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Research Paper

Efficacy of Cognitive Behavioral Therapy on Anxiety Disorders

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ABSTRACT

Objective: A few previous studies have examined cognitive behavioral treatment for anxiety disorders. ***Methods:*** The study was based on a quasi-experimental study include two groups pre-post-test design with three months of follow-up. 21 total numbers of participants were taken to the population by applying the purposive sampling technique. All patients received cognitive behavioral therapy. Data was analyzed using One-Way Repeated Measures ANOVA. ***Results:*** There was a significant difference in the level of anxiety $p<0.05$ across three time periods. ***Conclusions:*** It was concluded that cognitive behavioral therapy was a suitable intervention for reducing the anxiety level for clients. These findings contribute to the broader literature on treatment heterogeneity, and may inform personalized care for persons seeking anxiety treatment in primary care settings.

Keywords: *Cognitive Behavioral Therapy, Anxiety Disorders*

Anxiety is a universal human emotion; it alerts us to potential threats and motivates us to prepare for challenges (Simpson, Neria, Lewis-Fernández, & Schneier, 2010). Anxiety is a state of uneasiness, accompanied by dysphoria and somatic signs and symptoms of tension, focused on apprehension of possible failure, misfortune, or danger. Anxiety disorders are a class of mental disorders in DSM in which anxiety features prominently. Anxiety disorders in DSM include: specific phobia, separation anxiety disorder, agoraphobia, selective Mutism, generalized anxiety disorder; social anxiety disorder, panic disorder, acute stress disorder, phobias, obsessive-compulsive disorder, and acute-posttraumatic stress disorders (Colman, 2015).According to DSM-5Anxiety disorders include disorders that share features of excessive fear and anxiety and related behavioral disturbances. ***Fear*** is the emotional response to real or perceived imminent threat, whereas, ***anxiety*** is anticipation of future threat. Obviously, these two states overlap, but they also differ, with fear more often associated with surges of autonomic arousal necessary for fight or flight, thoughts of immediate danger, and escape behaviors, and anxiety more often associated with muscle tension and vigilance in preparation for future danger and cautious or avoidant behaviors. Sometimes the level of fear or anxiety is reduced by pervasive avoidance behaviors. The anxiety disorders differ from one another in the types of objects or situations that induce fear, anxiety, or avoidance behavior, and the associated cognitive ideation. Thus, while the anxiety

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disorders tend to be highly comorbid with each other, they can be differentiated by close examination of the types of situations that are feared or avoided and the content of the associated thoughts or beliefs (Diagnostic, A. P. A, 2013).

The cognitive model of anxiety proposes that individuals who experience chronic, compelling, and pervasive anxieties maintain beliefs that make them prone to interpret numerous situations as posing risk and threat. These beliefs (also called underlying assumptions) often centre on themes of personal acceptability, personal adequacy, and control. More specifically, the generally anxious patient may believe that the failure to perform a given task perfectly means that he or she is defective and incompetent. Similarly, such a patient may assume that by making a slight social error he or she will be humiliated, vilified, and cast aside by acquaintances, friends, and loved ones. Further, these patients frequently demonstrate a fear of "what might happen?" if they neglect to take rigorous measures to guarantee favourable outcomes. By holding such beliefs, patients place themselves under excessive and continual pressure to succeed and ward off trouble. These individuals are identifiable in everyday life as people who seem never to relax, who continually feel "keyed up" or "on edge," and who are dubbed as "worry warts" by others in their lives (Beck, Emery, and Greenberg, 1985; Clark, 1988; Newman, 2015). Often, people try to cope with their negative reactions by avoiding situations or experiences that make them anxious. Unfortunately, avoidance can backfire and actually feed the ***anxiety***. Psychologists are trained in diagnosing anxiety disorders and teaching patients healthier, more effective ways to cope (American Psychological Association, Ed; Shannon, Lynn & Vaile,2016).

CBT attempts to treat anxiety disorders by teaching clients to identify, test, and modify the thoughts and beliefs that accompany their excessive alarm reactions, as well as the avoidance behaviors that perpetuate their faulty appraisals and responses.CBT techniques for anxiety also focuses on helping clients reduce their worrying, evaluate predictions about future disasters, and learn how to handle problems when they do arise. CBT for anxiety disorders is a collaborative process of investigation, reality testing, and problem-solving between therapist and client (Cory & Newman, 2015).

METHODOLOGY

In present study the investigators examined the effectiveness of cognitive behavior therapy in the management of the anxiety disorders across three times periods (pre-intervention, post-intervention and three months follow-up).The study was based on a quasi-experimental study including pre-post-test design with three months of follow-up. In the present study, Purposive sampling technique was used to collect the data. Clients were 21. The symptoms of anxiety were based on DSM-V criteria. They were drawn from Mehrandish Clinic in Bushehr, Iran. Clients referred by psychiatrists. All patients received cognitive behavioral therapy. Moreover, the subjects all had no history of CBT in order to avoid affecting the present study's results. Initially, the subjects were tested as a pre-test by questionnaires. Following clients received eleven treatment sessions according to protocol and the determined timing. Then, a post-test was done in order to measure changes during treatments, and finally, a retest as a follow-up was done in order to measure changes during three months after therapy. Before the therapy sessions, a written consent based on the Helsinki ethical protocol was taken from the patients. All patients have ensured the confidentiality of research and its results. All the analysis was done using SPSS 16 software and statistical significance was set to 0.05.

Tools

Personal Data Sheet (PDS): The PDS includes the name, gender, age, and psychiatric & psychological history of clients.

Depression, Anxiety and Stress Scale (DASS-42): DASS developed by (Lovibond & Lovibond, 1995). The DASS is a set of three self-report scales designed to measure the negative emotional states of depression, anxiety and stress. Each of the three DASS scales contains 14 items, divided into subscales of items with similar content. Subjects are asked to use 4-point severity/frequency scales to rate the extent to which they have experienced each state over the past week. Scores for Depression, Anxiety and Stress are calculated by summing the scores for the relevant items. A sum of the scores for each of the fourteen questions completed by each participant, in each of the sub-scales. The DASS questionnaire is public domain, and so permission is not needed to use it. The DASS questionnaires and scoring key may be downloaded from the DASS website and copied without restriction (Lovibond & Lovibond, 1995).

Validity and Reliability

Gamma coefficients that represent the loading of each scale on the overall factor (total score) are 0.71 for depression, 0.86 for anxiety, and 0.88 for stress. One would expect anxiety and stress to load higher than depression on the common factor as they are more highly correlated and, therefore, dominate the definition of this common factor (Lovibond & Lovibond, 1995). Reliability of the three scales is considered adequate and test-retest reliability is likewise considered adequate with 0.71 for depression, 0.79 for anxiety and 0.81 for stress (Brown, Korotitsch, Chorpita, & Barlow, 1997). Asghari, Mehrabian, Paknejad, and Sadaf (2010) considered the psychometric properties of the DASS in Iranian patients. The criteria of Cronbach's Alpha in order was for depression = 0.87, anxiety = 0.81 and stress = 0.87. The criteria of Cronbach's Alpha in present study was for depression = 0.74, anxiety = 0.81 and stress = 0.84.

Therapy Conditions

Sessions occurred once per week for 11 sessions before post-assessment, the sessions were 40-50 minutes in duration except first session (most standard cognitive behavior therapy sessions last for about 40–50 minutes, but the first one often takes an hour). According to Whitfield (2010) therapists can use cognitive behavior therapy in three types, including: 1. One to one basis. 2. Group therapy. 3. Self-help format.In this program researcher used a Cognitive Behavior Group Therapy (CBGT) approach in the management of anxiety. Aforementioned before starting the sessions at a short meeting, the researcher described the process of research for each subject. At the beginning of therapy, the researcher said to the clients that each session of this program teaches a new skill you can use to help manage your anxiety that will complement your medical treatment. Pre-treatment processes in this clinical research were: 1. Sampling. 2. Obtain informed consent from the clients. 3. Assess patients, a clinical interview, and the completed self-report scales. 4. Therapy.

Treatment processes

Most clients feel comfortable when you tell them how and why you would like to structure sessions. Doing so demystifies the process of therapy and keeps treatment on track. Before the first session, you will review the patient's intake evaluation and you will keep your initial conceptualization and treatment plan in mind as you conduct the session, being prepared to change course if need be.

Session-By-Session Treatment Protocol

First session: Education on anxiety, to review assessment results, do a mood check, Identify problems and set general goals for treatment, Educate the clients about the cognitive model, To discuss a problem, like an impact anxiety has on your life, to understand and description of the anxiety cycle, to provide or elicit a summary, to set homework, review homework assignment, elicit feedback. **Second Session:**To review homework of the first session, to introduce theories of anxiety, to introduce several relaxation techniques, to learning and practicing diaphragmatic breathing, to set homework. **Third Session:** To review homework of the second session, to training and learning progressive muscle relaxation, to training and practicing visual imagery, to set homework. **Fourth Session:** To review homework of the third session, to explain and to learn about automatic thoughts, to discuss thoughts about anxiety, and also emotions plus to understand the relationship between them thoughts and disorders, to review cognitive errors and to identify their errors, to introduce abc model and to practice using it, a: is related to Activating Event. b: is representing the Beliefs and c:is related to Consequences of the model, to set homework. **Fifth Session:** To review homework of the fourth session, about the relationship between negative thoughts and anxiety was a discussion, training about cognitive restructuring, the therapist in this session taught to clients about to practice changing negative thoughts into positive coping thoughts, to set homework. **Sixth Session:** To review homework of the fifth session, to define stress, and review the meaning of anxiety, to discuss and to understand the "fight-or-flight" response, to identify and to review sources of stress and anxiety, to discuss and to examine the relationship between stress and anxiety, to learn and to examine ways to decrease stress and anxiety, to set homework. **Seventh Session:** To review homework from last session, to introduce time-based pacing, to discuss and to practice pacing activities, to review pacing activities and techniques, to set homework. **Eighth Session:** To review homework, to identify enjoyable activities such as Relaxing, Cleaning, Reading, travelling and etc., to schedule enjoyable activities, to set homework. **Ninth Session:** To review homework, discuss about anger and to define anger, to discuss the relationship between anxiety and anger, to discuss the relationship between emotions and anxiety, to learn Anger Management, to discuss Response Styles and to introduce Assertive Responding, to set homework. **Tenth Session:** To review homework, to interpret the necessity of sleep, to discuss about ways to improve sleep, to set homework. **Eleventh Session:** To review homework, to Discuss relapse prevention and flare-up planning, to review and discuss their progress, and at least, to set future goals for clients, end of treatment.

During the last 11 sessions, they have learned many different skills to help them manage anxiety, also, stress and anger. In this session, they learned how to prepare themselves for an anxiety flare-up. As this is the last session of therapy, they also reviewed their progress and set their future goals.

Sources for therapy process: 1. Anxiety disorders and phobias: A cognitive approach (A. Beck, Emery, & Greenberg, 1985). 2. Cognitive therapy of depression (A. Beck, Rush, Shaw, & Emery, 1979). 3. Depression: Clinical, experimental, and theoretical aspects (A. Beck, 1967). 4. Cognitive behavior therapy: Basics and beyond (J. Beck, 2011). 6. Cognitive therapy and the emotional disorders (A. Beck, 1979). 7. A therapist's guide to brief cognitive behavioral therapy (Cully & Teten, 2008).

Post-Treatment and Follow-Up Process

In the present study for post-treatment and follow-up process, the clients completed self-report scales.

Procedure of Research

The Head of the Psychological & Counseling Center Mehrandish, Bushehr, Iran, Dr. Ali Poladi Rieyshari agreed with data collection in his clinic. Data were collected with face-to-face clinical interview method and at least cognitive-behavioural therapy performed by clinical Psychologist. Completion was not obligatory, but patients who did not wish to participate were asked to leave the therapy after attending the clinic. This procedure rendered a return rate of 100%. Questionnaires were completed comprehensively, minimizing any missing data. Average completion time was 45 minutes. No financial reward was offered to clients. Data was collected from Psychological & Counseling Center; Mehrandish, through clinical interview and intervention.

RESULTS

Descriptive Statistics: The mean age of the patients were 40 years (SD = 10.747). The range of ages of the clients was from 22 to 58 years.47.6% (N = 10) of the clients were ≤ 38 years and 52.4% (N = 11) of them were ≥ 39 years.52.4% (N = 11) of the clients were Males and 47.6% (N = 10) of them were Females. 42.9% (N = 9) of the clients were Married and 57.1% (N = 12) of them were Single.

For examine the hypothesis at least three variables are involved

Anxiety at Time 1: Anxiety administered prior to the intervention (pre-test). Anxiety at Time 2: Anxiety administered after the intervention (post-test). Anxiety at Time 3: Anxiety administered three months later (follow-up).

Table 1

Showing descriptive statistics characteristics for anxiety of clients across three time levels

Variable	N	Mean	Std. Deviation
Anxiety pre-test	21	47.71	5.900
Anxiety post-test	21	46.38	6.103
Anxiety Follow-up	21	46.47	6.038

Table 1 shows that the descriptive statistics characteristics for anxiety of clients who suffer from anxiety disorders across pre-test, post-test, and three months follow-up. The highest anxiety is at pre-treatment (47.71) that it drops at post-treatment (46.38) and they don't change very much at three months follow-up (46.47).

Table 2

Showing the main effect for time with Wilks' Lambda test of anxiety across three time levels for clients

Effect	Test	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Time	Wilks' Lambda	0.098	87.40	2	19	0.001	0.90

Within Subjects Design: Time

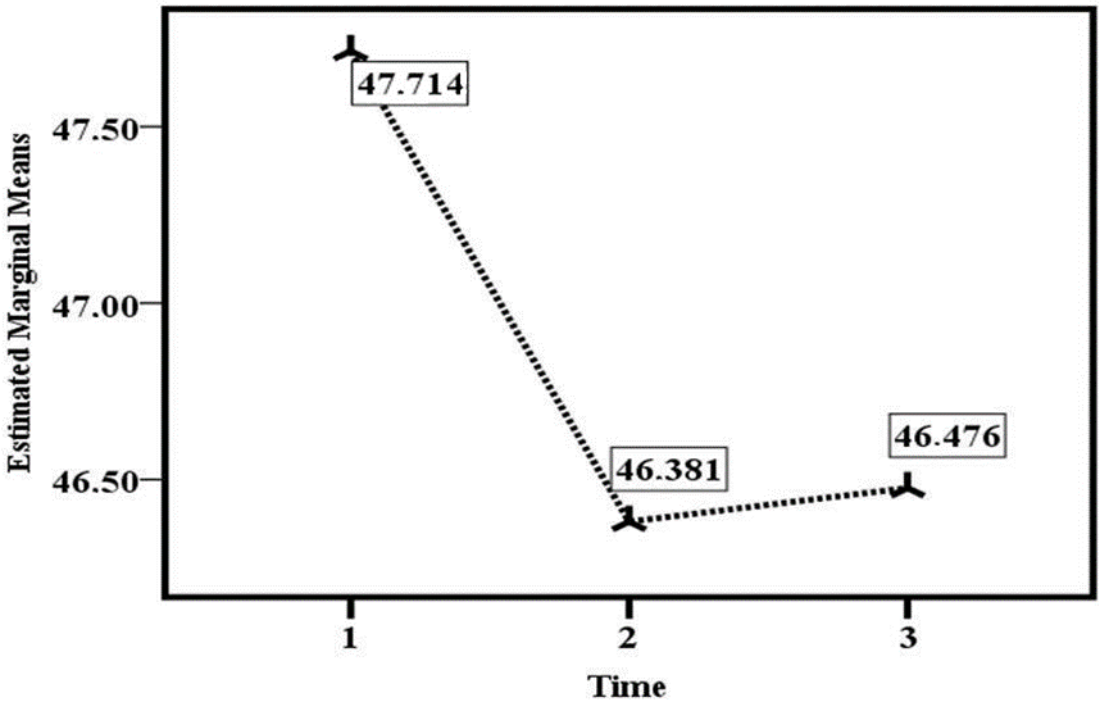
In the first hypothesis; the value for Wilks' Lambda is 0.098, with a probability value of 0.0001 (which really means $p < 0.001$). The p-value is less than 0.001; therefore we can conclude that there is a statistically significant effect over time. This suggests that there was a change in anxiety across the three different time periods. Although we have found a statistically significant difference between the three sets of scores, we also need to assess the effect size of this result. The value we are interested in is Partial Eta Squared. The value

obtained in this study is 0.90. Using the commonly used guidelines suggested by Cohen (1988) this result suggests a very large effect size. If we obtain a statistically significant result from the above analyses, this suggests that there is a difference somewhere among our groups. It does not tell us which groups or set of scores (in this case, Time 1, Time 2, Time 3) differ from one another.

Table 4.3
Showing the pair wise comparisons of the anxiety across three levels for clients

(I) Time		(J) Time		Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
							Lower Bound	Upper Bound
	1		2	1.333*	0.105	0.001	1.058	1.609
	1		3	1.238*	0.095	0.001	0.989	1.487
	2		3	-0.095	0.066	0.487	-0.267	0.076
Based on estimated marginal means								
*. The mean difference is significant at the, 0.05 level.								
a. Adjustment for multiple comparisons: **Bonferroni**.								

The results indicate that time 1 is different from time 2 and time 3 but there is not a difference between time 2 and time 3. The values of significance for time 1 and time 2 is less than 0.001 which is significant, but the values of significance for time 2 and time 3 is not less than 0.001 the value for that is 0.48 which is not significant.



Fg. 4.1.Showing line graph of the mean scores of anxiety across three time levels for clients

Presenting the results from One-Way Repeated Measures ANOVA of anxiety across three time periods for clients

One-way repeated measures ANOVA was conducted to compare anxiety at pre-test, post-test and three months follow-up. The dependent variable was anxiety. The independent variable

was cognitive behavior therapy. Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, with no serious violations noted. There was a significant effect over time, Wilks' Lambda = 0.098, F (2, 19) = 87.40, $p < 0.001$, multivariate partial eta squared = 0.90. Based on the results obtained above, the first hypothesis was supported.

DISCUSSION

This study was aimed to examine the effectiveness of cognitive behavior group therapy in the management of anxiety disorders. In so doing, the DASS-42 questionnaire was administered prior to and after CBT among clients, moreover, pre- and post-tests with three months follow-up were employed. The results indicate that CBT was able to significantly reduce symptoms of anxiety disorders. As mentioned before anxiety disorders have a high prevalence, Lifetime prevalence estimates 28.8% (Kessler, Chiu, Demler, & Walters, 2005).Cognitive behavior approach appears to be both efficacious and effective in the treatment of anxiety disorders, but more high-quality studies are needed to better estimate the magnitude of the effect (Otte, 2011).

CONCLUSIONS

It observed that cognitive behavior group therapy in terms of anxiety management is effective in clients. It can be concluded that cognitive behavioral group therapy is remarkably effective for reducing anxiety. According to the findings, cognitive-behavioral group therapy is an effective method in decreasing anxiety. Finally, it is recommended to use cognitive-behavioral therapy in healthcare systems and psychological clinics to improve the physical and mental health of clients with the aim of reducing their anxiety.

This study considers the following limitations: 1). This study relies on paper and pencil instruments and self-report, which are subject to socially desirable responses. 2). This study includes clients who are referred by various physicians and voluntarily decide to participate in the research. 3). This study focuses on any obtained changes in a relatively small sample across an eleven-week period. Generalizations to other populations and time periods may need to be made cautiously. 4). This intervention is done by one therapist and the outcome may have been partially influenced by the therapist's experience. This may make it more difficult to attribute the findings to the intervention. 5). In a quasi-experimental research, pre-existing factors and other influences are not taken into account because variables are less controlled in quasi-experimental research. For example, when examining the impact of smoking by pregnant mothers, there may be other factors such as diet, education, overall health, and access to health care in general that may be playing a role in the outcome. Furthermore, the cognitive behavior program is highly manualized, which helps to assure fidelity of treatment delivery. This limitation is in itself a hidden strength in that it speaks to the need for treatment fidelity to be independent of therapist/facilitator. That is, if a treatment is so dependent on the therapist/facilitator, then the practical utility of a treatment is called into question and is likely to be of little interest to the therapeutic community.

Recommendations for Future Research

1. Further research should focus on addressing the effect of combined versus single treatments, the longer term effects of cognitive behavior therapy and combined treatments and effective delivery methods. 2. Gender was constrained to male and female and did not account for the fluidity of gender and other dimensions of gender identity (e.g., transgender, bisexual etc.), hence, it is suggested that in future studies, not only study men and women but all dimensions related to gender identity should also be considered.3. Future research should

use a randomized controlled design to better understand the outcomes. 4. These findings, if replicated in additional studies, have important clinical and economic implications. Totally, it seems that the use of this method is clinically beneficial, effective and economically feasible and advisable. Nonetheless, it is expected in future studies with the use of larger examples of longer treatment courses, we would have wider evaluations, longer follow-up, and insufficiencies of this research will be cleared.

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Conflict of Interest

The authors colorfully declare this paper to bear not conflict of interests

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