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The Efficacy of Acceptance and Commitment Therapy on Metacognitions and Anxiety in Women Outpatients with Generalized Anxiety Disorder in Iran
L'efficacité de la thérapie de l'acceptation et de l'engagement sur la métacognition et l'anxiété chez des femmes en consultation externe souffrant de troubles d'anxiété généralisée en Iran

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ABSTRACT

The purpose of the present study was to examine the comparative effectiveness of acceptance and commitment therapy (ACT) in the treatment of metacognitions and anxiety among women with generalized anxiety disorder. In total, 40 self-referred female outpatients were examined within a randomized controlled trial. Patients were allocated to ACT and waitlist control groups. Metacognitions and anxiety symptoms were measured by the Metacognitions Questionnaire and the Beck Anxiety Inventory at baseline, posttreatment, and 2-month follow-up. Analyses showed that the therapeutic group had improved significantly whilst the control group had remained unchanged.

RÉSUMÉ

La présente étude a pour objet d'examiner l'efficacité relative de la thérapie de l'acceptation et de l'engagement (TAE) dans le traitement de la métacognition et de l'anxiété chez des femmes souffrant de troubles d'anxiété généralisée. En tout, on a examiné 40 femmes traitées en consultation externe et se présentant d'elles-mêmes dans le cadre d'un essai clinique randomisé. Les patientes ont été orientées vers la TAE et vers des groupes de contrôle sur liste d'attente. Les symptômes relatifs à la métacognition et à l'anxiété ont été mesurés au moyen du Questionnaire sur la métacognition et de l'Inventaire d'anxiété de Beck au niveau de base, après le traitement et lors d'un suivi au bout de deux mois. Selon les analyses, le groupe ayant suivi la thérapie avait connu une amélioration significative, tandis que le groupe de contrôle était resté le même.

Acceptance and commitment therapy (ACT) is a modern version of relational frame theory (RFT), an inclusive theory of language and cognition that is an

offshoot of behaviour analysis. From the RFT perspective, language is seen as the main difference between humans and nonhumans and relational framing is the core factor in developing language. From a developmental perspective, more complex language abilities build over time, and relational frames expand throughout one's lifespan (Webster, 2011). ACT is also a descendant of cognitive behavioural therapy (CBT) and it can be considered as a mindfulness-based behavioural therapy. This psychotherapy module confronts the ground rules of most conceptualizations in Western psychology. ACT utilizes an eclectic mix of metaphor, paradox, and mindfulness skills, along with a broad range of experiential exercises and values-guided behavioural interventions. It seems that ACT may alter the combination of thoughts, evaluation of negative experiences, avoidance of emotional experience, and reasons for behaviours in individuals with mental disorders (Bohlmeijer, Fledderus, Rokx, & Pieterse, 2011; Harris, 2006; Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Ost, 2008; Powers, Zum Vorde Sive Vording, & Emmelkamp, 2009; Ruiz, 2010).

In general, the ACT protocol focuses on control-oriented strategies and puts a high emphasis on the concepts of willingness and nonjudgemental examination of worry and other dysfunctional mental experiences. Clients also follow exercises that help them to identify their core values after which they are required to act on their core values. Clients may perform a few daily written homework assignments that are reviewed with the therapist every session. Each session may include a mindfulness exercise and other metaphors and experiential exercises drawn from existing ACT protocols (Hayes, Strosahl, & Wilson, 1999). The ACT for anxiety disorders is an innovative acceptance-oriented behaviour therapy that focuses on diminishing the behaviour regulatory function of anxiety and its related cognitions, and it has a strong emphasis on behavioural change that is consistent with the values of the patient (Eifert et al., 2009).

It has been suggested that ACT may challenge anxiety and experiential avoidance in general, and may control unwanted private events (thoughts, images, bodily sensations) in individuals with anxiety disorders (Eifert et al., 2009). Therefore, this therapeutic technique has two main objectives: (a) teaching acceptance of problematic dysfunctional thoughts and feelings that cannot and perhaps need not be controlled, and (b) dedication and action toward living a life reflecting preferred values (Hasheminasab, Babapour Kheiroddin, Mahmood Aliloo, & Fakhari, 2015).

The effectiveness of ACT for treatment of mental illness, particularly in anxiety disorders, has been examined in clinical trials and experimental studies (Eifert et al., 2009). For example, two large reviews propose that the outcome literature and the keystone empirical basis of ACT may offer a new alternative form of therapy in psychological interventions (Hayes et al., 2006; Ruiz, 2010). Therefore, the purpose of this study is to investigate the efficacy of ACT on reducing dysfunctional metacognitions and anxiety in patients with generalized anxiety disorder (GAD) in a sample of Iranian women outpatients.

The current literature shows that some metacognitive factors play a crucial role in anxiety in both nonclinical samples and patients with chronic disease such as cancer, and it is suggested that psychological intervention can decrease anxiety level in patients with physical diseases when applied in a clinical setting (Khodarahimi & Rasti, 2016; Quattropani, Lenzo, Mucciardi, & Toffle, 2015). One study has shown the importance of targeting psychological flexibility during an ACT intervention to reduce symptoms of anxiety (Fledderus, Bohlmeijer, Fox, Schreurs, & Spinhoven, 2013). A contemporary study has demonstrated that ACT shows a steeper decline in symptoms than does CBT during the initial phase of treatment; and that CBT shows a steeper decline in symptoms than does ACT during the terminal phase of treatment for anxiety symptoms in patients with social anxiety disorder (Niles et al., 2014). Overall, research demonstrates the usefulness of ACT-oriented self-help bibliotherapy in the treatment of anxiety-related symptoms (Ritzert et al., 2016).

ACT focuses on acceptance as a process resulting in increased psychological flexibility that works as a buffer against experiential avoidance and ineffective coping in clients with anxiety disorders (Luoma, Hayes, & Walser, 2007). The purpose of ACT is not to lessen the frequency or severity of aversive internal experiences but rather to diminish the fight to control or remove these experiences and increase the use of mindfulness and meaningful life activities. Mindfulness has been shown to play a significant role in the treatment of GAD (Roemer et al., 2009), and evidence suggests that acceptance-oriented approaches such as ACT may be well suited to treatment of GAD in adults (Sharp, 2012; Wetherell et al., 2011).

Altogether, the aforesaid conceptualization and literature in the fields of ACT, metacognitions, and anxiety show plausible interconnections between these constructs in clinical and nonclinical samples. However, there is a lack of clinical evidence for efficacy of ACT on treatment of metacognitions and anxiety in women with GAD in international and Iranian studies.

The present investigation explores how ACT may influence these symptoms in women outpatients with GAD. Therefore, the main objective of this study is to examine the effectiveness of ACT on the decrease of dysfunctional metacognitions and anxiety among control and clinical groups within an experimental design in outpatient females with GAD. This study speculates that patients with GAD are more likely to experience higher levels of dysfunctional metacognitions and symptoms of anxiety. The present study suggests that the perseverative worry characteristic of GAD is the source of both pathological metacognitions and anxiety, which can be reduced by the patients' participation in ACT. It was predicted that ACT would be an effective technique in decreasing dysfunctional metacognitions and anxiety among women with GAD. The main hypothesis of this study was that women outpatients with GAD in the control group would have higher levels of dysfunctional metacognitions and anxiety in posttreatment when compared with women outpatients with GAD in a clinical group who had been treated using ACT.

METHOD

Participants

The sample consisted of 40 self-referred females with GAD (20 patients in the clinical group and 20 patients in the control group) from Shiraz City, Fars Province, Iran. According to Wilson Van Voorhis and Morgan (2007), this sample size is adequate for computing the statistical inferences and comparisons between clinical and control groups. The mean and standard deviation of age for patients in the clinical and control groups were 33.43 (*SD* = 3.69) and 32.50 (*SD* = 5.74) respectively. Participants were randomly assigned to a block (i.e., clinical or no treatment control group). There was no significant difference in age across the clinical and control groups; $t(1, 26) = .33$, $p < .74$. The number of years of education in this sample ranged from 12 ($n = 30$) to 16 ($n = 10$) years.

All participants were ethnic Fars, were residents of Fars or Kohkelouyeh and Boyer Ahmad provinces, and self-identified as Muslims. All cases in the clinical and control group were clinically diagnosed with GAD based on the *DSM-5* (American Psychiatric Association [APA], 2013). The participants in the study did not meet diagnostic criteria for any other psychological disorders. All cases were diagnosed via semistructured clinical interviews by two clinical psychologists. They were part of the research team and interviews were standardized across all participants. No participants were being treated with psychopharmaceutical drugs or other forms of psychotherapy during the research study.

Instruments

The demographic questionnaire included questions regarding participants' status, age, ethnicity, religion, and educational level. Two inventories were used: (a) the Meta Cognitions Questionnaire (MCQ-30) and (b) the Beck Anxiety Inventory (BAI).

Metacognitions Questionnaire (MCQ-30; Wells & Cartwright-Hatton, 2004). The MCQ-30 is a 40-item measure with five subscales: Cognitive Confidence (CC), Positive Beliefs about Worry (BBW), Cognitive Self-Consciousness (CSC), Negative Beliefs about Uncontrollability of Thoughts and Danger (NBUTD), and Beliefs about the Need to Control Thoughts (BNCT). The MCQ-30 assesses different beliefs about worry, intrusive thoughts, and meta-cognitive processes, and measures the worry component of anxiety. Participants rated their agreement with each item on a scale ranging from 1 (*never*) to 4 (*almost always*). Subscale scores range from 6 to 24, with the total score range being 30–120. Higher scores indicate increased levels of unhelpful metacognitions.

The MCQ-30 showed good internal consistency, convergent validity, and test–retest reliability in clinical samples (Khodarahimi & Rasti, 2016; Wells & Cartwright-Hatton, 2004). The reliability of the MCQ-30, Positive Beliefs about Worry, Cognitive Self-Consciousness, Negative Beliefs about Uncontrollability of Thoughts and Danger, and Beliefs about the Need to Control Thoughts in this study, using Cronbach's alpha, was .95, .89, .88, .96, and .92, respectively.

Beck Anxiety Inventory (BAI; Beck & Steer, 1990). The BAI is a 21-item self-report instrument that measures overall anxiety. Participants are requested to rate the severity of each symptom by using a 4-point scale ranging from 0 (*not at all bothered*) to 3 (*severely bothered*). The internal consistency of the BAI using Cronbach's alpha has ranged from .90 to .94 in both clinical and nonclinical samples (Kabakoff, Segal, Hersen, & Van Hasselt, 1997; Steer, Kumar, Ranieri, & Beck, 1995). Validity of the BAI has also been confirmed in community samples, notably in Iran (Creamer, Foran, & Bell, 1995; Khodarahimi & Nikpourian, 2012). The BAI internal reliability using Cronbach's alpha was .94 in the current study.

Procedure

The study used an experimental trial design with two groups in pretreatment, posttreatment, and 2-month-follow-up after termination of intervention. All the patients in the control and clinical group were recruited from an outpatient clinic in Shiraz. Utilizing diagnostic criteria from the *DSM-5* (APA, 2013), potential self-referred women patients were evaluated through a clinical interview and all subjects were screened for differential diagnosis of GAD and comorbid disorders. All patients were screened for psychiatric disorders by two clinical psychologists using diagnostic criteria and, after meeting inclusionary criteria, were recruited for this study.

Within a controlled randomized trial (CRT), we randomly allocated patients to one of two groups: the ACT or the control group. Treatment assignment was done randomly within blocks of two. In this study, patients were individuals who resembled each other in some respect (i.e., gender, ethnicity, religion, and the numbers of years of education) but who differed in their participation status (i.e., control or experimental groups). Individuals in the control group were matched to patients in the clinical group. After reading the Informed Consent Form, all patients had the opportunity to ask any questions about the study before signing the form. The patients in the control group would receive psychotherapy services after the termination of this study. After informed consent was acquired, all patients in the clinical and control groups completed a demographic questionnaire and two inventories in a pre- and posttreatment assessment and follow-up.

We compared the patients' situations within a clinical framework. In this study, the ACT protocol focused on the concepts of willingness and nonjudgemental observation of worry and other dysfunctional internal experiences, incorporated exercises to help patients identify their core values, and used home exercises. Each group treatment session included a mindfulness exercise, metaphors, and experiential exercises that were drawn from the existing ACT protocols (Hayes et al., 1999). The ACT was administrated by the first author for 12 sessions over 12 weeks. The therapist had at least four years of experience delivering CBT. To maintain consistency of application of ACT across the participants in these sessions, therapy sessions were reviewed in weekly supervision sessions.

RESULTS

It was hypothesized that measures of metacognitions (as indexed by the MCQ-30) and anxiety (as indexed by the BAI) would systematically decline among patients who participated in ACT between posttreatment and follow-up assessments in comparison to individuals in the control group. To investigate the possible differences for both groups in this hypothesis, a multivariate analysis of variance (MANOVA) was conducted using group status as an independent variable, with their scores on metacognitions and anxiety during pre- and posttreatment as dependent variables. Results from this MANOVA demonstrated a significant multivariate effect for the group status, *Wilks' Lambda* = .01, $F(18, 20) = 44.06$; $p < .001$, with regards to dependent variables in pre- and posttreatment.

The two groups did not show significant differences on metacognitions and anxiety (and their subscales) in pretreatment assessment. In the pretreatment assessment, tests of between-subjects effects for group status did not show any significant differences among control and clinical groups on CC, $F(1, 39) = .40$, $p < .53$; BBW, $F(1, 39) = 2.92$, $p < .09$; CSC, $F(1, 39) = 1.31$, $p < .26$; NBUTD, $F(1, 39) = 3.30$, $p < .08$; BNCT $F(1, 39) = .40$, $p < .53$; the MCQ-30, $F(1, 39) = .21$, $p < .64$; and the BAI, $F(1, 39) = 1.70$, $p < .20$, dependent variables (see Table 1).

Table 1
Outcome Measures of Metacognitions and Anxiety in Pre- and Posttreatment Assessments

		Groups						
		Control		Clinical				Effect
Stages	Variables	*M*	*SD*	*M*	*SD*	F	p	Size (d)
Pre-treatment	CC	15.23	1.58	14.87	1.45	.40	.53	
	BBW	15.23	1.42	16.07	1.16	2.92	.09	
	CSC	15.00	1.41	14.40	1.35	1.31	.26	
	NBUTD	14.92	1.32	15.93	1.58	3.30	.08	
	BNCT	15.31	1.18	15.00	1.36	.40	.53	
	MCQ-30	75.69	3.25	76.26	3.30	.21	.64	
	BAI	34.92	4.62	32.40	5.46	1.70	.20	
Post-treatment	CC	15.15	1.21	12.60	1.35	27.27	.001	1.65
	BBW	14.69	1.31	10.60	1.54	55.77	.001	2.36
	CSC	14.92	1.25	11.93	1.10	45.13	.001	2.12
	NBUTD	15.31	1.18	12.27	1.38	38.31	.001	1.95
	BNCT	14.69	1.54	14.93	1.03	.24	.62	.15
	MCQ-30	74.76	3.11	62.33	3.06	113.07	.001	3.36
	BAI	32.69	7.18	12.73	1.87	108.03	.001	3.28

Follow-up	CC	15.69	1.18	12.33	1.34	48.52	.001	2.20
	BBW	15.31	1.37	10.47	1.30	91.25	.001	3.02
	CSC	15.31	1.10	11.27	1.38	70.90	.001	2.66
	NBUTD	15.69	1.10	11.00	1.51	85.24	.001	2.91
	BNCT	14.92	1.44	13.67	1.11	6.76	.01	.82
	MCQ-30	76.92	2.25	58.73	3.05	312.26	.001	5.58
	BAI	32.77	6.66	12.20	1.93	131.02	.001	3.61

Note. CC = cognitive confidence, BBW = positive beliefs about worry, CSC = cognitive self-consciousness, NBUTD = negative beliefs about uncontrollability of thoughts and danger, BNCT = beliefs about the need to control thoughts, MCQ-30 = Meta Cognitions Questionnaire, BAI = Beck Anxiety Inventory.

In the posttreatment assessment, tests of between-subjects effects showed significant differences among the patients of the control and clinical groups on the dependent variables of CC, $F(1, 39) = 27.27$, $p < .001$; BBW, F 1, 39) = 55.77, $p < .001$; CSC, F 1, 39) = 45.13, $p < .001$; NBUTD, $F(1, 39) = 38.31$, $p < .001$; the MCQ-30, $F(1, 39) = 113.07$, $p < .001$; and the BAI, $F(1, 39) = 108.03$, $p < .001$. In the posttreatment assessment, tests of between-subjects effects did not show significant differences among the patients of the control and clinical groups on the dependent variable of BNCT, $F(1, 39) = .24$, $p < .62$ (see Table 1).

In the follow-up assessment, tests of between-subjects effects for group status showed significant differences among the control and clinical groups on the dependent variables of CC, $F(1, 39) = 48.52$, $p < .001$; BBW, $F(1, 39) = 91.25$, $p < .001$; CSC, $F(1, 39) = 70.90$, $p < .001$; NBUTD, $F(1, 39) = 85.24$, $p < .001$; BNCT, $F(1, 39) = 6.76$, $p < .01$; the MCQ-30, $F(1, 39) = 312.26$, $p < .001$; and the BAI, $F(1, 39) = 131.02$, $p < .001$ (see Table 1). Finally, a different approach was used to compare pre- and posttreatment as an independent variable: It did not reveal any significant interaction effects.

DISCUSSION

The results from the main hypothesis in this study indicated that ACT has a significantly positive effect in decreasing dysfunctional metacognitions and a positive effect on Cognitive Confidence (CC), Positive Beliefs about Worry (BBW), Cognitive Self-Consciousness (CSC), Negative Beliefs about Uncontrollability of Thoughts and Danger (NBUTD), and Beliefs about the Need to Control Thoughts (BNCT) subscales in women outpatients with GAD. Results of the present study showed that ACT has a significant effect on diminishing anxiety levels in women with GAD as seen on the Beck Anxiety Inventory (BAI). These findings are consistent with the literature that supported the effectiveness of ACT on decreasing anxiety symptoms in patients with mental disorders (Bohlmeijer et al., 2011; Harris, 2006; Hayes et al., 2006; Ost, 2008; Powers et al., 2009; Ruiz,

2010), and they are congruent with the previous literature on ACT application in the treatment of anxiety disorders (Eifert et al., 2009; Hasheminasab et al., 2015).

However, with respect to other confounding variables such as cultural and personality factors, the novelty of the present study demonstrates the role of ACT in decreasing dysfunctional metacognitions in women outpatients with GAD. In line with previous conceptualizations of ACT (Eifert et al., 2009; Fledderus et al., 2013; Hayes et al., 2006; Ruiz, 2010), this study suggests that this form of psychotherapy can be an efficacious therapy in reducing dysfunctional metacognitions and anxiety in patients with GAD. ACT can increase psychological flexibility during therapeutic sessions because of its emphasis on the concepts of willingness, nonjudgemental observation of worry, exercises of self-help for recognition of personal values, completion of homework outside of therapy, mindfulness, and application of metaphors and experiential exercises (Hayes et al., 1999).

The present study indicates ACT may be suited to treatment of anxiety among patients with GAD in Iranian culture. The application of metaphors, myths, and experiential experiences such as gnosis has an ancient origin in Iranian culture and is therefore a common aspect of Iranian thinking processes. This cultural background is analogous to the Eastern basics of ACT as it is outlined in academic literature (Bohlmeijer et al., 2011; Harris, 2006; Hayes et al., 2006; Ost, 2008; Powers et al., 2009; Ruiz, 2010). In conclusion, the present study adds to the body of literature on the clinical application of ACT with regards to dysfunctional metacognitions and anxiety in women with GAD in an Iranian sample.

One limitation of the study was that there was only one treatment group that received treatment from only one counsellor, thus raising the question of transferability to other counsellors. The present study is also limited due to its small sample size. The women completed self-rating measures, which could have been responded to carelessly or inaccurately. The results may not generalize across cultures or populations. Additionally, the study did not determine if the patients' GAD resolved or attenuated sufficiently for them to no longer carry the diagnosis.

The study does, however, offer some promising support for the potential benefits of ACT with outpatient populations. Forthcoming investigations can apply experimental trial designs for comparative utilization of ACT in women and men with GAD, and in particular with the use of more specific measures of anxiety, including posttreatment evaluation of specific anxiety disorders.

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