

The Effect of Acceptance and Commitment Therapy on Youth with Body Dysmorphic Disorders Symptoms: A Randomized Clinical Trial

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Abstract

Background

Body dysmorphic disorder (BDD) is the most distressing body image disorders. The aim of this study was to evaluate the efficacy of acceptance and commitment therapy (ACT) in improving psychological problems in individuals with BDD symptoms.

Methods

This was a randomized clinical trial study with 34 eligible patients with BDD symptoms were recruited from Kashan city in 2021. These individuals were randomly assigned to either an intervention group (n = 17) with 8 weekly ACT sessions or a placebo group (n = 17). Used assessments included Yale-Brown Obsessive-Compulsive Scale Modified for Body Dysmorphic Disorder (Y-BOCS-BDD), Depression Anxiety Stress Scales 21-item version (DASS-21), Cognitive Fusion Questionnaire (CFQ), and Body-Image Acceptance and Action Questionnaire (BI-AAQ). Data were analyzed by using SPSS 26.

Results

The results revealed that there was no significant difference in demographic variables of either age or gender. On the other hand, statistical analyze showed that two groups had the significant difference in term of body symptoms severity ($F = 4.89$), cognitive fusion ($F = 9.18$), emotional symptoms (depression $F = 4.03$, anxiety $F = 4.02$, and stress $F = 4.87$) in the post-test.

Conclusion

It can be said ACT has a positive effect on body image flexibility, cognitive fusion, and emotional symptoms of young people with body dysmorphic disorders and it can improve their symptoms.

Introduction

Body dysmorphic disorder (BDD) is characterized by a preoccupation and constant worrying over a perceived or slight defect in appearance and distress about their preoccupation. (1). Individuals with BDD spend a lot of time on behaviors such as staring in the mirror, comparing certain features with others, excessive camouflage, peeling skin, and reassurance seeking. Avoidance of social and intimate interactions is commonly seen in people with BDD (2). The comorbidity of BDD and other disorders is high, especially depression, social phobia (2), and anxiety (3). The prevalence of BDD in the community is reported as 0.7% in two studies (4, 5) with a higher prevalence in adolescents and young adults (6) and about 5% in a cosmetic surgery setting (7) and 12% in a dermatology clinic (8). The American Society of Plastic Surgeons (2011) reported that the majority of surgeries in the United State were cosmetic

surgeries (72%), and the majority of these were performed by women (91%); and there's been a 90% increase since 2000 (9). It was reported that BDD individuals have a distorted body image and experience a high depression and suicide ideation (10). Several studies showed that individuals with BDD symptoms significantly have problem to cognitive fusion (11, 12), body image inflexibility (13), and emotional symptoms (14, 15).

Multiple pharmacological as well as psychological therapies are used for the treatment of BDD. However, medical (e.g., surgical, dermatological, dental) methods have been almost unsuccessful in eliminating the alleged defects of these patients. They have short-term effects, but in the long run, they increase a person's desire for cosmetic surgery (16). One of the methods of psychotherapy is the cognitive-behavioral therapy (CBT); but about one-third of people who use CBT are at risk for recurrence and the effects of these treatments are questionable (17). Today, the third generation of the therapies including dialectical behavior therapy (DBT), functional analytic therapy (FAT), and acceptance and commitment therapy (ACT), have been developed for psychological problems such as BDD. ACT is based on relational frame theory (RFT) and includes six core principles (acceptance, cognitive defusion, self as context, contact with the present moment, values, and committed action), that help clients achieve psychological flexibility (18). According to ACT, people with psychological problems engage in avoidance strategies when experiencing unpleasant emotions (19). While this strategy may be effective in the short term, it ultimately puts the individual in harmful situations and leads to experience more distress. Therefore, avoidance is not an effective strategy and could lead to problematic behaviors. Based on ACT, the patients label their emotions as disturbing and uses ineffective measures to change them (21). People with BDD constantly evaluate their appearance and then experience unpleasant feelings about themselves, therefore they try to avoid these situations. Avoidance paradoxically increases the negative emotions in these people. Given the relative prevalence and the chronic nature of BDD, the successful treatment of the disease could significantly improve the mental health in individuals with BDD symptoms. It is evident from studies that ACT has a positive effect on other mental disorders such as anxiety disorders (20), depression (21), body image dissatisfaction (22) and promoting well-being (23). Although research on the use of ACT in the treatment of BDD is limited, Studies found that ACT significantly improved psychological status (including interpersonal problems, quality of life, worry, body dissatisfaction and fear of negative evaluation) in BDD patients (24–28). The aim of the present study, therefore, was to investigate the effectiveness of ACT in improving BDD severity, cognitive Fusion, body image inflexibility, and emotional symptoms in patients with BDD.

Material And Method

Participants

The first sample included 338 participants to identify individuals with BDD symptoms. They invited to study through public announcement in Kashan city, Iran and completed all of the study questionnaires online. Hence, individuals with a score above 20 in BDD questionnaire were invited for an interview so as to further evaluation in treatment process. At the end 34 individuals with BDD symptoms according

to questionnaire and interview who had inclusion criteria were randomly divided into intervention and placebo groups (ACT; 9 women and 8 men/ Placebo; 12 women and 5 men; Figure 1). The BDD was diagnosed based on DSM-5 criteria [according to the Persian translation of Structured Clinical Interview for DSM-5-R Version (SCID-5-RV) (29)] by an experienced clinical psychologist. The inclusion criteria consisted of: (a) having age between 18-30, (b) obtaining a score higher than 20 in the Yale-Brown Obsessive-Compulsive Scale Modified for Body Dysmorphic Disorder (Y-BOCS-BDD). Subjects were also excluded for any of the following: (a) necessity to take the psychiatric medication, (b) substance or drug uses, and (c) meeting criteria for eating disorders, psychosis disorders or personality disorder. At the first meeting, the therapist reminded the entire ethical rules for all of the participants, information about the research (number of sessions, time of each session, etc.), randomization, committing to keep private the information and the right to leave the research was given whenever they want to. It was emphasized that there is no right or wrong answer for questions of instruments and there is no need to write the name or surname. The current project was approved by the Ethical Committee of Kashan University of Medical Sciences (IR.KAUMS.MEDNT.REC.1399.152) and IRCT20210903052368N1 in Iranian registration clinical trial. Also, participants were enrolled after getting signed informed consent.

Research scale

BDD-YBOCS is a 12-item semi-structured clinician-administered instrument that evaluates current BDD severity (30). It measures BDD related preoccupations, repetitive behaviors, insight, and avoidance (31). The reliability and validity of the Persian version of BDD-YBOCS was reported well internal consistency by Rabiei et al. (32). In another study, it was found good internal consistency (α = from 0.78 to 0.93) (33).

Depression Anxiety Stress Scales 21-item version (DASS-21) is a self-report scale that assess current symptoms of depression, anxiety and stress (21). Participants are asked to rate how much the items applied to them during the past week using a Likert scale from 0 (at all) to 3 (very much, or most of the time). Previous studies have demonstrated acceptable psychometric properties of the DASS-21 in Iranian sample and the DASS-21's Cronbach alpha was 0.94. The Cronbach alpha for depression, anxiety and stress scales were 0.85, 0.85 and 0.87, respectively. (34).

Cognitive Fusion Questionnaire (CFQ): This 12-item questionnaire measure cognitive fusion, especially in relation to separating thoughts from actions and creating a psychological distance between the individual and his thoughts, beliefs and memories. Items are rated on a 7-point Likert scale. A study reported the Cronbach's alpha 0.76 for this scale (35).

Body-Image Acceptance and Action Questionnaire (BI-AAQ) evaluates body image flexibility and was developed by Sandoz et al (36). This 12-item scale is rated on the 7-point Likert and summed into a total score (12 - 84). Higher scores show lower body image flexibility. The BI-AAQ test-retest reliability was reported to be 0.81 by Bond et al., they found a good internal consistency for this scale (α =0.84). The psychometric properties of Persian version of BI-AAQ have been confirmed. This questionnaire demonstrated a good internal consistency (α =0.87) and test-retest reliability (r =0.72, p <0.05) (36, 37).

Treatment group

The intervention included of 8 weekly 1.5-hour sessions of online-delivered ACT due to the spread of covid-19. A brief description of the sessions is provided below:

1) Providing an opportunity for the BDD patients to become familiar with the therapist and the treatment, describing the treatment rules and treatment approach in general 2) Introducing the concept of values and aims and the issue of choice 3) Provide a definition of acceptance and the concept of necessary focus 4) Practicing mindfulness through body scanning and breathing awareness 5) Discussing about defusion 6) Self-observation practicing 7) Talking about commitment, Mindfulness practicing 8) Practicing clarifying values according to commitment and planning for the future, Preparing not to relapses in negative events, Running a post-test, Ending sessions and concluding (38)

Placebo group

The placebo group in this study received no psychological treatment, but received information about the causes, symptoms of BDD, an explanation of how BDD is diagnosed, and psychological treatment associated with BDD. They completed the questionnaires in two-time points (pre- and post-test).

Therapist

Therapist was a MSc in clinical psychology, whom had been supervised and trained in ACT (three years). The therapist received weekly supervision from two PhD of clinical psychologists throughout the study. All of the sessions recorded and reviewed weekly by the supervisors to ensure the internal consistency of the interventions.

Data analysis

Statistical analyses were rined using the SPSS -26 software package (SPSS Inc., Chicago, IL, USA). Continuous variables are expressed as mean \pm SD. Categorical data are expressed as percentage. Kolmogorov–Smirnov test and Levene's test were used to determine normality and equality of variance. Chi-square test and independent t test were used to determine the differences between groups in demographic characteristics. The analyses for evaluating of effectiveness of treatment were based on the intention-to treat principle (ITT). Significant difference was defined as p-value less than 0.05.

Result

Participants' characteristics

In this study, 34 participants were randomly assigned to two different groups; there were no dropouts at any of the study stages. The results showed that there were no significant differences in mean of age and gender when comparing BDD people in the intervention vs. in the control group (Table 1).

Treatment Effect

The mean and standard deviation of the body image flexibility, cognitive fusion and emotional symptoms at the two evaluation stages are shown in Table 2. Based on these results, the mean of emotional symptoms, cognitive fusion and body image inflexibility score among participants in the ACT group decreased in the post-test compared to the pre-test. In addition, in the control group, the mean scores of emotional symptoms, cognitive fusion and body image inflexibility increased, in the post-test compared to the pre-test.

The use of parametric tests, such as analysis of covariance (ANCOVA), requires observing a set of presumptions. In this study, the subjects were randomly assigned to the two groups. Due to use of standard tools for evaluating the dependent variables, the presupposition of the interval nature of the dependent variable was observed and also the normality of the scores distribution through the Kolmogorov-Smirnov test, the equality of the variance scores in the pre-test by Levine test, and the equality of the covariance of the variables in the pre-test were followed by the M Box test.

Table 1
Demographic characteristics of the study groups

Variables		Control group	Intervention group	p-value
Age		23.47 (\pm 2.91)	21.82 (\pm 2.81)	0.10
Gender	Women	12 (70.6%)	9 (52.9%)	0.29
	Men	5 (29.4%)	8 (47.1%)	

Table 2

Mean and standard deviation values for body image flexibility, cognitive fusion and emotional symptoms in the two study groups at different stages of evaluation

Variables	Control	Group	Intervention	group	p-value
	Pre-test	Post-test	Pre-test	Post-test	
Body dysmorphic symptoms	22/94 (\pm 5/03)	22/58 (\pm 3/90)	23/35(\pm 5/34)	19/41(\pm 4/55)	0/032*
Body image flexibility	55.64 (\pm 5.70)	56.41 (\pm 6.86)	54.82 (\pm 6.20)	51.23 (\pm 6.34)	0/035*
Cognitive fusion	52.29 (\pm 7.07)	51.52 (\pm 6.53)	51.82 (\pm 6.65)	58.29 (\pm 6.45)	0/005**
Depression	11.47 (\pm 3.92)	11.64 (\pm 3.51)	11.58 (\pm 3.08)	9.05 (\pm 3.68)	0/044*
Anxiety	11.11 (\pm 5.12)	11.88 (\pm 5.12)	13.29 (\pm 4.34)	8.64 (\pm 3.62)	0/044*
Stress	11.64 (\pm 3.75)	11.35 (\pm 4.15)	12.41 (\pm 5.25)	8.17 (\pm 4.05)	0/035*
*p > 0/05 **p > 0/01					

Discussion

The current study aimed to investigate the effect of ACT on body image flexibility, cognitive fusion and emotional symptoms in youth with body dysmorphic disorders symptoms. Analysis of results indicated that this treatment could reduce cognitive fusion and emotional symptoms (depression, stress, anxiety) and increase body image flexibility in these patients. The results are in line with the findings of many studies on the impact of ACT (39–46). For instance, the research of Siahpoosh et al. showed that ACT has a significant effect on flexibility indexes, due to the majority of people who participate in ACT have shown that their psychological flexibility has increased (47, 48). Also, the results of a study by Abbasi et al. stated that ACT has an effect on increasing the students' body image flexibility (39). Masuda et al. indicated ACT significantly reduces the amount of negative thoughts and rumination about body image (49). The results of various studies have unraveled the positive effect of the ACT on perceived stress (50), the level of stress, anxiety, depression (51); and psychological distress (43).

Based on present findings, it is clear that in this disorder, patient experiences disturbing emotions because of the thoughts about appearance evaluation. Afterward, she/he tries to escape from this inner events; But these efforts do not diminish the occurrence of those thoughts or emotions and may even increase them through the passage of time. These efforts are the result of avoiding from ineffective experiences and can cause other problematic behaviors (39). According to the RFT, BDD individuals label their inner processes as an annoying matter and make ineffective attempts to change them (40). It seems that BDD individuals overvalue the individual charming, it leads to the loss of other vitally important

values in their lives. When ACT is trained to these individuals, they learned to observe their painful thoughts and feelings and pay attention to a richer and more meaningful life in a newer form, that is, natural human experiences (41). ACT can increase the psychological flexibility of the clients, therefore they are more likely to accept their appearance and report less severe symptoms about their disorder.

In ACT, thoughts are the result of a natural mind, and beliefs are the result of a process of cognitive fusion (42). It is necessary to mention that what turns thoughts into beliefs is that the person is immersed in the content of the thoughts. When the function of a BDD person is related to the thought of body dissatisfaction, he/she will be mixed with its content, and the result of this combination are beliefs about body dysmorphic. Cognitive defusion teaches clients how to see thoughts only as a thought, memories only as memories, and bodily feelings only as bodily feelings. Hence, participants are capable of not only separating themselves from their thoughts and feelings, and consequently, these cases are seen as thoughts just outside of their own existence, but also they try to expand the psychological relationship between their thoughts and feelings. Obviously, people with more body image flexibility perform in a way which conforms to the chosen values about their appearance and body shape (42). Moreover, this treatment gives the experimental group the opportunity to be in a way that allows them to accept their thoughts about their appearance and body (43). In ACT, patients through mindfulness and self-as-context skills can provide more body image flexibility (44). Therefore, it can be said that ACT is able to decline the body image inflexibility in participants.

Since in ACT people learn how to cope with and accept their thoughts, they will have the least focus on those thoughts; Therefore, they get better scores in cognitive defusion than people who have not participated in this treatment. Cognitive defusion is the process of gradual weakening of behavioral regulation functions and the verbal effects of inner events. Given that the ACT encourages individuals to change their relationship with thoughts and other inner experiences and see them as mental events, it can effect on cognitive fusion by providing psychological flexibility. One of the aims of this treatment was to open a way for people to accept and manage the stress problems or thoughts which are related to the stress by increasing their valuable activities and creating psychological flexibility (44). ACT can equip clients with the beliefs, behaviors, and values so as to manage and regulate unpleasant and threatening feelings by using acceptance, being in the present moment, non-judgmental observation, commitment to personal values, and avoidance of empirical avoidance. In explaining the effect of this treatment on anxiety and depression in BDD patients, it should be explained that it was expected that behavioral commitment skills, defusion exercises, acceptance techniques, and commitment to values would all decline the severity of depression and anxiety. In this study, participants were taught self-as-context in order to not only be able to experience easily any kind of unpleasant inner events in the present moment, but also to separate themselves from unpleasant reactions, memories, and thought (46).

This study had several limitations. firstly, the sample size was small, which makes it difficult to generalize the results. Secondly, the study did not include a follow-up with participants to examine the continuation of the intervention efficacy. Since all of the participants belong to young generation; it is needed to be more cautious for generalizing the results to all age groups. For future research, it is recommended that a

similar study be conducted that includes a CBT group could also be added for comparison with the ACT. It is suggested to pay more attention to the usage of ACT in diminishing and controlling the troubles of BDD individuals in other age groups, especially on adolescents in schools in order to enhance their mental health by reducing anxiety, body image dissatisfaction and cognitive fusion.

Conclusion

To conclude, there are several comorbid psychological conditions for patients with BDD. In this study, ACT was used as a third wave treatment in individuals with BDD. The results of the present study confirmed that the ACT was effective for BDD people to improving emotional symptoms; it helped participants to deal with cognitive fusion and caused a reduction in body image inflexibility related to BDD. Hence, this protocol can be applied as an effective treatment for patients with BDD.

Declarations

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Statement of Ethics

The current study, ethically approved at Research Ethics Committee of Kashan, Iran (IR.KAUMS.MEDNT.REC.1399.152) and IRCT20210903052368N1 in Iranian registration clinical trial.

Conflict of Interest Statement

The authors had no conflicts of interest.

Consent to Participants

Participants were enrolled after getting signed informed consent.

Consent for publication

Consent for publication was received from participants.

Availability of data and materials

Data and material will be provided upon request.

Authors' contributions

Akram Torkian, Zahra Zanjani, Zahra Pourkmali, and Abdollah Omidid designed the study, Akram Torkian and Zahra Pourkmali collected data, Akram Torkian and Zahra Zanjani analyzed data, and Akram Torkian and Abdollah Omidid wrote the manuscript. All authors read and approved the final manuscript.

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Figures

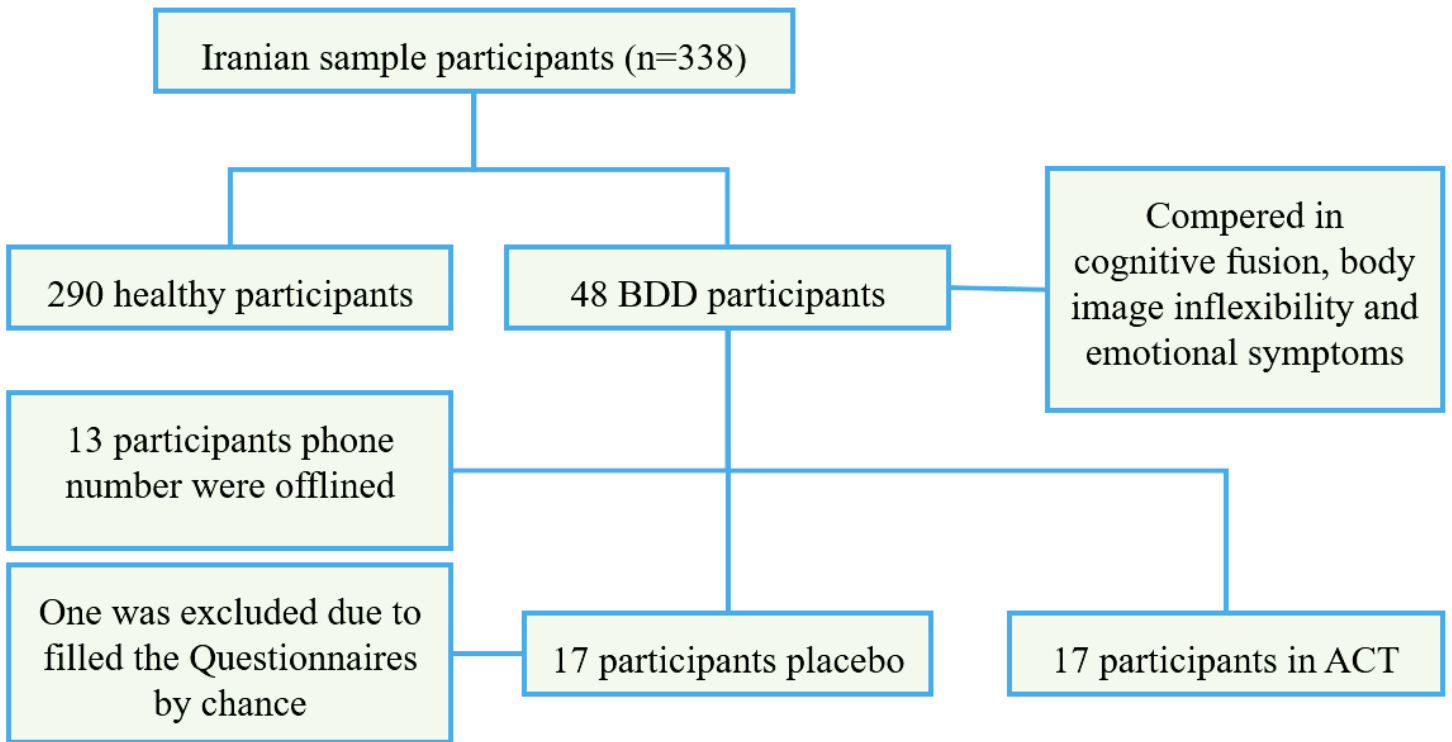


Figure 1

Flow diagram, flow chart of the number of participants included into the study