fakhri et al. (12) concluded that group cognitive-behavioral therapy was effective in reducing anxiety and depression in opioid addicts in Ahvaz Harm Reduction Centers.

Short or concise intervention is based on the principles of motivational interviewing or motivational therapy, in which the patient's responsibility for change (desired behavior or cognition or goal) (13) and the therapist's job is to create a set of situations that increase the client's motivation and commitment to change. In this treatment model, motivation is a dynamic concept that is changed and enhanced by the therapist. Motivation is strengthened by removing obstacles and correcting misconceptions. The belief in "addictive personality" is becoming weaker and the coping style among therapists is becoming less and less. By focusing on the strengths of the client and replacing empathy with authority, the client's participation in the process and his/ her responsibility are strengthened (14).

Today, intensive therapies have given way to more relaxed methods, and the intensity of the action is no longer an effective method. They do not, it moves them and leads them to readiness, desire, and ability (15). Vakili, Taghian, and Abbasi (15) concluded that brief interventions help reduce or eliminate substance use by helping individuals understand how their use is at risk. Brief interventions are most effective for people whose substance use is not very severe and long-lasting but have impulsive, problematic, or dangerous patterns of use. On the other hand, in their study, Damico et al. (16) concluded that brief intervention in primary health care reduces the negative effects of alcohol and marijuana use. Along the same lines, Rasekh et al. (17) indicated that among the factors measured in their study, motivational interviews were related to the treatment of drug addicts. Therefore, it is recommended to perform policy reforms that include motivational interviewing with the standard scientific method for the treatment of addiction before undergoing an examination in a hospital.

Addiction can exert numerous adverse effects on personal, social, family, and communication aspects, as well as the individual and social life of the affected person and other related people, such as family. Moreover, it can ruin ones' future life, kills people, and causes irreparable social damage. Therefore, it is mandatory to take necessary and effective measures to identify various cognitive and psychological aspects, followed by effective therapies.

2. Objectives

Due to a serious need for psychotherapy programs, especially group therapy, in addiction harm reduction centers, and the lack of research in the field of cognitive-behavioral therapy of addiction at the level of such centers, the present study aimed to compare the effectiveness of short-term cognitive-behavioral group therapy and brief intervention in the mental health dimensions of addicts under the auspices of harm reduction centers in Ahvaz.

3. Methods

This quasi-experimental applied research was conducted based on a pre-test-post-test control group design with a follow-up stage. The statistical population of this study included all addicts under the auspices of Ahvaz Harm Reduction Center. The total number of addicts currently covered in each center is 100, all of whom are male and have an active record in the harm reduction center. The statistical sample was estimated using the Morgan table. According to the research population, the sample size of addicts under the auspices of the Harm Reduction Center was selected. By referring to the Morgan Table, 80 cases were selected to conduct the present study. These individuals met the criteria for drug use based on The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V) and were diagnosed by the center psychiatrist. They were assigned to two groups of experimental and control via the simple random sampling method. The inclusion criteria were as follows: Addicted people under the auspices of harm reduction centers, absence of any psychotic disorders, no substance intoxication. On the other hand, the exclusion criteria entailed the absence of more than two sessions, and the unwillingness to participate in the sessions. The ethical considerations of the present study were as follows: All subjects received written information about the research and participated in the research if they wished. Moreover, they were assured that all information was confidential and would be only used for research purposes. To protect privacy, the names of the participants were not recorded in the questionnaires and the password was used for the subjects. Therapeutic sessions were considered for the experimental group following the Covid-19 health protocol. In addition to the continuity and motivation for attending treatment sessions for the two experimental groups after the end of the sessions, health supplies were distributed. Moreover, upon the completion of the study, more

effective treatment was performed for the subjects in the control group.

General Health Questionnaire (GHQ-28): The General Health Questionnaire which was designed by Goldberg in 1972 examines the mental state of the individual in the last month in four areas of somatization, anxiety, and feelings of psychological turmoil, social dysfunction, and depression. Form 28 of the General Health Questionnaire was developed by Goldberg and Hillier in 1979 and its questions were extracted based on the factor analysis method of the initial 60-item form (18). In this study, the traditional scoring method was used. The cut-off point in the questionnaire was that subjects who scored 21 and lower were assigned to the healthy group and those with a score of 22 and above were placed in the group of participants with a disorder. Goldberg's meta-analysis showed that the average sensitivity of the questionnaire was 0.84 and the average specificity was 0.82. Goldberg and Williams (19) reported a reliability of 0.95 for this scale, which was completed by the split-half method and completed by 853 people. Furthermore, in this study, simultaneous ability and factor analysis methods were used to study the mental health questionnaire. The concurrent validity of the general health scale was reported to be 0.55 by the concurrent implementation of the Middlesex Hospital Questionnaire (MHQ). Studies conducted by Noorbala et al. (20) on the validity and reliability of GHQ-28 in different countries indicated2 that this questionnaire has high validity and reliability as a screening tool for mental disorders in the community.

The research was performed in four stages: In the first stage, before the intervention, the general health questionnaire was completed for all subjects in both experimental and control groups. In the second stage, short-term cognitive-behavioral group interventions and brief interventions for the experimental group were performed by the researcher. The control group did not benefit from two cognitive-behavioral group interventions and the brief intervention. In the third stage, the second measurement was performed using a general health questionnaire from experimental and control groups. In the fourth stage, after the end of the interventions and post-test of the experimental and control groups, no special intervention was performed for all three experimental and control groups for three months. In other words, as a follow-up step, the effectiveness of cognitive-behavioral group therapy and brief intervention was considered. After the end of the mentioned period, two experimental groups and one control group were retested. The two experimental groups each underwent four 60-minutes sessions of cognitive-behavioral group therapy and brief intervention for four sessions. The control group did not receive any intervention.

In descriptive statistics, mean and standard deviation indices were used, while in the inferential statistics section, repeated measure ANOVA was employed. To investigate the assumptions of the inferential test, Leven's test (to investigate the homogeneity of variances), Kolmograph-Smirnov test (for normality of data distribution), Mbox test, and Mauchly sphericality test were utilized. The aforementioned statistical analyses were performed in SPSS software (version 22). The significance level of the tests was 0.05.

Table 1. Brief intervention protocols for substance users

Sessions	Title	Subject
1	Behavioral change model 1	Not thinking about change (pre-reflection)- thinking about reducing or stopping substance use (reflection)
2	Behavioral change model 2	Doing something to change behavior (action)- persistence in serious behavior (maintenance)
3	Brief intervention components	Based on the model (feedback, responsibility, advice, change options menu, empathy, and self-efficacy)
4	Alcohol, Smoking and Substance Involvement Screening Test (ASIST) screening	Providing feedback based on ASSIST scores at three levels of low risk, medium risk, and high risk

Table 2. Short-term cognitive-behavioral therapy protocols for substance users

Sessions	Title	Subject
1	Motivational interviewing	Motivating to change- strengthening commitment-monitoring the behavior
2	Resisting temptation	Introducing resisting temptation- techniques for coping with temptation- developing a temptation plan – how to deal with slipping
3	Controlling substance use thoughts	The link between the thoughts and behaviors- initiators- irrelevant decisions- planning for activities- unpleasant events
4	Relapse prevention	Drug use rejection- relapse prevention- end of the session

4. Results

The mean age scores of participants in the cognitive-behavioral therapy, brief treatment, and control groups were obtained at 39.46±6.70, 38.71±6.11, and 39.97±6.84, respectively. In

Table 3. Mean and standard deviation of mental health from pretest, posttest, and follow-up

Variable	Groups	Pretest		Posttest		Follow-up	
		M	SD	M	SD	M	SD
Physical symptoms	CBT (1)	11.12	3.70	12.62	2.08	12.81	2.19
	BI (2)	13.23	1.47	11.65	3.27	10.92	2.51
	Control	14.19	4.29	11.35	3.54	11.62	2.13
Anxiety	CBT (1)	11.92	2.17	8.92	1.83	12.15	2.27
	BI (2)	12.50	1.47	9.58	2.30	10.58	2.85
	Control	13.19	1.52	11.15	1.66	11.46	2.14
Social Functioning	CBT (1)	10.92	1.91	11.38	1.67	11.34	3.35
	BI (2)	12.31	1.73	10.15	1.34	10.23	3.31
	Control	11.88	1.58	11.38	1.67	11.19	3.11
Depression	CBT (1)	10.92	1.89	9.00	2.15	12.27	2.47
	BI (2)	12.58	1.96	8.96	1.77	12.77	2.32
	Control	14.04	1.53	11.38	2.66	11.54	1.92

terms of marital status, 46.9%, 14.8%, and 38.3% of participants were single, married, and divorced, respectively. Regarding occupation, 39.5%, 46.9%, and 13.6% of subjects were unemployed, self-employed, and unemployed, respectively.

As displayed in Table 3, the experimental groups (CBT and BI groups) and the control group differed in the mean of mental health from post-test and follow-up. The mental health means decreased for CBT and BI groups, as compared to the mean value for the control group. Assumptions of ANOVA with repeated measures were examined before being implemented. The non-significant value of Z in the Kolmogroph-Smirnov test demonstrated that the distribution of mental health data (P=0.257) was normal. In addition, Leven's test was used to examine the assumption of variance homogeneity. Moreover, the results of Box test (P=0.106, F=1.745, Boxes=11.204) confirmed variance-covariance homogeneity (P>0.05). The statistical assumptions allowed the use of ANOVA with repeated measures.

As illustrated in Table 4, at least one of the interventions affected the subjects' mental health scores in the posttest. It explains 25.1% of the variance in mental health scores after the interventions.

As presented in Table 5, concerning the within-subject factor, the calculated F value for the effect of stages (pre-test, post-test, and follow-up) at the level of 0.05 was significant for mental health (P<0.05).

Table 4. Covariance analysis of the difference between the experimental and control groups

Statistics	Value	Hypothesis df	Error df	F	P	Eta	Testpower
Pillai's trace	0.25	2	74	12.41	0.001	0.25	0.99
Wilks' lambda	0.74	2	41	12.41	0.001	0.25	0.99
Hotelling's trace	0.33	2	41	12.41	0.001	0.25	0.99
Roy's Largest Root	0.33	2	41	12.41	0.001	0.25	0.99

Table 5. Multivariate analysis of variance for mental health

Variables	Source	SS	df	MS	F	P	Partial EtaSquared
Physical symptoms	Time	936.69	1.36	686.65	35.97	0.001	0.56
	Time *Group	431.27	1.18	367.04	16.92	0.001	0.38
	Group	36.10	1.00	36.10	0.92	0.347	0.03
Anxiety	Time	25.62	2	12.81	70.48	0.001	0.71
	Time *Group	12.86	2	6.43	35.39	0.001	0.55
	Group	124.40	1	124.40	49.86	0.001	0.51
Social Functioning	Time	170.60	1.45	117.57	175.61	0.001	0.86
	Time *Group	116.86	1.45	80.54	120.30	0.001	0.81
	Group	211.60	1	211.60	30.21	0.009	0.34
Depression	Time	87.62	2	43.81	164.78	0.001	0.85
	Time *Group	37.48	2	18.74	70.50	0.001	0.71
	Group	113.61	1	113.61	65.25	0.001	0.63

Table 6. Follow-up test to compare the effect of interventions on paired mental health

Variable	I	J	Mean difference	Standard error	P
Physical symptoms	CBT	BI	0.08	0.52	1
		Control	0.82	0.48	0.204
	BI	Control	0.44	0.52	1
Anxiety	CBT	BI	3.95	0.54	0.001
		Control	8.24	0.54	0.001
	BI	Control	12.20	0.54	0.001
Social Functioning	CBT	BI	0.24	0.40	1
		Control	0.67	0.40	0.30
	BI	Control	0.42	0.40	0.88
Depression	CBT	BI	0.71	0.32	0.095
		Control	1.59	0.32	0.001
	BI	Control	0.88	0.32	0.023

As a result, there was a significant difference between the mean scores of pre-test, post-test, and follow-up of mental health in the three stages of pre-test, post-test, and follow-up. Bonferroni posthoc test results were calculated to assess the difference between the means in the treatment stages.

According to Table 6, cognitive-behavioral group therapy and brief intervention did not have a significant effect on physical symptoms and social functioning; nonetheless, cognitive-behavioral group therapy and brief intervention exerted a significant effect on anxiety and depression. Furthermore, a comparison of means demonstrated that brief intervention is more effective than cognitive-behavioral group therapy.

5. Discussion

The present study aimed to compare the effectiveness of short-term cognitive-behavioral group therapy and brief intervention in the mental health dimensions of addicted people under the auspices of harm reduction centers in Ahvaz. The results pointed out that cognitive-behavioral group therapy and brief intervention had no significant effect on physical symptoms and social functioning; however, they exerted a significant effect on anxiety and depression. Furthermore, the comparison of means indicated that brief intervention is more effective than cognitive-behavioral group therapy. The results of this research were consistent with those reported by Schindler et al. (21), Aldridge et al. (22), Sokamati et al. (23), and Damico et al. (24).

The effect of cognitive-behavioral therapy on mental health can be justified on the ground that it is an organized and directional therapy that helps a person to develop independent self-help skills. It is a logical method that teaches the addicted person to consider his/her thoughts and ideas as hypotheses whose validity should be tested. The most important source for the enhancement of mental health is cognitive components (25). Through cognition, addicted people gain insight into their emotional responses, stop suppressing them, and learn how to express their emotional responses to the environment without fear. Consequently, a change in cognition leads to altered emotions and behavior. As a result, psychological interventions are an inevitable part of substance abuse treatment. These techniques motivate, increase social support, and teach coping skills in dealing with substance use problems.

Many psychosocial treatment programs for addiction have not yielded satisfactory results since they assume that new clients are highly motivated to participate in their treatment. In treatment planning, the issue of client motivation is often overlooked; nonetheless, the fact is that most addicts do not have a strong motivation to start treatment for change. Therefore, programs and interventions, such as brief interventions, lead the therapist to explore and discover addicts' perceptions of their current situation and their motivation for change. Instead of telling addicts what to do, the facilitator asks them why they want to change and how they want to make that change. Consequently, instead of the therapist, the clients should state the reasons for the change.

The brief intervention approach begins with the assumption that responsibility and capability are within the client and the consultant's task is to create a set of conditions that reinforces the client's motivation and commitment to change (26). Since change does not happen all at once but requires time and energy, most of the early processes of change take place within the individual; therefore, he/she realizes that spending time and effort on change is worthwhile. On the other hand, motivation plays a crucial role in one's decision to change behavior (27). It seems that a brief intervention in these ways makes the treatment programs more

effective, strengthens positive behaviors, and increases inner motivations, one's readiness for a change, more active participation, as well as adherence to the treatment plan.

Increasing concerns about unhealthy behavior concerning the individual's physical and mental health indirectly and without pressure and coercion; Participating in work plan adjustment; Harmful behavior, providing information, evaluating and strengthening confidence in change and supporting self-efficacy, especially increasing lifestyle self-efficacy related to healthy behaviors, emphasizing a sense of autonomy and freedom of action. In general, brief intervention, due to the reduction of resistance, as well as strengthening internal documents and motivations, has the capacity to increase and strengthen treatment outcomes in the field of addiction problems. It can be understood that brief intervention, participation, and the success of subsequent pragmatic therapies increase.

Study Limitations

Among the notable limitations of this study, we can refer to the restriction of the statistical population to the addicts under the auspices of harm reduction centers in Ahvaz; therefore, the necessary caution should be exercised in generalizing the results. Moreover, since brief treatment is a new therapeutic approach implemented in the research community, this led to research limitations and explanations of interventions. Therefore, it is suggested that these treatment strategies be provided to other groups and service centers for addicts, especially women.

Strength of the study

This study confirms that cognitive-behavioral group therapy and brief intervention were effective in improving the mental health of addicted people under the auspices of harm reduction centers in Ahvaz.

6. Conclusion

As evidenced by the results of the present study, it can be concluded that two methods of cognitive-behavioral group therapy and brief intervention were effective in improving the mental health of addicts under the auspices of harm reduction centers in Ahvaz.

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Conflicts of interest

None.

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