Original Research

Investigating the Stages of Changing the Treatment Process and Its Effect on Action Flexibility and Metacognitive Beliefs of People with Drugs' Addiction

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Abstract:

Background: The aim of this study was to investigate the stages of change in the treatment process and its effect on action flexibility and metacognitive beliefs of people with drugs' addiction.

Method:

The study sample consisted of 30 (15 people in the experimental group, 15 people in the control group) of addicts who were selected by available and voluntary sampling. The research design was pre-test-post-test with a control group and they answered the research tools which were Conner and Davidson (2003) Action Flexibility Questionnaire and Metacognitive Beliefs Questionnaire (30-MCQ). Analysis of covariance (MANCOVA) was used to analyze the data.

Results:

According to the results of the experimental group and the control group, there is a significant difference in terms of positive beliefs about anxiety, beliefs about uncontrollability, low cognitive confidence, need to control thoughts and cognitive awareness.

Conclusion:

Group therapy based on stages of change increased action flexibility and decreased metacognitive beliefs of drug addicts in the experimental group compared to the control group.

Keywords: Therapeutic Process, Action Flexibility, Metacognitive Beliefs, Drugs

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Introduction

The issue of substance abuse is one of the most dangerous problems in society. Substance use can be caused by various biological, social and individual factors. A look at recent approaches shows that the problem of addiction and methods of its quitting are being studied from various aspects to provide more appropriate solutions. Identifying effective treatment methods to increase and decrease the two categories of action flexibility and their metacognitive beliefs can be effective in dealing with specific problems in the lives of people dependent on substance abuse and reduce the causes that lead people to the psychological problems of substance abuse (1). Therefore, in this article, the issues of action flexibility, metacognitive beliefs, group therapy based on the stages of change and substance abuse are examined and in the following, related domestic and foreign researches are stated. Research has shown that addicts have low resilience to stress and adverse events (2,3). Flexibility helps a person to be able to adapt to disasters or pressures, to overcome and even to be strengthened by it. This trait is supported, developed, and presented as a positive trait by a person's inner ability and social skills and interaction with the environment (4). Action flexibility is one of the most important cognitive dimensions for people quitting addiction (5). Identifying and enhancing this construct provides a promising insight into quitting addiction. On the other hand, in these people, due to thinking style and incompatibility, metacognitive beliefs precede the experience of negative emotions, such as anxiety and depression, and also positive and negative metacognitive beliefs may cause continued anxiety (3). Anderson (2015)(2) in a study on drug addicts showed that, addicts have higher metacognitive beliefs than normal people, metacognitive beliefs are one of the factors influencing mental health status. (6) has conducted a study entitled "The effectiveness of behavioral activator group therapy on action flexibility and metacognitive beliefs of opioid-dependent patients. "The aim of this study was to determine the effectiveness of behavioral activator group therapy on action flexibility and metacognitive beliefs of opioid patients. The results showed that behavioral activator group therapy increased action flexibility and decreased uncontrollable metacognitive beliefs, positive beliefs about cognition, low cognitive confidence, need for thought control and cognitive awareness in opioid dependent patients in the experimental group compared with the control group. The findings were stable after one month. Behavioral activator intervention can be an appropriate treatment to reduce cognitive problems in people addicted to opiates. (7) has conducted a study entitled "The effectiveness of metacognitive therapy on tempting beliefs and substance-related beliefs in patients addicted to industrial substances." The aim of this study was to investigate the effectiveness of metacognitive therapy on tempting beliefs and substance-related beliefs in patients addicted to industrial substances. The results showed that metacognitive therapy had a significant effect on the correction of tempting beliefs and substance-related beliefs in both groups dependent on heroin crack and methamphetamine (crystal meth). Also, the effectiveness of this treatment was stable in the two-month follow-up. Flavell (1979) was the first to introduce the term "metacognition". According to him, metacognition includes both cognitive processes and cognitive experiences or regulation. Metacognitive knowledge refers to the acquisition of knowledge about cognitive processes and knowledge about how to use cognitive control processes (8) Metacognitive beliefs include knowledge, beliefs, processes, and strategies that evaluate or control cognition. Metacognition is defined as any knowledge or cognitive process that participates in the evaluation, monitoring or control of cognition (9) Most theorists have

distinguished between two aspects of metacognition, metacognitive beliefs and metacognitive monitoring. Metacognitive knowledge is the information that people have about their cognition and learning strategies that these strategies affect them. Metacognitive monitoring refers to a range of executive functions such as attention, control, planning, and performance error detection. Aydin et al. have designed metacognitive thoughts and beliefs to evaluate psychometrics in the following five dimensions:

1. Positive beliefs about worry (like worry helps me cope)
2. Negative beliefs about worry that focus on being uncontrollable and dangerous.
3. Low cognitive confidence (as if I have poor memory)
4. Negative beliefs about thoughts, these beliefs include such things as punishment, superstition and
5. Cognitive awareness (for example, I pay close attention to how my mind works (10). Flexibility is an action on the capacity to overcome persistent, stubborn difficulties and self-healing. This capacity of man makes him triumphantly go through unfortunate events and improve his social, academic and professional competence despite being exposed to severe stress. Resilience is a characteristic that varies from person to person and can grow or decrease over time and is formed based on human intellectual and practical self-correction in the process of trial and error of life (11) Resilience is a trait that occurs quite naturally. Resilience refers to the dynamic process that human beings display as positive adaptive behavior when faced with adverse conditions or emotional distress. Resilience is clearly more than an estimate. Werner and Smith consider resilience to be the inherent mechanism of human self-correction and say that those who are resilient are flexible (12). These people are neither invincible nor safe. Some of the factors that enhance resilience are person-centered, such as the nature of each person, personality and coping strategies, and variables that are usually statistically expressed, such as gender, older age, and higher education. Other factors include social context factors such as supportive relationships and access to social ties. The term "action flexibility" can be defined as the ability to get out of difficult situations or to adjust. In fact, resilience is the capacity of individuals to stay healthy and to resist and endure in difficult and dangerous situations, in which the person not only overcomes those difficult situations, but also becomes stronger during it and in spite of it.

Therefore, the research hypotheses are as follows:

Research Methods

In this study, quasi-experimental research method (pre-test and post-test design with equal control group) was used. The statistical population in the present study was all people with drug abuse who referred to addiction treatment clinics in Urmia in 2014.The sample of this study included 30 people with drug abuse in the stage of operation and motivational maintenance who were selected by available and voluntary sampling. Then, 15 people in the control group and 15 people in the experimental group were voluntarily assigned from the research sample.

Research Findings

Research Hypotheses

To test the research hypotheses, multivariate analysis of covariance (MANCOVA) was used, the results of which are presented in the following tables. The first hypothesis of the study was that "group therapy based on stages of change is effective on the functional flexibility of drug addicts." The second hypothesis of the research was that "group therapy based on stages of change is effective on the metacognitive beliefs of drug addicts."

As shown in Table 1, by controlling the pre-test, the significant levels of all tests indicate that there is a significant difference between addicts with drug abuse in the experimental and control groups in terms of at least one of the dependent variables (action flexibility and metacognitive beliefs) (F=520.60 and p<0.001). To find out in which variable there is a difference between the two groups, two one-way covariance analyzes were performed in the MANCOVA text, the results of which are presented in Table 1. The effect or difference is equal to 0.94. In other words, 94% of individual differences in post-test scores of action flexibility and metacognitive beliefs of drug addicts are related to the effect of change-based group therapy. Statistical power is equal to 1, in other words, the second type of error was not possible.

As shown in Table 2, with pre-test control, there is a significant difference between addicts with drug abuse in the experimental group and the control group in terms of action flexibility (p <0.001 and F = 79.02). In other words, group therapy based on the stages of change, due to the mean action flexibility of addicts with drug abuse in the experimental group compared to the average of the control group, has increased the action flexibility of the experimental group. The effect or difference is equal to 0.78. In other words, 78% of individual differences in postoperative scores of action flexibility are related to the effect of group therapy based on stages of change. Therefore, the first hypothesis of the research is confirmed.

As shown in Table 2, by pre-test control between addicts with drug abuse in the experimental group and the control group in terms of positive belief about worry (p <0.001 and F = 139.87), belief in uncontrollability (P<0.001 and F = 69.09), low cognitive confidence (p <0.001 and F = 79.39), need for thought control (p <0.001 and F = 138.11) and cognitive awareness (P <0.001 and F = 150.72) there is a significant difference. In other words, group therapy based on stages of change according to the mean metacognitive beliefs of drug addicts in the experimental group compared to the average of the control group, has reduced the metacognitive beliefs of the experimental group. The extent of the effects or differences indicate that the percentages of individual differences in the post-test scores of metacognitive beliefs are related to the effect of group therapy based on the stages of change. Therefore, the second hypothesis of the research is confirmed.

Discussion

The first hypothesis of the study was that "change-based group therapy is effective on the functional flexibility of drug addicts."

According to the results of Table (4-10), it was found that with pre-test control, there is a significant difference between addicts with drug abuse in the experimental group and the control group in terms of action flexibility. In other words, group therapy based on the stages of change due to the mean of action flexibility of addicts with drug abuse in the experimental group compared to the mean of the control group, increased the flexibility of the experimental group. Therefore, the first hypothesis of the research was confirmed. The result of the first hypothesis of research with mathematical research (2012) in a study showed that treatment based on stages of change increases the resilience of drug-dependent patients. Alvard (2014) in another study showed that group therapy based on stages of change in people addicted to substance use increases action flexibility and is consistent with the research of Mar et al. (2013) who during a study showed that group therapy based on stages of change has an effect on increasing resilience.

In explaining this hypothesis, it can be said that drug addicts have low action flexibility in dealing with life challenges due to their perception of psychological challenges, their

conflicts and stressful situations. People with drug abuse are emotionally immature, rebellious, and restless, have high levels of hostility and stress, and have low levels of action flexibility under such circumstances. However, in this study, it was found that group therapy based on stages of change increases the functional flexibility of drug addicts.

It should be said that since group therapy intervention based on the stages of change in drug addicts stops the old pattern of intolerance behavior and leads to the beginning of new behavior, based on motivation to change the person and makes people with the ability to be flexible, more stubborn to actively participate in the process of improving the situation; And because in this treatment, small changes in flexibility are rewarded and strengthened, the level of internal resistance increases. Since group therapy was performed in this protocol, individuals received appropriate feedback from their problem and learned that they can be responsible for their actions, and have deep action resilience in dealing with their problems. Also, effective communication and quitting techniques helped drug addicts to recognize their signs of intolerance; And by mastering their active role in moderating the problems and stressors of the addiction situation, they increase the internal and active resistance to their problems and in these people, the struggle, the sense of responsibility and purposefulness increased, and the state of isolation and helplessness in the face of problems decreased.

As a result, it can be said that group therapy based on the stages of change in drug addicts who are in the stage of preparation led to the identification of resilience to problems and challenges, and in this treatment, people stubbornly motivated to build and repair themselves and with the introduction of the practical program development technique, the action flexibility of individuals increased. As a result, change-based group therapy is effective in increasing the action flexibility of drug addicts and can be effective in improving resilience along with detoxification therapies.

The second hypothesis of the study was that "group therapy based on stages of change is effective on the metacognitive beliefs of addicts dependent to opioids."

According to the results of Table (4-10), it was found that by pre-test control between drug addicts in the experimental group and the control group in terms of positive beliefs about anxiety, beliefs about uncontrollability, low cognitive confidence, the need to control thoughts and there is a significant difference in cognitive awareness. In other words, group therapy based on stages of change, due to the mean metacognitive beliefs of drug addicts in the experimental group compared to the mean of the control group, reduced the metacognitive beliefs of the experimental group. Therefore, the second hypothesis of the research was confirmed.

The result of this research hypothesis with (13,14) research which showed in a study that treatment based on stages of change in the experimental group reduces the irrational beliefs of drug addicts. (15) concluded that group-based change-based therapy significantly reduces dysfunctional attitudes and (16) in a study showed that group therapy based on stages of change leads to positive beliefs about anxiety, uncontrollability, low cognitive confidence, the need to control the thoughts and cognition of drug addicts; And group therapy based on stages of change has a great effect on reducing the metacognitive beliefs of drug addicts.

Explaining the result of the second hypothesis of the research, it can be said that addicts with drug abuse have negative dysfunctional and metacognitive beliefs about recovery due to the deterioration of mental and physical condition and complete emotional incoherence. According to the theory of self-regulatory

executive action, patients' psychological disorders persist when irrational beliefs arise from a person's metacognitive knowledge and are activated and processed in problematic situations. However, in this study, it was found that group therapy based on stages of change is effective in reducing the metacognitive beliefs of drug addicts.

It can be reported that, group therapy based on the stages of change in addicts who are in the stage of preparation and maintenance, reduces the consequences of negative thinking about the inability to fully recover by providing techniques related to controlling disturbing thoughts and providing problem-solving techniques. Group therapy based on the stages of motivational change in these people, by providing increased individual efficiency, positive reinforcement and a strong sense of self-control, changed the focus of addicts to their negative mind; And by establishing the person's calmness in the situation, it caused these people to have positive attitudes, positive feelings and high awareness of their relatively healthy current situation, considering their physical and mental condition; And due to the group implementation of treatment and similar feedback from patients to each other caused patients to perceive more appropriate beliefs of their own ability in society. As group members took on the role in which they had difficulty, actively played their role, and received reinforcements and feedback, and appropriate training was provided to these patients, it caused addicts to the metacognitive beliefs that led to show less persistence of worries; And reduced addicts' negative self-assessments, experiences of negative emotions such as anxiety and depression, uncontrollable situations, and negative beliefs. Moreover, self-acceptance beliefs, goals as well as personal growth increased, and this treatment, based on the creation and growth of motivation, caused the reduction of intellectual occupations along with the concern of self-criticism.

Conclusion

Group therapy based on the stages of change of preparation and maintenance in drug addicts according to the presentation of techniques causes the person to discover an innate talent for change in themselves; And causes these people to receive internal motivation, to consider themselves responsible for changing the state and reduces beliefs about worrying about losing their recovery time, severe anxiety caused by negative and relatively uncontrollable thoughts and perceptions, low cognitive confidence, the need to control thoughts and cognition. As a result, it can be stated that group therapy based on the stages of change reduces the metacognitive beliefs of drug addicts and this therapeutic approach is effective in reducing the psychological damage of addicts.

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Tables

Table 1: Results of multivariate analysis of covariance on the mean scores of post-tests of flexibility of action and metacognitive beliefs of experimental and control groups with pre-test control

Test name	Effect size	p	F	DF error	DF hypothesis	amount	Statistical power
Pillai's effect test	0.94	0.001	520.60	17	6	0.94	1
Wilkes Lambda test	0.94	0.001	520.60	17	6	0.05	1
Hotelling effect test	0.94	0.001	520.60	17	6	18.56	1
Roy's Largest Root test	0.94	0.001	520.60	17	6	18.56	1

Table 2 : Results of one-way analysis of covariance in MANCOVA text on the mean scores of action flexibility and metacognitive beliefs of experimental and control groups with pre-test control

Variable	Effect size	p	F	Average squares	DF	Total squares	Statistical power
Action flexibility	0.78	0.001	79.02	3015.22	1	3015.22	1
Positive beliefs about worry	0.86	0.001	139.87	402.58	1	402.58	1
Belief about uncontrollability	0.75	0.001	69.09	261.77	1	261.77	1
Low cognitive confidence	0.78	0.001	79.36	297.16	1	297.16	1
Need to control thoughts	0.86	0.001	138.11	231.32	1	231.32	1
Cognitive awareness	0.87	0.001	150.72	249.08	1	249.08	1