Proceedings of ICBioMed 2025 Symposium: AI for Healthcare: Advanced Medical Data Analytics and Smart Rehabilitation
DOI: 10.54254/2753-8818/2025.AU28351

A Review of the Treatment and Effectiveness of Cognitive Behavioral Therapy for Major Psychological Disorders

Zhenying Li

School of Statistics and Data Science, Nankai University, Tianjin, China
17709437235@163.com

Abstract. This is a review of Cognitive Behavioral Therapy (CBT). Cognitive Behavioral Therapy is a widely used therapeutic treatment for treating psychological disorders by therapists, which is supported by a large body of clinical evidence. It is a structured approach used to help patients identify and analyze their own misconceptions about reality and change their irrational cognitive problems, thereby alleviating some of the symptoms of psychological disorders. In order to systematically summarize the basic principles of cognitive-behavioral therapy, its therapeutic measures for psychological disorders, and its application effects, this paper analyzed the existing literature related to cognitive behavioral therapy, summarized the core theories and application effects of CBT, and concluded that it has significant therapeutic effects on depressive disorders, generalized anxiety disorder and eating disorders. Also, a follow-up of the post-treatment showed that CBT was also effective in preventing the recurrence of these psychological disorder symptoms. For patients with severe symptoms, treatment should be administered in combination with other clinical approaches, such as medication.

Keywords: Cognitive Behavioral Therapy, Depressive Disorder, Generalized Anxiety Disorder

1. Introduction

Psychological disorders are one of the most prevalent diseases in the world, and according to World Health Organization (WHO) statistics, one of every four people in the world will experience some kind of psychological disorder in their lifetime. Psychological disorders not only seriously affect an individual's physical and mental health and ability to study and work, but also have a profound impact on social development. With the continuous research on mental disorders, it has been found that psychotherapy plays an equally important role as medication in relieving the symptoms of mental disorders. One of the most common psychotherapies used by therapists is Cognitive Behavioral Therapy (CBT). This paper synthesizes some articles on CBT, summarizing its therapeutic principles and systematically reviewing the differences among three treatments for major psychological disorders and evaluations of their efficacy. It also finds current limitations in CBT compared to other psychotherapies. This paper offers some ideas for overcoming the limitations of cognitive behavioral therapy, facilitating the research on integrating CBT with other clinical interventions, and its application in new therapeutic domains.

© 2025 The Authors. This is an open access article distributed under the terms of the Creative Commons Attribution License 4.0 (https://creativecommons.org/licenses/by/4.0/).

DOI: 10.54254/2753-8818/2025.AU28351

2. Theoretical foundations of CBT

2.1. Origins and the core theory of CBT

In the early 1960s, Aron T. Beck began helping patients with psychological disorders to identify and cope with their negative thoughts after he conducted experiments to test the validity of psychoanalytic theories of depression and found that all depressed participants experienced spontaneous negative thinking. Following this, he proposed a treatment for psychological disorders named Cognitive Behavioral Therapy. It is based on two psychological theories, behaviorist psychology by John B. Watson and cognitive psychology by Aron T. Beck. The most basic theory of CBT is that emotions, cognitions and behaviors interact and reinforce each other, and that an individual's negative thinking and negative cognitions can lead to a range of problems.

2.2. Basic principles of CBT

The foundation of cognitive behavioral therapy lies on continuous exploration and interpretation of the patient's psychological issues, employing cognitive terminology to develop an individualized conceptualization for each patient.

Cognitive behavioral therapy is a goal-oriented approach focused on resolving specific problems. This process requires establishing clear therapeutic objectives with the patient to guide the entire treatment journey.

Simultaneously, CBT emphasizes mutual trust, collaboration, and active participation between the psychologist and the patient. They work together to explore the causes of psychological distress and develop a treatment plan. The psychologist must regularly inquire about the patient's feelings and thoughts throughout the therapeutic process.

During treatment, CBT teaches patients to recognize negative thoughts and beliefs arising in daily life, how to evaluate these beliefs accurately, and how to use psychological techniques to counter them, thereby preventing relapse of psychological disorders.

Finally, CBT treatment duration is time-limited. Typically, a systematic course of therapy spans 6 to 20 weeks, with weekly sessions aimed at reducing symptoms and alleviating the disorder.

3. Application of cognitive behavioral therapy across different psychological disorders

3.1. Depressive disorders

3.1.1. Treatment strategies in cognitive behavioral therapy

Depressive disorders rank among the world's most prevalent mental health conditions, characterized by significant and persistent low mood accompanied by diminished interest and loss of pleasure. This severely impacts individuals' work, social functioning, and daily life. Research indicates that CBT is the most effective psychotherapeutic approach for treating depressive disorders [1].

The core assumption of CBT in treating depressive disorders is that negative emotions are not triggered by specific events but by the individual's interpretations and perceptions of those events. CBT theory divides the subject's cognitive structure into four components: automatic thoughts, cognitive distortions, dysfunctional assumptions, and core schemas. Depressive disorders are closely linked to schemas formed from the patient's past experiences. During treatment, CBT emphasizes that patients identify specific problems to address, the emotions these problems generate, and their impact. Subsequently, individualized treatment plans are developed, with the patient's condition

DOI: 10.54254/2753-8818/2025.AU28351

assessed through their descriptions and standardized scales during each session. Depression often induces intense feelings of loss, frustration, and helplessness. Therefore, psychologists must explain the causes and clinical manifestations of depressive disorders while clarifying CBT's theoretical framework and therapeutic objectives. This empowers patients to recognize negative thoughts and beliefs independently. Furthermore, depression is a highly recurrent psychological disorder. Psychologists must help patients recognize relapse warning signs, reduce potential triggers in daily life, and learn to correct cognitive distortions arising from these adverse factors. For patients diagnosed with moderate to severe depression, combined medication therapy is also necessary.

3.1.2. Analysis of treatment effects

Multiple studies indicate that CBT significantly alleviates depressive symptoms in patients with depressive disorders.

In one study, psychologists led by José A. López-López conducted a network meta-analysis of randomized controlled trials on CBT. They retrieved relevant databases and categorized studies based on varying influencing factors. The analysis revealed that incorporating CBT into treatment significantly reduced participants' depression scores compared to conventional methods, with a standardized mean difference of -1.11 with a 95% confidence interval ranging from -1.62 to -0.60 [2].

3.2. Anxiety disorders

3.2.1. CBT approaches for treating anxiety disorders

Anxiety disorders represent the most prevalent mental health conditions globally, with research indicating over 300 million cases worldwide. Characterized by negative emotions such as worry, fear, and excessive concern, anxiety disorders exert a series of detrimental effects on individuals' lives. CBT is the most commonly employed psychological approach for treating anxiety disorders.

Common CBT techniques for treating anxiety disorders include:

a. Cognitive restructuring: Gradually guiding patients to identify their negative automatic thoughts and question the validity of these thoughts. Common anxiety-inducing negative thoughts include: All-or-nothing thinking--If I don't complete this task, I am a failure; Disqualifying the positive--My success is due to luck, not my abilities; Jumping to conclusions--fortune telling--I will definitely fail this exam; Emotional reasoning--I feel anxious, so something bad must be happening; Personalization--The party atmosphere is bad because of me; Catastrophizing--If I fail this exam, I won't graduate, won't find a job, and my life will be ruined, etc.

b. Exposure Therapy: Psychologists help patients gradually confront anxiety-inducing situations or events, reducing sensitivity to such triggers. For example, if social settings cause distress affecting daily life and work, a psychologist might guide the patient to start with small gatherings requiring minimal interaction--like meeting friends at a café--and gradually progress to larger group events to build tolerance and ease anxiety.

c. Relaxation Training: Psychologists teach patients relaxation techniques like deep breathing and meditation to quickly alleviate anxiety symptoms.

d. Self-monitoring: Psychologists have patients document anxiety-inducing scenarios, accompanying thoughts, and emotions. These are then analyzed collaboratively to identify patterns for targeted intervention [3].

DOI: 10.54254/2753-8818/2025.AU28351

3.2.2. Clinical application effects

A meta-analysis by American psychologists included 21 studies on anxiety disorder treatments involving 1,266 participants. Among them, 625 were randomly assigned to medication therapy, while 641 received CBT. Statistical analysis of treatment outcomes yielded an overall effect size of 0.25 (95% confidence interval: 0.02–0.48) [4]. A recent controlled trial found that 77% of patients no longer met diagnostic criteria after CBT treatment, with sustained improvement observed during subsequent two-year follow-ups. This indicates CBT significantly improves anxiety disorders with enduring effects, reducing the risk of symptom recurrence [5].

3.3. Eating disorders

3.3.1. Application of CBT in treating eating disorders

Eating disorders are relatively complex, characterized by unhealthy eating patterns driven by psychological factors. These include binge-eating disorder, bulimia nervosa, and anorexia nervosa. Eating disorders not only impact mental health but also physical health, contributing to a high mortality rate among psychological disorders.

The fundamental issue for individuals with eating disorders is distorted thought patterns. They may believe that only extreme thinness can earn love and respect or rationalize, "Since I've already ruined my eating plan today, I might as well indulge in whatever I want." CBT first helps patients recognize these distorted thoughts promptly and analyze their validity. Through long-term treatment, it alleviates excessive anxiety about food intake and body weight, reducing the sense of loss of control triggered by these stimuli. For many individuals with eating disorders, eating behaviors are closely tied to their emotions. After eating, they often experience intense regret, self-blame, and fear. CBT helps patients recognize these negative emotions promptly and regulate them. It also teaches healthy coping strategies such as deep breathing, meditation, mindfulness exercises, journaling, or talking to others to manage these feelings. Finally, CBT employs specific behavioral strategies to help patients establish healthy eating patterns. For anorexia nervosa patients, systematic desensitization and food exposure therapy can increase tolerance toward food while daily meal plans are developed. Patients follow these plans without excessive exercise or purging, gradually reducing daily weight checks. For bulimia nervosa patients, daily food and mood logs are kept to analyze emotions triggering binge episodes. Binge eating often serves as a compensatory behavior for emotional distress. CBT helps patients learn alternative coping mechanisms for these emotions and practice delayed gratification.

3.3.2. Treatment effects of CBT

A meta-analysis of 79 randomized controlled trials examining CBT for eating disorders demonstrated superior treatment outcomes compared to other psychotherapies or no intervention. Therapist-led CBT using manualized CBT-EN or enhanced CBT protocols yielded the most effective results. Follow-up studies showed CBT produced stronger improvements in behavioral and cognitive symptoms than interpersonal psychotherapy or other weight-loss interventions. No significant difference in treatment outcomes for eating disorders was observed between CBT and antidepressant medication alone [6].

DOI: 10.54254/2753-8818/2025.AU28351

4. Advantages and limitations of CBT

CBT is a treatment method with significant efficacy for certain clinical symptoms, supported by extensive scientific research. It is a short-term, goal-oriented approach with clear, specific objectives and predictable outcomes. CBT also follows a relatively fixed treatment process, facilitating patient understanding and cooperation. During CBT, patients can acquire numerous emotion management skills to prevent symptom relapse.

However, CBT primarily addresses immediate, urgent issues without delving into past causes or unconscious motivations. Additionally, CBT heavily relies on patient participation and active engagement, requiring a high degree of self-management ability [7].

5. Conclusion

This paper reviews the interventions and analyzes the therapeutic effects of cognitive behavioral therapy applied in the treatment of major psychological disorders: depressive disorders, generalized anxiety disorders and eating disorders. According to a network meta-analysis of data from multiple randomized controlled trials, CBT was found to have significant therapeutic effects on these three common psychological disorders and to have a sustained therapeutic effect on clinical symptoms even after treatment. This article does not summarize the treatment methods and treatment effects of CBT for other psychological disorders such as obsessive-compulsive disorder (OCD) and post-traumatic stress disorder (PTSD). At the same time, the treatment process of psychological disorders is complex, and this paper does not analyze the influence of other factors on the analysis of treatment effects. In the future, we can delve into the reasons why cognitive behavioral therapy has significantly improved the treatment of psychological disorders. What changes in the patient's physiology occur during the use of CBT, and how these changes differ from drug-induced physiological changes. What other therapeutic interventions that can be optimized and enhanced by CBT therapy can enhance treatment outcomes.

References

[1] Cui, L., Li, S., Wang, S., Wu, X., Liu, Y., Yu, W., ... & Li, B. (2024). Major depressive disorder: hypothesis, mechanism, prevention and treatment. Signal transduction and targeted therapy, 9(1), 30.

[2] López-López, J. A., Davies, S. R., Caldwell, D. M., Churchill, R., Peters, T. J., Tallon, D., ... & Welton, N. J. (2019). The process and delivery of CBT for depression in adults: a systematic review and network meta-analysis. Psychological medicine, 49(12), 1937-1947.

[3] Kendall, P. C., & Peterman, J. S. (2015). CBT for adolescents with anxiety: mature yet still developing. American Journal of Psychiatry, 172(6), 519-530.

[4] Roshanaei-Moghaddam, B., Pauly, M. C., Atkins, D. C., Baldwin, S. A., Stein, M. B., & Roy-Byrne, P. (2011). Relative effects of CBT and pharmacotherapy in depression versus anxiety: is medication somewhat better for depression, and CBT somewhat better for anxiety?. Depression and anxiety, 28(7), 560-567.

[5] Hollon, S. D., Stewart, M. O., & Strunk, D. (2006). Enduring effects for cognitive behavior therapy in the treatment of depression and anxiety. Annu. Rev. Psychol., 57(1), 285-315.

[6] Waller, G., & Beard, J. (2024). Recent advances in cognitive-behavioural therapy for eating disorders (CBT-ED). Current Psychiatry Reports, 26(7), 351-358.

[7] Hofmann, S. G., Sawyer, A. T., & Fang, A. (2010). The empirical status of the “new wave” of CBT. The Psychiatric Clinics of North America, 33(3), 701.