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Effectiveness of Cognitive-Behavioral Therapy on Reducing Impulsive Behaviors, Alexithymia, and Despair in Depressed Patients at Counseling Centers in Ahvaz

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Abstract

Background: *Depression is one of the most prevalent mental disorders that severely affect activities and mental health. The present study aimed to investigate the effectiveness of cognitive-behavioral therapy (CBT) on reducing impulsive behaviors (IBs), alexithymia, and despair in depressed patients at counseling centers in Ahvaz.*
Methods: *The research method was quasi-experimental with a pre-test, post-test, and one-month follow-up design, and a control group. The study population comprised all patients with depression who were referred to the counseling centers of Ahvaz in 2019. The sample consisted of 30 patients with depression selected by convenience sampling and divided into experimental and control groups (n=15 per group). The experimental group underwent twelve sessions (90-minutes sessions per week) of cognitive-behavioral therapy. The research instruments included the Barratt impulsiveness scale (BIS), the Toronto Alexithymia scale (TAS-20), and the Miller Hope scale (MHS). The follow-up was performed after 30 days. Data were analyzed using multivariate analysis of covariance (MANCOVA).*
Results: *The results showed that cognitive-behavioral therapy (CBT) reduced impulsive behaviors (IBs), alexithymia, and despair in the experimental group of depressed groups compared with the control group in the post-test and follow-up (Pvalue=0.0001).*
Conclusions: *CBT can be used at counseling centers for better treatment of IBs, alexithymia, and despair in depressed groups.*

Keywords: Cognitive-behavioral therapy, Impulsive behaviors, Alexithymia, Despair, Depression.
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Introduction

Depression is one of the most widespread causes of mental disorders. A report by the world health organization states that depression is the fourth most important health problem in the world. Depression afflicts 320 million people around the world and inflicts a high socioeconomic cost to society. The WHO report also estimates that depression is the second major cause of the disease after heart disease.[1,2] Clinical observations of depressed people suggest that they are better at perceiving things that are compatible with their depressed mood and focus on negatives.[3] They pay more attention to criticisms and rebukes from others, recollect the negative experiences of the past, and more frequently exhibit IBs.[4] Behavioral impulsivity (BI) in depressed people leads to cognitive disorder, lower attention, less planning, cognitive inhibition, and slow decision-making. The BI literature suggests that IB is central to many mental and mood disorders.[5] BI has a multidimensional structure that leads to attachment to the present, inability to delay rewards, behavioral disinhibition, risk-taking, sensation-seeking, sensitivity to reward, impatience, and poor decisions, which are important factors for the incidence of depression. It should be noted that impulsivity is an unconscious risk-taking that leads to mood disorders.[6]

Depressed patients also suffer from emotional problems caused by their inability to express emotions or alexithymia. Alexithymia is a specific emotional-cognitive disorder in mental function caused by automatic inhibition of information and emotions.[7,8] Alexithymia leads to recognition inability to recognize and verbally describe personal emotions, severe poverty of abstract thoughts, and revealing feedbacks, emotions, inclinations, and drives. The inability to use emotions, which are signs of emotional problems, poor dream recollection, difficulty in discriminating between emotional states and physical senses, a formal and inanimate expression, lack of facial emotions, and limited capacity for sympathy and self-awareness, can affect the individual's function and cause cognitive disorders.[9]

The expectancy of depressed individuals is affected by emotional problems. Perception of despair increases the sorrow and dissatisfaction caused by problems and can increase the resulting tension.[10] Depressed patients perform very poorly in foreseeing a good and happy state and see no purpose in life, and despair creates a sense of helplessness. Despair inhibits them from imagining better days ahead or accepting their totality, having a healthy life, and getting rid of troubles.[11]

Non-pharmaceutical therapies can greatly reduce IBs, alexithymia, and despair in depressed patients. One such intervention is cognitive-behavioral therapy (CBT).[12] Gautam et al.[13] showed that CBT is an effective treatment. This method breaks the problematic cycle of the disorder and the therapeutic environment and encourages the individuals to search for the relationship between negative thoughts and the sense of self-inadequacy. The therapist tries to encourage the patients to cooperate to use their experience in a series of behavioral tests and evaluate whether those beliefs are true or false.[14] This treatment adjusts stable factors of psychological and physical problems, including behavioral factors such as disorganized plans, bad habits, and psychological factors such as unrealistic expectations, anxiety, and harmful beliefs, and physiological factors such as mental tensions and excitement. This treatment has an educational approach that trains cognitive-behavioral techniques with confrontational exercises, cognitive

restructuring, and homework assignments; and the treatment is a logical approach since it teaches individuals to consider their thoughts and beliefs as hypotheses that should be verified, and to reduce cognitive and emotional problems.[15,16]

Depressed individuals are in extreme despair due to emotional, cognitive, and mood problems, and the cognitive problems arising from the disease increase their IB and alexithymia, which can disrupt and negatively affect depression therapy. Considering the incidence of depression, the concern is to effectively improve these patients' quality of life and cognitive state. Therefore, therapists try to evaluate the effect of a useful intervention that can reduce their problems and be followed by successful treatment, which can positively influence the treatment process. Accordingly, this study aimed to investigate the effectiveness of CBT on reducing IBs, alexithymia, and despair in depressed patients at counseling centers in Ahvaz.

Materials and Methods

The research method was quasi-experimental with a pre-test, post-test, and one-month follow-up design, and a control group. The population for the present study consisted of all the depressed groups who visited counseling centers in Ahvaz from 2019 to 2020. The data were collected from health centers, 30 depressed groups were selected using convenience sampling, and 15 patients were randomly assigned to each of the experimental group (CBT) and the control group. Before the intervention, depressed groups in each group were pretested for IBs, alexithymia, and despair. After cognitive-behavioral sessions on the experimental and the control group and post-tests for IB, alexithymia, and depression, the difference between the pretest and the post-test was evaluated to assess the intervention's effectiveness.

The Barratt impulsiveness scale (BIS): The BIS was devised by Barratt in 1994. It contains 30 items used to assess three subscales, namely attentional, motor, and non-planning. The goal is to evaluate individuals' IBs. The items that evaluate these three subscales are as follows. Attentional impulsiveness assesses making quick cognitive decisions and items 1 to 10 of the subscale measure tolerance of complexity and strength. Motor Impulsiveness includes actions without thinking, and questions 11 to 20 of this subscale measure tendency to act instantly under pressure. The third dimension is non-planning and is defined as an arbitrary direction or lack of foresight. This quantitative subscale measures one's attitude toward the future, and the items for this subscale include questions 21 to 30. The questions for this questionnaire were set according to the Likert scale and scored from 1 (nonexistent) to 4 (very high). Javid et al.[17] reported an alpha Cronbach coefficient of 0.77 for the scale. In the present study, Cronbach's alpha coefficient was 0.82 for the scale.

The Toronto Alexithymia scale (TAS-20): TAS-20 evaluates three subscales of difficulty in identifying emotions, describing emotions, and extrinsic thinking. The first subscale contains 7 items that measure the participant's ability to identify emotions and separate them from physical senses. The second subscale has 5 items that measure the ability to express emotions and whether the participant can verbally state their emotions. The third subscale has 8 items and evaluates introspection and deepening internal emotions of the self and others. This test is scored from 1 (completely disagree) to 5 (completely agree) according to the Likert scale, and the only items scored in reverse are items, [4,10,18] and.[19] Roshani et al.[18] reported an alpha Cronbach coefficient of 0.80 for the scale. In the present study, Cronbach's alpha coefficient was 0.87 for the scale.

The Miller Hope scale (MHS): This study used the Miller and Powers in 1988 scale to measure despair. This scale consists of 48 questions that represent the state of expectancy or despair and the items are chosen according to the explicit or implicit behavioral representation in hopeful or despairing individuals. The items are scored from 1 (completely disagree) to 5 (completely agree) and scores may range from 48 to 240. An individual who obtains a score of 48 is considered to be incomplete despair, and obtaining a maximum score of 240 represents maximum hopefulness. Pourabdol et al.[19] evaluated its reliability as 0.91. In the present study, Cronbach's alpha coefficient was 0.85 for the scale.

This study used Michael Free's cognitive-behavioral intervention and Douglas's practical guide to CBT on the experimental group over twelve 90-minute sessions. Table 1 presents a summary of the sessions.[20]

Data were analyzed by descriptive and inferential statistics, such as mean, standard deviation, Kolmogorov-Smirnov, Levene, Box's M tests, and multivariate analysis of covariance (MANCOVA). SPSS version 21.0 was used to analyze the data.

Results

Table 2 presents the mean and standard deviations (SD) of the pre-test, post-test, and one-month follow-up scores of impulsive cognitive behaviors, impulsive motor behaviors, impulsive unplanned behaviors, alexithymia, and despair, for the experimental and control groups.

The normality hypotheses, equality of variance, and homogeneity of covariance were respectively tested using the Kolmogorov-Smirnov, Levene, and Box's M tests. Moreover, the interaction between the pretest and the independent variables was evaluated to test the homogeneity hypothesis of the regression slope. Since none of the research variables in the stated tests were significant, the test hypotheses were observed. The research hypotheses were tested using ANCOVA and MANCOVA analysis. Table 3 shows the MANCOVA results on research variable scores in depressed patients at Ahvaz health centers in the experimental and control groups and the post-test and follow-up. According to table 3, all tests in the post-test and follow-up stages were significant (Pvalue=0.001). This suggests that there was a significant difference between test averages in at least one of the scores of IBs, alexithymia, and despair in depressed patients at Ahvaz counseling centers in the experimental and control groups and the post-test and follow-up stages

One-way analysis of covariance in MANCOVA context was used (table 4) to further investigate the averages for IBs, alexithymia, and despair in depressed patients at Ahvaz counseling centers in the experimental and control groups and the post-test and follow-up stages. According to table 4, the F-value for the effect of CBT on reducing impulsive cognitive behaviors, impulsive motor behaviors, impulsive unplanned behaviors, alexithymia, and despair in depressed patients at Ahvaz counseling centers were respectively 125.69, 64.79, 74.78, 111.80, and 123.90 in the post-test, and 66.31, 43.66, 140.24, 496.21, and 165.98 in follow-up, which was all statistically significant (Pvalue=0.001). Therefore, there was a significant difference between the research variables of the experimental and control groups in the post-test, and the averages reported in table 1 suggest that this difference was in favor of the experimental group and these differences remain in the follow-up stage.

Table 1. Summary of CBT sessions

Sessions	Description
1	Reviewing and evaluating pre-therapy homework assignments, greeting, an overview of the structure of sessions, relevant rules and regulations, and exercises: Meeting each other, thinking and emotions, absolute beliefs about the self and others, standards devised for the self and others, the suitcase allegory for CBT stages, and exercises: Relaxation with guided imagery, homework assignment for the next session
2	Reviewing the previous session's homework assignment, the emotional disorder theory, the relationship between thinking and mood, 10 cognitive errors, consciousness exercise, what are negative automatic thoughts and how are they identified? How to change our emotions? And four steps for a happier life, relaxation through guided mental imagery, and homework assignment for the next session
3	Reviewing the previous session's homework assignment, a brief overview of the topics discussed in the previous session, ten techniques for healthy thinking, homework assignment, relaxation through guided mental imagery
4	Reviewing the previous session's homework assignment, harmful interpretations and fears, various types of idealism, the vertical arrow technique, the three-part plan for achieving healthier interpretations, relaxation through guided mental imagery, homework assignments for the next session
5	Reviewing the topics discussed in the previous session, evaluating the previous session's homework assignment, the share of underlying factors that reveal BI, and homework assignment for the next session
6	Reviewing the topics discussed in the previous session, behavior modification guidelines, relaxation through guided mental imagery, homework assignments
7	Reviewing the topics discussed in the previous session, evaluating the previous session's assignments, coping with destructive thoughts, recording thoughts and its guidelines, relaxation through guided mental imagery, homework assignment
8	Reviewing the previous session's topics, evaluation of the previous session's assignments, problem-solving skills, improving attitude toward problems, utilizing problem, solving skills, relaxation through guided mental imagery, homework assignments
9	Reviewing the previous session, evaluating the previous session's assignments, 5 keys to cordial communication, three hearing techniques, two self-assertion techniques, how to establish better communication, homework assignments, relaxation through guided mental imagery, homework assignments
10	Reviewing the previous session's topics, evaluating the previous session's assignments, control and stress, mind and stress, behavior, adapting to stress, countering stress, relaxation through guided mental imagery, homework assignments
11	Reviewing the previous session's topics, evaluating the previous session's assignments, controlling stress and ineffective behavior, cognitive techniques, cognitive-behavioral techniques of emotional control, homework assignments
12	Emotion and behavior management, incompatible response techniques, relaxation through breathing, conclusion and presenting solutions, post-test, and arranging follow-up and post-therapy evaluation

Table 2. Mean and standard deviation of the variables in experimental and control groups in pre-test, post-test, and follow-up

Dependent variable	Phase	Experimental group	Control group
		M±SD	M±SD
Impulsive cognitive behaviors	Pre-test	31.53±2.97	30.66±4.04
	Post-test	19.60±2.38	32.00±3.01
	Follow-up	20.40±1.29	29.06±3.69
Impulsive motor behaviors	Pre-test	34.06±2.81	29.73±3.26
	Post-test	18.46±2.16	30.86±3.68
	Follow-up	17.60±4.18	30.46±3.46
Impulsive unplanned behaviors	Pre-test	31.80±3.40	31.33±3.37
	Post-test	17.13±4.71	32.46±3.15
	Follow-up	16.73±3.41	33.06±2.98
Alexithymia	Pre-test	80.66±6.57	80.26±4.26
	Post-test	35.20±8.65	77.46±6.36
	Follow-up	29.33±5.89	80.33±4.02
Despair	Pre-test	79.66±7.88	69.60±6.03
	Post-test	173.33±15.55	70.26±5.44
	Follow-up	149.27±16.85	71.33±3.82

Table 3. Results of multivariate analysis of covariance on the scores of research variables in experimental and control groups

Phase	Variable	Value	df	Error df	F	Pvalue	η^2	Power
Post-test	Pillais trace	0.97	5	19	148.55	0.001	0.97	1.00
	Wilks Lambda	0.02	5	19	148.55	0.001	0.97	1.00
	Hotelling's trace	39.09	5	19	148.55	0.001	0.97	1.00
	Roy's Largest root	39.09	5	19	148.55	0.001	0.97	1.00
Follow-up	Pillais trace	0.98	5	19	199.06	0.001	0.98	1.00
	Wilks Lambda	0.02	5	19	199.06	0.001	0.98	1.00
	Hotelling's trace	52.38	5	19	199.06	0.001	0.98	1.00
	Roy's Largest root	52.38	5	19	199.06	0.001	0.98	1.00

Discussion

The present study aimed to investigate the effectiveness of cognitive-behavioral therapy (CBT) on reducing impulsive behaviors (IBs), alexithymia, and despair in depressed patients at counseling centers in Ahvaz. The results suggest that there was a significant difference between depressed groups in the experimental and control groups regarding impulsive cognitive behavior, impulsive motor behavior, impulsive unplanned behavior, alexithymia, and despair, and CBT significantly reduced impulsive cognitive, motor, and unplanned behaviors, alexithymia, and despair in the experimental group's depressed patients. The follow-up results showed that CBT had a continuous effect on reducing impulsive cognitive, motor, and unplanned behaviors, alexithymia, and despair in depressed patients of the experimental group was continuous. This finding is consistent with the research results of Gautam et al.[13], Lopez and Basco,[21] and Tajeri.[22]

To explain the results, depressed groups are in a poor cognitive, behavioral, and emotional state due to their illness. This study determined that CBT reduces IBs, alexithymia, and despair of depressed groups. It is noteworthy that CBT increased recovery and behavioral health in these patients by empowering them in behavioral-mental aspects, and the recognition of CBT and its testing allowed patients to verify the dimensions of these problems in risky and impulsive behaviors. In this treatment, the patients learned to control their recognitions, emotions, and reactions to an intense desire to a particular action by strengthening their behavior and modifying their communicative patterns so that they may refrain from risky behaviors with unforeseen consequences, and the intervention reduced hasty, unplanned, inconsiderate, and impulsive cognitive, motor, and unplanned behaviors in depressed groups.[23] Due to their perception of mental challenges, conflicts, and stress-inducing conditions, depressed patients face great difficulty in expressing their emotions. They also have disorganized emotions and a sense of despair.

CBT stopped the pattern of inability to express emotions and allowed individuals to control their emotions according to their incentive to change and empowered patients to better express their emotions and to be more active in the treatment process.[24] Since this treatment rewarded and strengthened minor changes, the perception and expression of patient's emotions and perception of others' emotions grew and brought peace and hope to patients despite mental pressures. By emphasizing consciousness and relaxation through breathing, this treatment protocol gave patients the understanding that they can monitor, supervise, control, and evaluate their negative emotions. It also increased self-adjustment, the problem-oriented resolution to emotions, and hope; and limited excitement through the anger control technique in patients unable to recognize and verbally describe their emotions and with severe poverty of symbolic thought, emotion, and inclination. The patients were more open to emotionally challenging conditions and became less despairing.[25] Therefore, CBT changes the cognitive-behavioral pattern and emotions of depressed patients to reduce IBs and risky decisions, the inability to use emotions, difficulty in distinguishing emotional states and physical senses, and the lack of emotional expressions.

CBT reduced impulsive cognitive behaviors, impulsive motor behaviors, impulsive unplanned behaviors, alexithymia, and despair in depressed patients. Hence, CBT was effective in reducing depressed patients' IBs, alexithymia, and despair, and can be used as a practical treatment for depressed patients.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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