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Original Article

The effectiveness of treatment based on acceptance and commitment to reduce rumination and worry about body image of the elderly with depression

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Abstract

Introduction: The main purpose of this study was to determine the effectiveness of Acceptance and Commitment Therapy (ACT) in reducing rumination and anxiety about the body image of the elderly with depression.

Materials and Methods: The statistical population of the study was all the elderly with depression in the welfare centers of Shiraz city, Iran. By simple random sampling, 30 cases were selected and were divided randomly into two experimental and control groups. In the intervention phase, the experimental group received acceptance and commitment treatment for 8 sessions. During this period, the control group did not receive any intervention. To collect the data, body image scale, Beck Depression Inventory- second edition and ruminative response scale in pre-test and post-test stages were used for both experimental and control groups. Research data were analyzed by descriptive statistics, multivariate analysis of covariance, and SPSS.21.

Results: The results of analysis of covariance showed a significant difference between the two groups in terms of rumination components and worry about body image ($P< 0.05$).

Conclusion: The findings showed that acceptance and commitment therapy reduces rumination and worry about body image of the elderly with depression.

Keywords: Acceptance and commitment therapy, Body image, Elderly, Rumination

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Introduction

Depression is one of the most prevalent mental disorders (1). The growing prevalence of this disorder has become a global concern and is estimated to become the second most common illness in the world by 2020 (2). Mental health behavioral researchers believe that, according to international statistics, between 15% of people aged 15 to 74 years who visit a physician have significant symptoms of depression, such as an inability to think, concentrate, or make decisions. In addition, they have a negative body image, develop cognitive conflict, control their thoughts, and are more likely to develop distractions or memory problems (3). A review of previous research shows that more than 32% of the elderly suffer from clinical depression at least once (4). One of the unpleasant consequences of depression is the reduction of positive metacognitive beliefs such as cognitive self-awareness and reduced quality of life (5).

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Depression also predicts cognitive conflict, rumination, and body image anxiety (6). This concern is an important issue in terms of research and theorizing because many of its processes are involved in many other psychological disorders (4). Body image means the internal representation of the external appearance of a person, which includes the physical, perceptual dimensions, and attitudes towards them. In contrast, the incorrect and frustrating image of the appearance causes the feeling and perception in the person under the name. On the other hand, other evidence suggests that rumination is associated with depression (7,8). A ruminant is a person's mood in response to anxiety and includes a repeated and passive focus on distressing symptoms, causes, and consequences of these symptoms (9). It may also be used to deal with negative moods, but it often leads to other mood swings (8). According to the Nolen-Hoeksema style response theory, mental rumination is repetitive thoughts about the cause and consequences of depression and negative emotional symptoms that a person has recently experienced (10). Ruminant response style is an anxiety response in which a depressed or anxious person frequently and passively focuses on anxiety symptoms and their causes and consequences. These thoughts enter the consciousness involuntarily and divert the individual's attention from the current issues and goals and focus on the feeling of anxiety and its causes and consequences (11).

Different theories have been proposed to explain the causes of depression. From a clinical point of view, depression is a symptom dominated by depressed mood and is expressed based on the verbal or non-verbal expression of sad, anxious emotions or states of arousal (12). Various therapeutic approaches are used to reduce or eliminate depression and its symptoms. Cognitive-behavioral therapies, especially the Acceptance and Commitment Therapy (ACT) approach, are being used as an effective treatment to reduce and reduce depressive symptoms (13). ACT is one of the third waves of behavioral therapies introduced by Steven Hayes and colleagues in the early 1980s and is known by the acronym ACT (14). ACT is essentially a behavioral therapy that is the subject of an action, but not every action, but a primarily value-oriented action. This therapeutic approach helps clients recognize what is important to them and then asks them to use these values to guide behavioral changes in life. The second is a conscious action, which is done with full awareness and presence, being open to experience and full participation in what is being done (15). This type of treatment tries to increase a person's psychological acceptance of his/her mental experiences and reduce it in the face of ineffective control actions (16). In general, the treatment based on acceptance and commitment focuses on changing and modifying the person's relationship with his/her thoughts (1). A study examined the effectiveness of ACT on reducing body image anxiety and rumination in depressed elderly and concluded that this treatment significantly reduces body image anxiety and rumination (17). Another study showed that ACT treatment significantly reduced body image anxiety in depressed elderly. However, some other studies have shown that ACT has no significant effect on changing the level or reducing body image concerns (18). Jansen and Morris, in their study, showed that ACT treatment reduces the level of rumination in depressed elderly (19). However, the results of other studies contradict the results of the above studies have shown that ACT treatment has no significant effect on reducing depressive and anxiety symptoms such as rumination (20) and body image anxiety (18). It seems that ACT treatment is effective in treating depression and symptoms of this disorder. Therefore, the present study investigated the effectiveness of ACT in rumination and concern about the body image of depressed elderly patients.

Materials and Methods

The statistical population of this study included all the elderly with depression in the welfare centers of Shiraz city, Iran. Thirty people were randomly selected, and were randomly assigned to the control group and the experimental group. Inclusion criteria included aged over 60 years, obtaining a score higher than the cut-off point of the depression test (higher 10), not having debilitating diseases and chronic heart and respiratory disease, not participating in other treatment programs at the same time, being literate satisfaction for participating in the research. The exclusion criteria were unwillingness to continue the intervention, absence of more than two sessions in the intervention sessions, and lack of cooperation in the research process.

First, the necessary coordination and administrative correspondence were done through Shiraz University with the social deputy of Shiraz Center Welfare Organization, then by referring to the nursing home under the auspices of the relevant department, the officials were justified in conducting the research. Thirty elderly people were randomly selected from among the welfare centers in Shiraz (the elderly who received high scores (cut-off point 10) and interviewed clinically). The subjects were randomly assigned into two groups: 15 cases in acceptance and commitment-based treatment (experimental group) and 15 cases in the waiting list (control group). Then, both groups completed the rumination scale and the physical image concern questionnaire in the pre-test phase. Two weeks after intervention, both groups were evaluated.

Research instruments

A) Beck Depression Inventory Second Edition (BDI-II): This questionnaire was developed by Beck in 1963 to measure the severity of depression and was revised in 1994. This scale is a 21-item self-report questionnaire used to assess the severity of depression, determine the symptoms of depression in psychiatric patients, and general population. The scores are based on the Likert scale of 4 options (0-3). The scores are finally ranged 0 to 63. Psychometric studies performed using this questionnaire showed good validity and reliability. Beck et al. reviewed the studies that used this tool and found that its validity coefficient using the retest method varied from 0.48 to 0.86 depending on the distance between the times of execution and the type of test population. In 1996, Beck et al. obtained a one-week test-retest coefficient equal to 0.93 (21). Various studies have been conducted on the validity of the Beck Depression Inventory. Another study reported an internal correlation of this scale with Cronbach's alpha coefficient of 0.93 and its retest validity of 0.93 (22). Also, in another study, the reliability of the questionnaire was obtained using Cronbach's alpha coefficient of 0.79 (23). Finally, the reliability of the questionnaire was obtained using Cronbach's alpha coefficient of 0.82.

B) Structured clinical interview based on DSM-IV-TR: Although structured interview based on DSM-5 is also available to specialists in recent seals, considering that DSM psychometric indices, including its reliability and validity, are currently under revised version IV in Iran. Sharifi et al. (24) conducted this interview after translation into Persian on a sample of 299 people. The diagnostic agreement was moderate or good for most specific and general diagnoses (kappa above 60). This interview is used to diagnose the major depressive disorder and distinguish it from other disorders.

C) Fisher Body Image Scale (FBIS): The body image questionnaire was developed by Fisher in 1979. It has 46 items. Each substance has a value between 1 and 5 (very dissatisfied= 1, dissatisfied= 2, partially satisfied= 3, satisfied= 4, and very satisfied= 5). The calculated correlation coefficient of the test in the first and second performance by Pearson method was 0.81 for first-year students, 0.84 for second-year students, 0.87 for third-year students, and 0.84 for all students (25). In Khazai and Nazarpour research, the reliability and validity of the body image questionnaire were calculated by three methods: Cronbach's alpha, Spearman-Brown coefficient, and Guttmann halving coefficient, which were equal to 0.91, 0.86, and 0.86, respectively (26).

D) Ruminative Response Scale (RRS): This 10-item scale is developed by Treynor et al. through removing 12 items of the Nolan-Hoeksema RRS version (22 items). This scale is scored through a four-point Likert degree of 1 (rarely) to 4 (almost always). It includes two sub-scales (depressive brooding and reflective pondering). In this scale, five questions (1 - 3 - 5 - 9 and 10) measure the reflection subscale, and five questions (2 - 4 - 6 - 7 and 8) measure brooding. Also, the validity of this scale and its subscales, by internal consistency method (Cronbach's alpha), were reported to be 0.85, 0.80, and 0.76, respectively (27). In addition, this scale has good internal validity and high predictor validity (28). Mansouri et al. reported the validity of the 22-item version of the Nolan-Hoeksema RRS version from which the current scale of Treynor et al. (2003) is derived as 0.90 (29). In the present study, the validity of this scale and its subscales by internal consistency method were 0.85, 0.73, and 0.82, respectively.

R) Acceptance and Commitment Therapy Training: In acceptance and commitment therapy, a set of empirical exercises and metaphors are combined with standard behavioral interventions to cultivate acceptance without judgment of therapeutic experiences

(14). This empirical acceptance is not an end but is associated with promoting action toward appropriate personal goals. In the ACT treatment program, which was conducted in 8 sessions, the objectives of the sessions were as follows: Session 1: Introducing the treatment, discussing the limits of confidentiality, informed consent of the clients to complete the treatment process, general evaluation, and familiarity with the concept of creative frustration. Session 2: Examining homework, creating creative frustration, and discussing mental experiences. Session 3: Reviewing the experiences of the previous session, introducing the concept of control as a problem, not the solution, familiarity with the concept of willingness-acceptance, behavioral commitment. Session 4: Reviewing the experiences of the previous session, behavioral task, and commitment, introducing the concept of cognitive faulting, applying cognitive faulting techniques. Session 5: Reviewing the assignments of the previous session, showing the separation between oneself, inner experiences and behavior, and familiarity with the concept of cognitive fusion. Session 6: Performance appraisal, application of mindfulness techniques, the contradiction between experience and mind, learning to experience inner experiences as a process. Session 7: Introducing the concept of value, discovering the practical values of life, measuring performance. Session 8: Increase focus on behavioral commitments, performance commensurate with values.

Descriptive statistics (mean and standard deviation) and inferential statistics (Levene test, one-way analysis of variance, univariate analysis of covariance, and multivariate analysis of covariance) were used to analyze the data.

Results

The participants were aged 67.15 ± 0.52 years with a range of 60 to 75 years. Table 1 presents the mean and standard deviation of the scores of the variables in the post-test and pre-test phases.

Table 1. The descriptive scores of the experimental and control groups

Group		Control				Experimental			
Phase		**Pre-test**		**Post-test**		**Pre-test**		**Post-test**	
Variable		M	SD	M	SD	M	SD	M	SD
Rumination	Depressive brooding	18.12	3.52	19.21	3.36	18.41	4.95	11.52	3.31
	Reflective pondering	19.46	4.52	19.31	4.43	18.57	4.69	10.17	3.95
Concerns about body image		117.43	7.21	116.30	8.31	115.89	8.51	70.31	4.63

According to Table 1, the highest mean score in the pre-test and post-test of the control group for the variable of body image anxiety (117.43 and 116.20) and the lowest mean for the variable of depressive brooding (18.12 and 19.21).

The highest mean in the pre-test and post-test of the experimental group for the variable of body image anxiety (115.89 and 70.31) and the lowest mean for the variable of depressive brooding and reflective pondering (18.41 and 10.17).

One of the assumptions made in multivariate analysis of covariance (MANCOVA) is the assumption that the distribution is normal using the Kolmogorov-Smirnov (K-S) test.

Table 2. The normality of the distribution of variables

Variable		Group	K-S	P
Rumination	Depressive brooding	Control	0.92	0.361
		Experimental	0.85	0.301
	Reflective pondering	Control	0.76	0.199
		Experimental	0.80	0.257
Concerns about body image		Control	1.02	0.671
		Experimental	2.52	0.704

Regarding the findings of Table 2, the level of significance obtained in the K-S test, in most of the research variables by group, is more than the criterion value of 0.05. Therefore, it can be said that the distribution of the studied variables in the statistical sample is a normal distribution, and we can test the research hypotheses through parametric tests. Multivariate analysis of covariance (MANCOVA) was used to analyze the data related to the differences between the control and experimental groups in anxiety components of body image and rumination. Before applying the multivariate analysis of variance test, its hypotheses were tested by Box test, Wilkes lambda test, and Levene test. For this purpose, the Mbox test was used to examine the default homogeneity of the variance-covariance matrix of body image concern and rumination components in the study groups.

Table 3. Mbox results for investigating the assumption of homogeneity of the variance-covariance matrix in rumination components and body image concerns

Variable	Mbox	F	P
Rumination	6.022	1.01	0.401
Concerns about body image	8.389	1.96	0.704

Table 3 shows the significance level of *P*> 0.05, which indicates the condition of homogeneity of the variance-covariance matrix for rumination components (F= 1.01 and *P*> 0.05) and body image concern (F= 1.96 and *P*> 0.05) are well observed.

Table 4. Levene test results to examine the presumption of equality of variances of rumination components and body image concerns

Variable	F	df1	df2	P
Depressive brooding	5.028	1	58	0.214
Reflective pondering	2.089	1	58	0.145
Concerns about body image	2.630	1	58	0.136

The results of Table 4 showed that the variances of body image concern in depressive brooding and reflective pondering are equal in the two groups and are not significantly different from each other, which shows the reliability of the following results. Furthermore, the Bartlett sphericity test result is statistically significant because the null hypothesis that uncorrelated data is rejected, and the opposite hypothesis based on the correlated data is confirmed. This test showed that the observed correlation matrix belongs to a society with correlated variables. Therefore, analysis of variance and covariance can be performed.

Table 5. Results of MANCOVA analysis on the mean of research components

Test	Value	F	DF Hypothesis	DF error	P	Eta squared	statistical power
Pillais Trace	0.906	16.852	3	12	0.001	0.673	1.000
Lambda Wilks	0.520	16.852	3	12	0.001	0.673	1.000
Hotelling's Trace	2.645	16.852	3	12	0.001	0.673	1.000
Roy's largest root test	2.785	16.852	3	12	0.001	0.673	1.000

As seen in Table 5, the significance levels of all tests indicate that acceptance and commitment-based therapy, at least in terms of one of the dependent variables (rumination components and body image concern), is the average of the experimental group. Compared to the control

group in the post-test stage (*P*= 0.001, F= 16.852). To find the difference, the results of MANCOVA analysis are presented in Table 6, which has an impact or difference of 67% of in the scores of rumination components and body image concerns on the impact of a group membership. The statistical power close to one also indicates the adequacy of the sample size.

Table 6. The multivariate analysis of variance about the rumination and body image concern

Variable	SS	DF	MS	F	P	Eta squared	statistical power
Depressive brooding	156.03	1	156.03	16.89	0.001	0.632	1.000
Reflective pondering	142.96	1	142.96	17.36	0.001	0.657	1.000
Concerns about body image	589.07	1	589.07	49.11	0.001	0.695	1.000

As shown in Table 6, after eliminating the effect of synchronous variables on the dependent variable and calculating to the coefficient F, it is observed that between the adjusted means, there were significant differences in the scores of the rumination components and body image concern in the experimental and control groups in the post-test phase (*P*< 0.05).

Therefore, ACT affected the rumination components and concern about body in the experimental group.

Table 7. Parallel comparisons of group means in dependent variables

Group		Variable	Difference between the means	Estimation error	P
ACT	Control	Rumination	12.65	0.57	0.01
ACT	Control	Concerns about body image	15.11	0.89	0.01

The contents of Table 7 show that the acceptance and commitment therapy reduced rumination and concern about the body image of depressed elderly.

Discussion

The present study assessed the effectiveness of acceptance and commitment therapy in rumination and anxiety about the body image of the elderly with depression. The findings indicated that acceptance and commitment-based therapy reduced anxiety about body image and rumination of the experimental group compared to the controls. These findings support the conducted studies (19,30-32). The findings are inconsistent with the results of the studies (2,15,20). To explain the findings, it can be said that in acceptance and commitment therapy, cognitive methods such as evaluation and familiarity with concepts such as anxiety and frustration are used to improve cognitive distortions and beliefs related to body image. Therefore, for the depressed elderly presented in this treatment method, it has caused them to become fully aware of their worries and frustrations about their body and appearance, and when they find this awareness, it causes them to eliminate it. Furthermore, it causes their anxiety about their body image to decrease gradually. As a result, people concerned about body image try to avoid situations and activities that provoke these thoughts. In acceptance and commitment therapy, thoughts result from a natural mind, and beliefs result from a cognitive fusion process. What makes thoughts a belief is the content of the thoughts, which is instilled in people using treatment techniques based on the acceptance and commitment of positive thoughts to become a positive belief gradually (33). Another reason for explaining the findings of the present study states that in treatment based on acceptance and commitment of cognitive methods such as knowledge of mental experiences to improve cognitive distortions, ruminative thoughts and beliefs related to body image and how to deal with these cognitions are used. Also, in the above treatment, the techniques of showing separation between oneself, inner experiences and behavior, and familiarity with the concept of cognitive fusion

are used to modify the negative body image and mental rumination. In applying the encounter with mental experiences and familiarity with cognitive defects, the authorities are instructed to deal with the parts of their body that cause them discomfort and the negative experiences of dealing with these specific parts of the body. An individual has his/her body and the thoughts that make him/her more anxious in the form of ruminants and gradually reduce stress, unhappiness, and anxiety, and in this way, he/she receives the feeling of satisfaction and fullness. Therefore, treatment based on acceptance and commitment through cognitive strategies leads to the correction and reduction of negative body image and consequently creates a positive body image and reduces mental rumination in individuals.

Acceptance and commitment therapy in reducing negative body image can also be interpreted as one of the important factors in ruminations, depression and impaired body image, and negative attitude about body image. Because the above treatment emphasizes creating a positive attitude towards the body and reducing mental rumination through mindfulness, this method can effectively improve negative body images and mental rumination (32).

This research has the limitations such as the lack of research which used ACT on the elderly community, and high cost and time. Also, this research was conducted in Shiraz city that limited the generalizing of the results. It is recommended that this research be conducted in other cities and regions using interviews in addition to the questionnaires.

Conclusion

According to the results, acceptance and commitment therapy has reduced the body image concern and mental rumination significantly in depressed elderly. So paying attention to this treatment in welfare centers and nursing homes is essential.

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