ORIGINAL ARTICLE

Comparing the effectiveness of acceptance-based behavior therapy and applied relaxation on acceptance of internal experiences, engagement in valued actions and quality of life in generalized anxiety disorder

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Background: Acceptance-based behavior therapy (ABBT) was developed based on the theory that generalized anxiety disorder (GAD) is maintained through a reactive and fused relationship with internal experiences and a tendency toward experiential avoidance and behavioral restriction. ABBT specifically targets these elements. Here, we aimed to compare ABBT to the applied relaxation (AR), which is the most utilized psychological therapy for GAD. **Materials and Methods:** This study was a randomized clinical trial study. The sample included 18 GAD patients who were referred by an expert psychiatrist to Psychosomatic Research Center of Isfahan University of Medical Sciences. Patients were assigned into two groups (ABBT and AR group). Both groups received routine drug therapies by psychiatrists. The ABBT and AR were applied in 12 weekly sessions. The instruments used in the study included Valued Living Questionnaire, Action, and Acceptance Questionnaire, and Short-Form Health Survey-12 revised Version (SF-12V2). The data were analyzed using the multivariate analysis of variance. **Results:** No significant differences were found between ABBT and AR groups in their acceptance of internal experiences, engagement in meaningful activities and quality of life ($P > 0.05$). **Conclusion:** The current study compared ABBT to the most utilized psychological therapy for GAD; i.e., AR. ABBT and AR have similar efficacy on acceptance of internal experiences, valued actions and quality of life.

Key words: Anxiety disorder, behavior therapy, quality of life, relaxation

INTRODUCTION

Generalized anxiety disorder (GAD), as one of the most common anxiety disorders is characterized by anxiety, tension, and chronic and persistent worry. It may be associated with significant distress and psychosocial impairment.[1] Many efficacious cognitive-behavioral treatments exist, but only about half of those treated are achieving high end-state functioning.[2] As GAD is one of the least therapeutic responsive anxiety disorders, In an effort to use more efficacious therapeutic modalities, several promising new therapies have recently been developed. Acceptance-based behavior therapy (ABBT) is one of the newest forms of therapeutic approaches to GAD.[3,4]

ABBT aims to help clients become more alert about their internal experiences and increase their engagement in actions of important life domains.[5] Roemer and Orsillo due to Borkovec's theory, proposed that GAD is maintained through problematic and reactive concepts about internal experiences, and due to emotional and behavioral responses aimed at avoiding and decreasing internal distress.[6] According to this model, anxiety is maintained in part by reactive and over-identified relations to internal experiences such as thoughts, feelings, urges, images, and bodily sensations.[6] This reactivity toward emotions may lead to an experience of internal experiences as unacceptable, intolerable, and threatening, eliciting strong urges to escape or avoid these experiences and it can paradoxically increase distress.[6] Higher levels of experiential avoidance have been reported in individuals with GAD compared to those without GAD.[7] Additionally, individuals diagnosed with GAD report living less consistently with their values and lower quality of life than individuals not diagnosed with GAD.[8]

The basic underlying theory of ABBT is that the initial worry, feeling, physical sensation, or image are not problematic by themselves, however, it is the rigid unwillingness to have these internal experiences that

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may cause the real problematic situation. Try to develop a more acceptable attitude and willingness toward these internal experiences could reduce the distress and interference associated with the unpleasant internal experiences, and so could decrease the negative reactivity and the cycle of anxiety. From this perspective, the focus of treatment is not on eliminating worry, but rather than on decreasing the distress and interference associated with this cognitive activity.[9]

Clients receiving ABBT have shown significant improvements in symptoms in both a small open trial and a wait list controlled trial.[10,11] Clients who received ABBT reported significant changes in worry, anxiety symptoms, quality of life, and GAD severity.[12,13] Furthermore, Hayes *et al.* reported that the changes on acceptance of internal experiences, engagement in valued actions and quality of life by ABBT.[6]

Because, ABBT is a new treatment for GAD, other studies are necessary to evaluate effectiveness of its components; acceptance of internal experiences and engagement in valued actions and related problems such as quality of life. So far, no study has compared ABBT with other psychological treatments. The goal of this study is to compare the effectiveness of ABBT and applied relaxation (AR) on acceptance of internal experiences, engagement in valued actions and quality of life in GAD. Here, we tried to evaluate the efficacy of ABBT as a critical approach to changing the patients' attitude towards the GAD in comparison with AR as the most routine psychotherapeutic method. Of all general anxiety-reduction strategies, AR has received the most empirical support in the treatment of GAD.[14]

MATERIALS AND METHODS

Participants and procedure

This is a randomized clinical trial, which had been approved by Tehran Psychiatric Institute (IRCT No: 201108057227N1). The study had been carried out in Psychosomatic Research Center (PSRC) of Isfahan University of Medical Sciences. Statistical population included female patients with GAD who was referred by expert psychiatrists to the PSRC. Thirty-five women with primary diagnosis of GAD selected if they met the inclusion and exclusion criteria. Inclusion criteria were: (1) Primary diagnosis of GAD; (2) age between 18 years and 60 years; (3) educational level higher than 3rd in junior school; (4) no psychotherapy received for their GAD during last 6 months. Exclusion criteria were: (1) Having mental retardation, psychotic disorders, alcohol or drug dependence, severe depressive disorders, bipolar mood disorder, and personality disorders (cluster A and B); (2) having suicidal thoughts and drugs abuse.

After describing the aim of the study, all patients signed informed consent. All referred patients were screened with a Farsi version of SCID-I and SCID II (Structural Clinical Interview for DSM disorders for Axis I and Axis II). These interviews assess major mental disorders and personality disorders based on DSM-IV. Four subjects excluded from the study because of having the exclusion criteria such as borderline personality disorder or other diagnosis in Axis I as primary diagnosis. Three subjects excluded from the study because they could not participate in therapeutic sessions. After screening and investigating of their situation for participating in study, 22 patients were assigned randomly into two groups (ABBT and AR group). Patients started treatment after screening process and 1 month waiting. Valued Living Questionnaire (VLQ), Action and Acceptance Questionnaire (AAQ) and Short Form Health Survey-12 revised Version (SF-12V2) were administered 1 week before treatment and after the 12th session (post-test) in both groups. The therapeutic methods used in this study were ABBT for GAD and AR. Basic ABBT protocol was used that consisted of 16 sessions of individual psychotherapy, but we after getting permission from their authors, used the summarized form about 12 sessions with longer time about 90 min in all sessions.[8]

ABBT involves increasing clients' awareness of patterns of anxious responding, the function of emotions, and the role of experiential avoidance using psychoeducation, experiential demonstrations, and between session monitoring. Clients were also taught a variety of mindfulness practices and were encouraged to establish both formal and informal daily mindfulness practices. Clients also engaged in written exercises about their values. Treatment focused on bringing mindfulness awareness to valued activities.[10] AR followed the protocol developed by (1987) that includes an overview of the 12-session program showing patients how they would learn to apply muscular relaxation skills in still shorter times, and that they would learn to apply them in anxious situations.[15] During treatment, patients were taught to identify early signs of anxiety and to apply relaxation skills. Starting with progressive relaxation, the therapist taught patients to relax increasingly quickly, to apply relaxation skills during daily activities such as walking, typing, driving a car, etc., and to use these skills to counter anxiety as early as possible.

Measures

Action and acceptance questionnaire

This 10-item measure was given at pre- and post-treatment to assess experiential avoidance. On this scale, high-scores represent experiential avoidance and low-scores reflect acceptance. The AAQ has demonstrated adequate internal consistency ($\alpha = 0.70$) and test–retest reliability ($\alpha = 0.64$) over 4 months in an undergraduate sample.[16] Likewise,

scores on the AAQ were moderately correlated with measures of the related construct of cognitive avoidance (α = 0.50). The AAQ demonstrated adequate internal consistency at pre- (α = 0.73) and post-treatment (α = 0.88).[10] For this study, we translated AAQ to Persian language and found adequate formal validity by five experts in clinical psychology. For finding reliability of the test we administered this scale on 30 dormitory students of Tehran University of medical sciences. In this sample, the AAQ demonstrated adequate reliability (α =0.87).

Valued living questionnaire

The VLQ is a two-part questionnaire designed to measure aspects of valued living. The first part of the questionnaire assesses the importance of 10 areas that have been identified as valued domains (e.g., family, friendship, work) on a 10-point Likert scale. The second part asks about how consistently the respondent is living according to each of the 10 values using a 10-point Likert scale. A composite score is derived for each area of valued living by multiplying the importance score by the consistency score to indicate the extent to, which respondents are living consistently with values that are important to them. The VLQ has demonstrated adequate reliability and is positively correlated with other measures of valued living.[17] The VLQ consistency subscale demonstrated adequate internal consistency at pre- (α = 0.77) and post-treatment (α = 0.90).[10] In this study, we translated VLQ to Persian language and found adequate formal validity by five experts in clinical psychology. For finding reliability of the test, we administered this scale on 30 dormitory students of Tehran University of Medical Sciences. In this sample, the VLQ demonstrated adequate reliability (α =0.86).

SF-12V2-short form health survey-12 revised version

The short form (SF)-12 health survey is a shortened version of the medical outcomes study 36-item short form health survey (SF-36), a generic and popular health-related quality-of-life instrument for adult populations with eight scale scores and two physical and mental component summary (PCS and MCS) scores. The first version of SF-12 reproduced SF-36 summary scores, but the revised version, SF-12 V2, also included the eight scale scores. SF-12V2 was designed by Ware *et al*.[18] The SF-12 and SF-36 are available in many languages.[19] The brevity of SF-12 makes it an appealing tool to assess health-related quality of life, especially in large-scale studies.[20] The psychometrics of the SF-12 have been examined, and the two component summary scores have been demonstrated to be reliable and valid in general and specific populations.[18,21-23]

Subjects reporting better overall health would have higher scores on SF-12 V2 scales than that reporting worst overall health. SF-12V2 has all of eight scale scores of SF-36 but with only 1-2 items in each scale. That's why in this study, we used two PCS and MCS scores. In this study, we translated SF-12V2 to Persian language and found adequate formal validity by five experts in clinical psychology. For finding reliability of the test, we administered this scale on 30 dormitory students of Tehran University of Medical Sciences. In this sample, the SF-12 V2 demonstrated adequate reliability (α =0.86).

Data analysis

To confirm symptomatic differences between the ABBT and AR groups, multivariate analysis of variance was performed comparing the groups on measures of acceptance of internal experiences, engagement in valued actions and quality of life. The pre-test questionnaire controlled as control variables and we used SPSS-16 for analyzing of dates.

RESULTS

Table 1 shows demographic data of subjects. All of the subjects were married women with their age ranging from 22 years to 60 years. There were not any significant differences between demographic data of subjects into two groups. Because subjects assigned in the groups randomly, this differences was controlled. There were two dropouts in ABBT group (18%). One patient in ABBT did not participate because she believed ABBT is similar to yoga that she had bad experienced with that. Furthermore, there were two dropouts in AR group (18%). At the post-test the final sample in two groups consisted of 18 women (nine women in each group).

Box's Test of Equality of Covariance Matrices showed that the observed covariance matrices of the dependent variables are equal across groups (Box's M = 6.031, F = 0.436, *P* value > 0.09). Mean scores in dependent variables (acceptance of internal experiences, engagement in valued actions and quality of life) in pre-test entered as covariate variables in MONCOVA model.

Table 1: Demographic data of participants

Variable	ABBT (%)	AR (%)	*P* value
Age	34.5±7.24	42.7±9.41	0/99
Educational level			
Junior school	2 (22.2)	3 (33.3)	0/1
Senior school	5 (55.5)	4 (44.5)	
Bachelor	2 (22.2)	2 (22.2)	
Occupation			
Salaried employee	2 (22.2)	1 (11.1)	0/73
Housewife	7 (77.8)	8 (88.9)	
Number of children			
0	2 (22.3)	1 (11.1)	0/198
1-2	7 (77.7)	6 (66.7)	
>2	-	2 (22.2)	

P value less than 0.05 defined as significant; AR=Applied relaxation; ABBT=Acceptance-based behavior therapy

Multivariate tests such as Hotelling's Trace showed at post-test there were no significant differences between ABBT and AR groups (F = 1.829, P = 0.207, ES = 0.44). Table 2 provides the means and standard deviations for the primary variables of interest in this study (acceptance of internal experiences, engagement in valued actions and quality of life) and comparison of outcome measures at post-treatment in ABBT and AR groups (after controlling of pre-test scores).

DISCUSSION

In this study, we tried to investigate whether a randomized controlled trial of a 12-week group ABBT program that focused on acceptance of internal experiences and engagement in meaningful activities and bringing mindful awareness to valued activities would be more effective than another classical treatment (AR) for patients suffering from GAD.

Results from this randomized controlled trial of ABBT for GAD and AR demonstrate that subject in both groups experienced an increase in acceptance of internal experiences, engagement in valued actions and mental quality of life following a 12-week treatment. But these differences were not significant between two groups. Roemer and Orsillo reported subjects in ABBT and AR groups have not have significant differences in acceptance of internal experiences, engagement in valued actions and quality of life in post-test.[4]

Acceptance-based behavior therapies are related to third wave of behavior therapies in psychotherapy. Mindfulness therapies have common therapeutic components with ABBTs such as acceptance of internal experiences and non-judgmental awareness to them. Although, there are a few studies in comparing mindfulness to other psychotherapies but two studies showed participants in mindfulness and progressive muscle relaxation experienced decreases in psychological distress, although, neither treatment proved superior to the other in decreasing distress.[24] Various forms of relaxation training have high levels of present-moment awareness, and therefore, relaxation has a similar effect such as mindfulness in increasing acceptance of internal experiences.

AR may target acceptance by in-session imaginal exercises require the client to vividly recall anxiety-provoking situations. Similar to techniques used in other forms of behavior therapy, this re-experiencing exercise may serve the function of having clients notice their anxious responses while the therapist helps them to stay with the experience, encouraging clients to approach, rather than avoid. In ABBT and AR, there are some techniques for stress reduction. In our study, participants in ABBT group tend to apply relaxation techniques more than acceptance techniques. They reported more satisfaction and effectiveness from relaxation training than acceptance training.

Overall ABBT and AR have no significant differences in acceptance of internal experiences, engagement in valued actions and quality of life.

Limitations of the present study were the relatively small sample size and the lack of other psychotherapy control group. Another limitation of this study was the lack of follow-up about therapeutic results. It is suggested that future studies compare efficacy of ABBT to other traditional and newer cognitive-behavioral therapies and mindfulness therapies in patients with GAD.

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Table 2: Means, standard deviations and comparison of outcome measures at post-treatment in acceptance-based behavior therapy and applied relaxation groups

Variables	Pre-test	Post-test	Sum of squares	Mean square	F	*P* value
Acceptance of internal experiences						
AR	54.22 (5.78)	34.55 (11.58)	102.106	102.106	0.568	0.466
ABBT	46.66 (10.18)	35.88 (13.55)				
Valued actions						
AR	48.629 (5.78)	63.97 (5.52)	157.403	157.403	0.818	0.384
ABBT	41.35 (4.83)	57.28 (5.52)				
Quality of life (somatic)						
AR	38.71 (5.48)	40.69 (2.93)	3.307	3.307	0.329	0.577
ABBT	42.08 (5.71)	39.14 (3.45)				
Quality of life (mental)						
AR	30.54 (6.44)	37.80 (10.08)	194.578	194.578	2.391	0.148
ABBT	28.89 (6.99)	44.36 (6.41)				

AR=Applied relaxation; ABBT=Acceptance-based behavior therapy; *P* value less than 0.05 defined as significant

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