

Comparing the effectiveness of Acceptance and Commitment Therapy (ACT), Cognitive Behavioral Therapy (CBT) and Mindfulness on body image concerns of overweight patients

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ABSTRACT

This study aimed to compare the effectiveness of acceptance and commitment therapy (ACT), cognitive behavioral therapy (CBT) and mindfulness on body image concerns of overweight patients. The method was a quasi-experimental type with a pre-test and post-test design with a control group. The statistical population of this study included all overweight women (body mass index between 25 and 29.9) in Varamin City. In the present study, 80 women were considered as the sample size. The sampling method in the present study was done voluntarily. Sampling was done over two months by calling overweight people living in Varamin City. Then, 80 of them were selected by lottery and, after matching, were placed in 4 groups. Then, psychotherapeutic interventions were performed on the experimental group members, while the control group did not receive any intervention. Littleton's (2005) Body Image Concern Inventory was used to collect data. In order to statistically analyze the data, analysis of covariance and Bonferroni's post hoc test and SPSS software were used. The univariate analysis of covariance showed a difference between concern about the body image of the control group, with cognitive-behavioral therapy, therapy based on acceptance and commitment, and mindfulness in overweight people. Also, the results of the Bonferroni post-hoc test showed that all three interventions effectively reduced body image concerns, but there was no significant difference between the test groups.

Keywords: Cognitive behavioral therapy, acceptance and commitment therapy, mindfulness therapy, body image concerns, overweight.

1 Introduction

Overweight and obesity, once considered a problem in high-income countries, are now increasing in low- and middle-income countries, especially in urban settings.

However, obesity is preventable (Enea et al., 2022). Notably, obese people usually have difficulty accepting their body image. Body image is the internal profile of a person's external appearance, and this representation includes

physical and perceptual dimensions and attitudes related to them (Amirkhanloo, Dousti, & Donyavi, 2022). Body image refers to the multifaceted psychological experience of embodiment, not just to one's physical appearance. In fact, it includes personal understanding and attitudes related to a person's body, thoughts, beliefs, feelings, and intertwined behaviors (Coffman, Dean, & Zwiebel, 2022; Lowe-Calverley & Grieve, 2021). Of course, people's level of importance and attention to appearance is different in different contexts.

According to the issues raised, it seems necessary to intervene in obesity and overweight, which is the introduction of obesity. There are various treatments such as drug therapy, surgery, various diets, etc., for overweight and obesity (Enea et al., 2022). However, due to the need for psychological interventions, the current research focuses on mindfulness interventions, ACT therapy and CBT therapy. According to the opinion of Hayes and Strosahl (2004), the third wave of cognitive-behavioral treatments are more based on Eastern culture and religions than the second wave of these treatments (Hayes, Strosahl, & Strosahl, 2004). This research compared cognitive-behavioral therapy as one of the common treatments of the second wave and mindfulness treatments and ACT as one of the common treatments of the third wave, which are in the same theoretical framework but different in terms of treatment focus (Fishbein et al., 2022; Khosroshahi, Mirzaian, & Hasanzadeh, 2019; Shepherd, Golijani-Moghaddam, & Dawson, 2022).

Since the two treatments of mindfulness and ACT are linked with Eastern culture and have a deep relationship with the spiritual and religious culture of Iran; Mindfulness therapy teaches people to observe their thoughts and feelings without judgment and not to consider them as a part of themselves or a reflection of reality (Pagnini et al., 2015); Therefore, mindfulness treatment prevents the intensification of negative thoughts, which is one of the most important obstacles to weight loss (Kearson et al., 2019; Saniei et al., 2022). In the third wave treatments, instead of changing cognitions, it is tried to increase the psychological connection of the person with his thoughts and feelings. At one end of the third wave is ACT therapy (based on communication framework theory); at the other end there are treatments such as MBCT (based on relatively different theoretical and philosophical models). Hayes (2004) believe that some of these third-wave views, such as MBCT, are well integrated into the cognitive model; On the other hand, other perspectives, such as ACT, seem to differ from mainstream cognitive therapy based on their underlying philosophical

assumptions (Hayes, 2004). Although mindfulness and acceptance-based perspectives may have specific philosophical assumptions that differ from traditional cognitive therapy, they are compatible and complementary with cognitive therapy and reflect the logical development of the evolutionary process. Others argue that acceptance-based behavioral strategies for treatment are part of the evolution of the CBT tradition, not something outside of it.

Therefore, this study aimed to compare the effectiveness of acceptance and commitment therapy (ACT), cognitive behavioral therapy (CBT), and mindfulness on body image concerns in overweight patients.

2 Methods and Materials

2.1 Study Design and Participants

The method was a quasi-experimental type with a pre-test and post-test design with a control group. The statistical population of this study included all overweight women (body mass index between 25 and 29.9) in Varamin City. In the present study, 80 women were considered as the sample size. The sampling method in the present study was done voluntarily. Sampling was done over two months by calling overweight people living in Varamin City. Then, 80 of them were selected by lottery and, after matching, were placed in 4 groups. Then, psychotherapeutic interventions were performed on the experimental group members, while the control group did not receive any intervention.

2.2 Measures and Interventions

2.2.1 Body Image Concern

This inventory was developed by Littleton et al. in 2005. It contains 19 questions that examine the individual's dissatisfaction and concern with his appearance. Each item is graded on a scale from 1 to 5. The total score of the questionnaire varied between 19 and 95, and a higher score indicates a high level of concern about the person's body image or appearance. The creators of the scale have shown that this tool has a very favorable validity and reliability. The validity of this scale in this research was checked by internal consistency method and Cronbach's alpha coefficient was 0.93 (Littleton, Axsom, & Pury, 2005).

2.2.2 Cognitive behavioral therapy

Cognitive behavioral therapy was performed based on the Shareh et al.'s (2021) protocol in eight 90-minute sessions (Shareh & Robati, 2021).

2.2.3 ACT

ACT was performed according to the protocol of Hayes (2004) in eight 90-minute sessions (Hayes, 2004).

2.2.4 Mindfulness

Mindfulness was performed according to the protocol of Ahola Kohut et al. (2017) in eight 90-minute sessions (Ahola Kohut et al., 2017).

2.3 Data Analysis

In order to statistically analyze the data, analysis of covariance and Bonferroni's post hoc test and SPSS software were used.

3 Findings

Table 2

ANCOVA results

Source	SS	Df	MS	F	p	Eta
Pre-test	162811.013	1	162811.013	3211.896	0.001	0.977
Group	435.123	3	145.041	3.534	0.004	0.190
Error	3801.750	75	50.69	-	-	-
Total	4187.987	79	-	-	-	-

According to the Table 2, the significance level of the test for the body image concern variable is significant ($P < 0.05$). Therefore, the assumption of the same body image concern score after removing the effect of their pre-test scores is not accepted. Therefore, there is a significant difference between the four groups in the post-test scores after removing the effect of the pre-test scores.

Table 3

The Results of Bonferroni's post-hoc test

Group 1	Group 2	Mean Diff.	SE	p
ACT	CBT	-0.750	2.237	0.999
	Mindfulness	1.300	2.237	0.999
	Control	-8.600	2.237	0.002
CBT	ACT	0.750	2.237	0.999

The descriptive findings are reported in the Table 1.

Table 1

Descriptive findings (Mean and Standard Deviation)

Variable	Stage Group	Pre-test		Post-test	
		SD	M	SD	M
Body Image Concern	ACT	7.490	44.10	7.562	54.65
	CBT	8.958	44.85	10.257	54.45
	Mindfulness	5.187	42.80	7.525	54.90
	Control	6.071	52.70	9.249	53.55

According to Table 1, in the post-test, the mean scores of the experimental groups decreased. Covariance analysis was used to check the research hypotheses. Before the test, the prerequisites were checked. For this purpose, the normality of the data distribution was checked and confirmed using the Shapiro-Wilk test. Also, Levene's test results showed that the equality of variances was established ($p < 0.05$). Also, the results of the M-Box test showed that the significance of F is greater than 0.05 ($p > 0.05$); Therefore, the assumption of homogeneity of the covariance matrix in the studied groups is met.

Mindfulness	Mindfulness	2.050	2.237	0.999
	Control	-8.850	2.237	0.005
Mindfulness	ACT	-1.300	2.237	0.999
	CBT	-2.050	2.237	0.999
	Control	-9.900	2.237	0.001
Control	ACT	8.600	2.237	0.002
	CBT	7.850	2.237	0.005
	Mindfulness	9.900	2.237	0.001

The results of the Table 3 show that there is a significant difference between the control group with ACT intervention, CBT intervention and Mindfulness intervention in body image concern scores ($P < 0.05$). There is no significant difference between ACT intervention with CBT intervention, Mindfulness intervention and the control group in body image concern scores ($P < 0.05$). There is no

significant difference between CBT intervention, ACT intervention, Mindfulness intervention and the control group in body image concern scores ($P < 0.05$). There is no significant difference between Mindfulness intervention with ACT intervention, CBT intervention and the control group in body image concern scores ($P < 0.05$). Therefore, there is no difference between the effectiveness of the three intervention models on reducing body image concerns.

4 Discussion and Conclusion

This study aimed to compare the effectiveness of acceptance and commitment therapy (ACT), cognitive behavioral therapy (CBT) and mindfulness on body image concerns of overweight patients.

The univariate covariance analysis showed a difference between concern about the body image of the control group, with cognitive-behavioral therapy, therapy based on acceptance and commitment, and mindfulness in overweight people. Also, the results of the Bonferroni test showed that all three interventions effectively reduced body image concerns, but there was no significant difference between the experimental groups.

In explaining this finding, it can be said that concern about body image is caused by mental image and negative beliefs and opinions about the body rather than caused by physical defects. Considering that the assumptions of cognitive-behavioral therapy are based on the change of cognition, emotion and behavior, the intervention of cognitive-behavioral therapy in the present study caused the participants to correct their wrong perceptions regarding thinking and emotion (Ahola Kohut et al., 2017; Kearson et al., 2019; Saniei et al., 2022). Then, by using it in relation to others, they can have a positive view of their body and by correcting their beliefs and perceptions about their body image, they can reduce the negative perception towards it during the intervention. Also, in treatment based on acceptance and commitment, the main goal is to create psychological flexibility; It means creating the ability to choose an action among different options that is more appropriate and not an action that is done or imposed on a person simply to avoid disturbing thoughts, feelings, memories or desires. In this therapy, behavioral commitment exercises along with the techniques of failure and acceptance, as well as detailed discussions about the values and goals of the individual and the need to clarify the values, all reduce concern about body image. In this therapy, the goal of emphasizing people's desire for internal experiences

is to help overweight people experience their disturbing thoughts as just a thought and become aware of the dysfunctional nature of their current program. Also, people can easily experience unpleasant internal events in the present and be able to separate themselves from unpleasant reactions, memories and thoughts (Bond et al., 2011; Herbert & Forman, 2011; Kazemeini et al., 2022). Therefore, since the goal is to increase psychological flexibility in these people, this approach leads to a change in the attitude towards the body and a significant reduction in body image concern. On the other hand, mindfulness intervention is also against judging thoughts and feelings and dividing them into good and bad, and as a result, avoiding their negative aspects; Therefore, it causes people to try to accept and fully experience all negative and positive things instead of avoiding negative experiences and as a result not solving problems and increasing distress and worry due to unfinished problems; Accordingly, they get rid of negative thoughts and feelings caused by trying to avoid the negative parts of their experiences. Therefore, mindfulness training helps people to look at their bodies with a non-judgmental and accepting attitude, and this will reduce strong negative emotional reactions and impulsive behaviors and increase the feeling of self-efficacy in people.

5 Limitations and Suggestions

One of the limitations of the present study was the lack of standard and mandatory nutritional methods and physical activity. The use of self-report tools increases the bias in the answer due to the participants' desire to create a favorable social image and limits the generalizability of the findings. Also, due to the nature of the sample (overweight people in Varamin), the current research includes limitations in generalizing the findings, which should be considered. Finally, voluntary sampling makes it difficult to generalize the results. The results showed no difference between the effectiveness of cognitive-behavioral therapy, therapy based on acceptance and commitment, and mindfulness on body image concerns in overweight people. Therefore, it is suggested to health advisors to use the mentioned interventions in individual and group training sessions in order to reduce body image concerns in overweight people.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethics principles

In this research, ethical standards including obtaining informed consent, ensuring privacy and confidentiality were observed.

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