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Review Article

Effectiveness of Cognitive Behavioral Therapy

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Abstract

Introduction: Cognitive behavioral therapy (CBT) has been demonstrated by numerous studies to be efficient for the management of a large variety of mental health conditions. Cognitive behavioral therapy is classically defined as a short-term, skills-focused management that aims at modifying the maladaptive emotional responses of the patient by altering the patient's thoughts, and/or behaviors. The origins of Cognitive behavioral therapy could be traced back partly to several theories hypothesized by early investigators including BF Skinner and Joseph Wolpe, who started the behavioral therapy movement during the 1950s. Behavioral therapy suggests that altering behaviors results in changes in the emotions and cognitions including appraisals.

Aim of Work: The purpose of this article is to give a thorough summary of two classifications of Cognitive behavioral therapy methods that allow for a wide range of anxiety disorder-specific managements and to give a review of the current empirical research that is associated with these techniques.

Methodology: We did a systematic search for recent advances in the protocols of Cognitive behavioral therapy using PubMed search engine and Google Scholar search engine.

Conclusion: Our review shows the benefits of using different cognitive behavioral therapy protocols to manage patients who suffer from anxiety conditions. Exposure protocols and cognitive protocols represent the most commonly used cognitive behavioral therapy techniques. The efficacy of exposure is still considered to be unchallenged for several anxiety conditions including specific phobias and obsessive-compulsive disorders. nevertheless, despite that previous research demonstrated the better outcomes following exposure techniques when compared to receiving no treatment, collective research has not always demonstrated that exposures provide significantly better outcomes when compared to cognitive therapies.

Keywords: *Anxiety Disorders; Cognitive Behavioral Therapy; Psychiatry*

Introduction

Cognitive behavioral therapy (CBT) has been demonstrated by numerous studies to be efficient for the management of a large variety of mental health conditions [1], including anxiety-related conditions [2]. Cognitive behavioral therapy has also been linked to improvements in the quality of life of most patients who develop anxiety [3]. Cognitive behavioral therapy is classically defined as a short-term, skills-focused management that aims at modifying the maladaptive emotional responses of the patient by altering the patient's thoughts, and/or behaviors. The origins of Cognitive behavioral therapy could be traced back partly to several theories hypothesized by early investigators including BF Skinner and Joseph Wolpe, who started the behavioral therapy movement during the 1950s. Behavioral therapy suggests that altering behaviors results in changes in the emotions and cognitions including appraisals. Since its introduction, Cognitive behavioral therapy has improved significantly to later include cognitive psychotherapy, which was introduced by the earliest research of several psychologists like Albert Eilis and Aaron T Beck. Cognitive behavioral therapy concentrates mainly on altering cognitions, which is suggested to alter emotions and behaviors. As a result, the terms cognitive therapy, behavioral therapy, and cognitive-behavioral therapy have been introduced. For the purposes of clarity, in this review we will classify both the cognitive and behavioral therapies under the broad term "Cognitive behavioral therapy" and we will acknowledge that the relative focus of cognitive vs behavioral techniques differs among different management protocols.

Throughout the years a huge number of different guidelines have been made to provide Cognitive behavioral therapy to more patients who have post-traumatic stress disorder, generalized anxiety disorder, obsessive-compulsive disorder, panic disorder, specific phobias, and social anxiety disorder, along with patients who have non-specific anxiety clinical manifestations. There is a relative wealth of data regarding these treatment options and their usage, and many published books are specific to describing Cognitive behavioral therapy-based programs for each specific anxiety condition. Thus, a literature review of the Cognitive behavioral therapy programs for each anxiety disorder is out of the scope of this manuscript. nevertheless, although there is a large number of diverse Cognitive behavioral therapy protocols for managing anxiety-related conditions, significant similarities are usually present among these different protocols which give a strong basis for discussion.

Purpose of the Study

The purpose of this article is to give a thorough summary of two classifications of Cognitive behavioral therapy methods that allow for a wide range of anxiety disorder-specific managements and to give a review of the current empirical research that is associated with these techniques.

Methodology

We did a systematic search for recent advances in the protocols of Cognitive behavioral therapy using PubMed search engine (http://www.ncbi.nlm.nih.gov/) and Google Scholar search engine (https://scholar.google.com). All relevant studies were retrieved and discussed. We only included full articles.

The terms used in the search were: anxiety disorders, Cognitive behavioral therapy, psychiatry.

Exposure therapy

Exposure-based protocols are considered to be among the most commonly used Cognitive behavioral therapy protocols that are used for the management of patients who have anxiety conditions. One of the theoretical frameworks for knowing the rationale for exposure-based managements arises from emotional processing hypothesis. Based on emotional processing hypothesis, fear is considered to be represented by the associative networks (cognitive fear structures) that keep data on the feared stimulus, fear responses (like escape, avoidance, and psychophysiological responses), and the meanings of different stimuli and responses (like tiger is equal to danger,

increased heart rate can mean the presence of a heart attack). When a certain stimulus that is present in the environment is encountered and it resembles the other feared stimulus, these linked data networks will activate the fear center. The fear center is considered to be pathological when the associations between different stimuli, responses, and their meanings are not matched to reality, like when it is stimulated and activated when there are only safe stimuli or responses which will resemble the feared stimuli. In addition, the fear center is kept normal by the presence of avoidance behaviors that prohibit the new learnings to happen.

Exposure is suggested to alter the pathophysiological fear center by first stimulating it and then sending new data that disapproves the previous pathological, wrong links in the fear center (for example, increased heart rate will not cause a heart attack, crowded malls will not cause violent attacks). By confronting these feared stimuli or responses and enhancing the corrective information in the memory of the fear center, fear is thought to be decreases. Exposure could take different and several forms that will include imaginal, real, and interoceptive. Imaginal exposures happen in cases when the patients vividly imagine the feared situations and consequences and will not avoid their later anxiety. On the other hand, *in vivo* exposures usually involve gradual approaches to areas, things, humans, and/or situations which were previously avoided despite being normally safe. Finally, Interoceptive exposure, that is most commonly used in managing panic disorders, involves deliberately stimulating the physical sensations the patients fear are indicative of the presence of a panic attack. these exposures and techniques are considered to be similar in their functions as they make it possible for the patient to get newer learning in order to be able to alter the fear center. generally, exposure therapies are usually of relatively limited duration and are classically done within about ten sessions.

Efficacy/effectiveness of exposure for anxiety disorders

Exposure therapies that are for anxiety conditions usually tend to be on similar shapes, with certain differences that emerge most usually in the focus on the exposure content, that is dependent on the patients' presenting manifestations. Exposure managements are also different in their relative focus on several exposure techniques including *in vivo*, imaginal, and/or interoceptive techniques. The efficiency of exposure therapies has been well studied for patients who suffer from different anxiety conditions, and exposure therapy is now considered to be the standard treatment for several types of anxiety conditions.

Post-traumatic stress disorder

Post-traumatic stress disorder is usually managed using long-term exposure therapy (PE) that uses both imaginal exposures and *in vivo* exposures [4]. Exposure therapy involves getting the patient to continuously revisit the trauma center by trauma events visualizing in their imagination while telling these events aloud during the sessions with the therapists. This revisiting is then followed by processing the content of these imaginal exposures while aiming to acquire new thoughts about the patient himself, the others, and the surrounding world, and shifting negative emotions into positive emotions or at least neutral emotions. The narrative during these imaginal exposures is usually recorded and patients will continue to receive exposures between these sessions by listening to the provided recordings, that will provide more opportunities for the mind of the patient to process these traumatic memories. Post-traumatic stress disorder patients are also asked to use *in vivo* exposures as a homework to do at home between sessions, classically involving gradual exposures to relatively safe activities, things, or sites that are usually avoided by the patient. Other forms of psychotherapeutic options for Post-traumatic stress disorder include other elements of exposures. As an example, the original cognitive processing therapy protocol gets patients to process their traumatic memories by writing a specific account of the event and reading it out loud [5].

A meta-analysis of studies of prolonged exposure therapies demonstrated that exposure therapy caused significant improvements in Post-traumatic stress disorder clinical manifestations and other secondary outcome that will measure at both post-treatment and follow-up when compared to other control conditions [6]. Nevertheless, this study also concluded that exposure therapy did not significantly differ when compared to cognitive processing therapy (CPT), eye-movement desensitization and reprocessing (EMDR), cognitive therapy (CT), and/or stress inoculation training (SIT), that the authors propose might be caused by different but similarly efficient therapeutic

physiologies or because of the similar implementation of exposure techniques in each of the comparison managements. On the other hand, others have found that exposure therapy caused better outcomes in terms of clinical manifestations, improvement rates, and proportion of participants who no longer meet eligibility criteria for Post-traumatic stress disorder when compared to relaxation training and eye-movement desensitization and reprocessing [7].

As for treatment combinations, multiple studies have demonstrated that adding of cognitive therapy to exposure therapy did not lead to improved prognosis and better clinical manifestations [8], while adding exposure techniques to cognitive behavioral therapy significantly improved its outcomes.

Obsessive-compulsive disorder

Exposure and response prevention (EX/RP) program for individuals with Obsessive-compulsive disorder also uses both imaginal exposures and *in-vivo* exposure [9]. *In vivo* exposures are usually done both during therapeutic sessions with the therapist encouraging the patient and outside these sessions as a homework by the patient (like practicing touching public faucets in a public place and engaging in a washing behavior without doing the compulsive ritual). Cessation from performing the compulsive behaviors (response prevention) is considered to be an important aspect of the management as compulsions act as safety behaviors that maintain the link between obsessions and the feared outcomes. For special cases when it is difficult or challenging to perform an *in vivo* exposure (like the fear of the results of getting AIDS), imaginal exposure can be used with the same target getting the patient to be exposed to the feared situation and making levels of anxiety decline without depending on the compulsions. These imaginal exposures thus disapprove the patients' expectations that thoughts of obsessions without really engaging in a compulsion can cause the proposed damage.

A previous meta-analysis demonstrated that the use of Exposure and response prevention protocol caused improved outcomes when it was compared to the use of placebo [10]. Exposure therapy has also been demonstrated to lead to better outcomes when compared to continuous muscle relaxation among patients with Obsessive-compulsive disorder [11]. On the other hand, Exposure and response prevention protocol has also demonstrated similar outcomes when it was compared to cognitive restructuring alone and Exposure and response prevention with cognitive restructuring [10].

Panic disorder

A significant use of exposure therapy for patients who have panic disorders involves the application of interoceptive exposures (like stimulating tachycardia by making the patient run or inducing hyperventilating) that aims at disapproving the concept that physical sensations would cause injuring consequences like a heart failure or embarrassing oneself in public areas. A previous meta-analysis of several studies that evaluated panic disorders demonstrated that cognitive behavioral therapy, that mainly consisted of exposure therapy with the presence or absence of other cognitive therapy components, lead to improved outcomes when compared to no treatment or placebo [12]. furthermore, another analysis demonstrated that cognitive behavioral therapy with interoceptive exposure interventions led to the best effect sizes for patients with panic disorders. Despite that interoceptive exposure is generally used with panic disorders, there is generally less support for the benefits of supplementing interoceptive exposures with *in-vivo* exposures during the management of patients who have panic disorder [13].

Generalized anxiety disorder

Generalized anxiety disorder management could include both imaginal exposures (like imagining the worst scenarios that could be associated with patients' worries) and less commonly, *in-vivo* exposures. As an example, a Generalized anxiety disorder management protocol by Craske and Barlow got patients to engage in a self-guided exposure where these patients were asked to continuously recount their worries with imaginal exposure to decrease the intensity of their worries [14]. There are generally less studies that evaluated exposure-based treatment among Generalized anxiety disorder patients. Studies have demonstrated that Generalized anxiety disorder

including imaginal exposures caused improved performance among patients with Generalized anxiety disorder following twelve-month of follow-up after treatment when compared to applied relaxation and other non-directive treatment protocols. Another recent study compared the use of cognitive therapy, and applied relaxation with another form of imaginal exposures that is called self-control desensitization, and the combination use of these protocols demonstrated no significant differences between them regarding outcomes in managing patients with Generalized anxiety disorder [15]. More research is still required to assess on the efficacy of exposure therapies for the treatment of patients with Generalized anxiety disorder.

Social anxiety disorder

In vivo exposures are frequently used for the treatment of patients with social anxiety disorders (like being involved in social situations without avoidance or application of safety behaviors). Based on Rapee and Heimberg's cognitive behavioral therapy model of anxiety, patients with social anxiety demonstrate certain biases and distortions in the way they process social information or evaluative information that causes increased anxiety levels. Avoiding social situations in turn keeps this anxiety and exposures to social situations could be utilized to give disapproving evidence to the mind regarding cognitive distortions which are associated with social expectations. Exposures with the presence or absence of cognitive therapies have been demonstrated to be efficient in decreasing clinical manifestations associated with social anxiety. More recent studies concluded that exposure therapies with applied relaxation and cognitive therapy both caused improved outcomes when compared to wait-list control groups for the treatment of patients with social anxiety disorders [16].

Specific phobias

In vivo exposures are considered to be the standard treatment for patients who have specific phobias. *In vivo* exposures might include flooding (exposures to the most concentrated worrisome stimulus) or gradual exposures (which involves systematic exposures of gradually elevating intensity). Previous studies have demonstrated that *in vivo* exposure therapies are highly efficient for patients who suffer from specific phobias when compared to no treatment or placebo [17]. Despite that relaxation was demonstrated to show few benefits among patients who suffer specific phobia, it was not concluded to have higher efficacy when compared to exposure [17]. Furthermore, a previous study that compared patients who received a single three-hour session of exposures, 5 sessions of exposures, or 5 sessions of cognitive therapy and concluded that these 3 protocols showed improved outcomes when compared to the waitlist control group; nevertheless, no significant improvements were detected between the exposure group and cognitive therapies group [18].

Cognitive therapy

Cognitive therapy is considered to be another generally used protocol for the treatment of patients who suffer from anxiety disorders. Cognitive therapy is generally based on Beck's tripart model of emotions that suggests that thoughts, feelings, and behaviors are all integrated. Based on this theory, altering maladaptive thoughts is suggested to modify the patients' maladaptive emotions. Cognitive therapy generally aims at improving distorted emotions by using several techniques including detecting inaccurate thinking, assessing the evidence with and against automatic thoughts, challenging and altering maladaptive thoughts, and modifying problematic behaviors.

Efficacy/effectiveness of cognitive therapy for anxiety disorders

The use of cognitive techniques for the treatment of anxiety conditions is generally implemented in many guidelines. However, research on the efficiency of these cognitive techniques alone for the management and treatment of patients with anxiety conditions has demonstrated different outcomes. As an example, a previous study that compared trans-diagnostic cognitive behavioral therapy with the relaxation protocol in patients with anxiety disorders concluded that both protocols were equally beneficial, despite that relaxation training was generally linked with significantly higher dropout rates [19]. These outcomes considering the efficiency of cognitive therapy for patients who have anxiety disorders are also limited by the relatively small number of studies that examined cognitive protocols in isolation from exposures.

Post-traumatic stress disorder

Multiple cognitive therapy protocols have been recommended for the treatment of patients who have Post-traumatic stress disorder. As an example, cognitive processing therapy (CPT) for Post-traumatic stress disorder suggests that erroneous beliefs of causes and results of the trauma prevent patients from processing their emotions that surround the memory of the trauma [5]. In cognitive processing therapy, the therapists help patients to detect their "stuck points," teach them new ways to deal with distressing emotions and get improved understanding of the alterations in beliefs that could happen following the experience of a trauma. cognitive processing therapy starts with the therapist who provides psychoeducation about post-traumatic stress disorder manifestations and a rationale for this protocol. Previous studies have concluded that cognitive processing therapy is efficient in decreasing post-traumatic stress disorder manifestations among both the veterans and the non-veterans populations [20].

Conclusion

Our review shows the benefits of using different cognitive behavioral therapy protocols to manage patients who suffer from anxiety conditions. Exposure protocols and cognitive protocols represent the most commonly used cognitive behavioral therapy techniques. The efficacy of exposure is still considered to be unchallenged for several anxiety conditions including specific phobias and obsessive-compulsive disorders. nevertheless, despite that previous research demonstrated the better outcomes following exposure techniques when compared to receiving no treatment, collective research has not always demonstrated that exposures provide significantly better outcomes when compared to cognitive therapies.

Several complexities originate when trying to interpret these results because of the usual overlap among all these different techniques which are generally used in many of these therapies. For example, exposure therapy for post-traumatic stress disorder patients is mainly based on exposure but can also include processing of imaginal exposures where patients discuss their emotions and feelings correlated with their memory of the traumatic exposures.

In conclusion, the research on cognitive behavioral therapies among patients with anxiety disorders supports the benefits of these methods, with most of the currently available research showing the benefits of administrating exposure therapy for the management of anxiety disorders. nevertheless, these results might be changed as more research is currently being done on cognitive therapy alone and cognitive therapy when combined with exposure therapy.

Bibliography

1. Chambless D and Ollendick TH. "Empirically supported psychological interventions: Controversies and evidence". *Annual Review of Psychology* 52 (2001): 685-716.
2. Hans E and Hiller W. "A meta-analysis of nonrandomized effectiveness studies on outpatient cognitive behavioral therapy for adult anxiety disorders". *Clinical Psychology Review* 33.8 (2013): 954-964.
3. Hofmann SG., *et al*. "Effect of cognitive-behavioral therapy for anxiety disorders on quality of life: a meta-analysis". *Journal of Consulting and Clinical Psychology* 82.3 (2014): 375-391.
4. Foa EB., *et al*. "Prolonged Exposure Therapy for PTSD: Emotional Processing of traumatic experiences: Therapist guide". New York, NY, US: Oxford University Press (2007).
5. Resick P., *et al*. "Cognitive Processing Therapist Group Manual: Veteran/Military Version". Washington, DC: Department of Veterans' Affairs (2008).
6. Powers MB., *et al*. "A metaanalytic review of prolonged exposure for posttraumatic stress disorder". *Clinical Psychology Review* 30.6 (2010): 635-641.

7. Taylor S., *et al*. "Comparative efficacy, speed, and adverse effects of three PTSD Treatments: exposure therapy, EMDR, and relaxation training". *Journal of Consulting and Clinical Psychology* 71.2 (2003): 330-338.

8. Foa EB., *et al*. "Randomized trial of prolonged exposure for posttraumatic stress disorder with and without cognitive restructuring: outcome at academic and community clinics". *Journal of Consulting and Clinical Psychology* 73.5 (2005): 953-964.

9. Foa EB., *et al*. "Exposure and Response (Ritual) Prevention for Obsessive-Compulsive Disorder, Second Edition". New York, NY: Oxford University Press, Inc (2012).

10. Rosa-Alcázar AI., *et al*. "Psychological treatment of obsessive0compulsive disorder: A meta-analysis". *Clinical Psychology Review* 28.8 (2008): 1310-1325.

11. Greist JH., *et al*. "Behavior therapy for obsessive-compulsive disorder guided by a computer or by a clinician compared with relaxation as a control". *Journal of Clinical Psychiatry* 63.2 (2002): 138-145.

12. Mitte K. "A meta-analysis of the efficacy of psycho- and pharmacotherapy in panic disorder with and without agoraphobia". *Journal of Affective Disorders* 88.1 (2005): 27-45.

13. Craske MG., *et al*. "Panic control treatment for agoraphobia". *Journal of Anxiety Disorders* 17.3 (2003): 321-333.

14. Craske MG and Barlow DH. "Mastery of Your Anxiety and Worry". 2nd edition. New York, NY: Oxford University Press (2006).

15. Borkovec T., *et al*. "A component analysis of cognitive-behavioral therapy for generalized anxiety disorder and the role of interpersonal problems". *Journal of Consulting and Clinical Psychology* 70.2 (2002): 288-298.

16. Clark DM., *et al*. "Cognitive therapy versus exposure and applied relaxation in social phobia: A randomized controlled trial". *Journal of Consulting and Clinical Psychology* 74.3 (2006): 568-578.

17. Wolitzky-Taylor KB., *et al*. "Psychological approaches in the treatment of specific phobias: A meta-analysis". *Clinical Psychology Review* 28.6 (2008): 1021-1037.

18. Öst L-G., *et al*. "One vs five sessions of exposure and five sessions of cognitive therapy in the treatment of claustrophobia". *Behaviour Research and Therapy* 39.2 (2001): 167-183.

19. Norton PJ. "A Randomized Clinical trial of transdiagnostic cognitive behavioral treatments for anxiety disorder by comparison to relaxation training". *Behavior Therapy* 43.3 (2012): 506-517.

20. Surís A., *et al*. "A randomized clinical trial of cognitive processing therapy for veterans with PTSD related to military sexual trauma". *Journal of Traumatic Stress* 26.1 (2013): 28-37.

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