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The Application of Cognitive Behavioral Therapies for Post-Traumatic Stress Disorder

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Abstract. Post-Traumatic Stress Disorder (PTSD) is a severe psychological disorder that often occurs after individuals experience traumatic events such as natural disasters, violence, or war. In recent years, Cognitive Behavioral Therapy (CBT) has been widely recognized as a first-line intervention for PTSD due to its structured format, short-term nature, and strong empirical support. Compared with other therapies, CBT places greater emphasis on the interaction between cognition and behavior, aiming to reduce core symptoms that sustain PTSD—such as avoidance and hyperarousal—through the correction of maladaptive cognitions. Research indicates that Trauma-Focused CBT is particularly effective for children and adolescents, significantly alleviating symptoms such as intrusive thoughts, avoidance, and heightened arousal, while also improving comorbid depression and anxiety. Moreover, empirical evidence from both domestic and international studies demonstrates that CBT can be adapted to diverse populations, including adolescents exposed to prolonged interpersonal violence and emergency nurses who frequently encounter critically ill patients. Drawing on a literature review and two case studies, this paper explores the mechanisms and therapeutic outcomes of CBT. Findings suggest that CBT not only mitigates PTSD symptoms but also promotes post-traumatic growth, underscoring its clinical and societal significance in trauma.

Keywords: Post-Traumatic Stress Disorder, Cognitive Behavioral Therapy, Case Study, Exposure Therapy, Cognitive Restructuring

1. Introduction

Post-Traumatic Stress Disorder (PTSD) is one of the most common psychiatric disorders following traumatic events, characterized primarily by intrusive thoughts, avoidance behaviors, negative alterations in cognition and emotion, and heightened arousal [1]. Research indicates that approximately 60% of men and 50% of women experience at least one trauma meeting PTSD criteria in their lifetime, with a portion of these individuals developing chronic PTSD, leading to significant impairments in social functioning and quality of life [2]. The detrimental effects of PTSD extend beyond the psychological domain, being closely associated with increased comorbidity rates of depression, suicidality, and psychosomatic disorders [3].

Among the various interventions for PTSD, Cognitive Behavioral Therapy (CBT) is recommended by international guidelines as a first-line treatment [4]. The theoretical foundation of

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CBT lies in the interaction between cognition, emotion, and behavior, positing that irrational beliefs and maladaptive cognitions about traumatic events perpetuate symptoms, whereas cognitive restructuring and exposure techniques can disrupt the fear network and reduce symptom severity [1,2]. In recent years, CBT has been applied to diverse populations. For example, Chinese case studies have shown that CBT effectively alleviated PTSD symptoms in an adolescent exposed to prolonged interpersonal violence [5]. Furthermore, group-based CBT (GCBT) has demonstrated significant efficacy among high-risk occupational groups such as emergency nurses, reducing PTSD symptoms and enhancing post-traumatic growth [3].

In addition, the emergence of internet-based CBT (iCBT) has expanded therapeutic accessibility, addressing the limitations of traditional face-to-face interventions in terms of availability and adherence. Studies suggest that iCBT shows promise in alleviating trauma-related anxiety, avoidance, and sleep disturbances, though its long-term effectiveness and acceptability require further investigation [2].

In sum, CBT, as a structured, short-term, and evidence-based psychological intervention, has become a vital tool in the treatment of PTSD owing to its empirical support and clinical feasibility. Building upon a literature review and case analysis, this paper examines the application models and therapeutic efficacy of CBT in PTSD interventions.

2. Cognitive behavioral therapy

2.1. Concepts

CBT is a form of psychotherapy developed from the integration of behavioral therapy and Aaron Beck's cognitive therapy. Grounded in both cognitive and behavioral theories, it posits that individuals' emotional and behavioral problems originate from irrational or negative cognitive processing. Through a structured, short-term, and goal-oriented treatment process that combines cognitive restructuring and behavioral interventions, CBT not only assists individuals in correcting cognitive distortions but also improves their emotional states and behavioral responses.

Moreover, cognitive psychology, as a central branch of psychology, primarily investigates how humans process information through perception, attention, memory, thinking, language comprehension, and problem-solving. This theoretical framework emphasizes that individuals' emotional and behavioral reactions largely depend on their subjective interpretations of external events. Within CBT, cognitive psychology provides theoretical foundations in areas such as information-processing patterns, schema theory, and attentional bias, thereby serving as a critical source for clinical cognitive intervention models.

In contrast, behavioral psychology is a branch of psychology that focuses on observable behaviors, emphasizing that behavior is shaped by external environmental stimuli through learning processes. Rooted in classical and operant conditioning, this perspective asserts that systematic modification of behavior can be achieved by altering reinforcement and punishment contingencies within the environment. In CBT, behavioral psychology provides the theoretical support for behavioral intervention techniques such as behavioral activation, exposure therapy, and skills training, thereby forming the practical foundation for correcting maladaptive behavioral patterns.

2.2. CBT and PTSD

In clinical practice, PTSD is considered one of the psychiatric disorders most suitable for treatment with CBT. A substantial body of research has demonstrated that CBT is highly effective in

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alleviating the core symptoms of PTSD, including intrusive re-experiencing, avoidance, and hyperarousal [1,6].

Treatment of PTSD with CBT typically involves four core components: cognitive restructuring, exposure therapy, trauma narration, and behavioral experiments. First, cognitive restructuring helps patients identify and modify trauma-related negative cognitions (e.g., "It was my fault") and replace them with more realistic and compassionate beliefs (e.g., "I did the best I could") [2]. Second, exposure therapy, particularly Prolonged Exposure (PE), gradually enables patients to confront trauma-related situations in a controlled environment, thereby breaking the maladaptive cycle of avoidance and anxiety. Third, trauma narration and expressive writing facilitate systematic processing and articulation of traumatic memories, promoting integration and reducing their intrusive impact. Finally, behavioral experiments allow patients to test and disconfirm excessive threat assumptions (e.g., "If I talk about it, I will collapse"), thereby gradually enhancing their sense of mastery and control.

In recent years, empirical studies from both domestic and international contexts have further validated the efficacy of CBT in PTSD treatment. Sun's meta-analysis revealed that Trauma-Focused CBT (TF-CBT) produced medium-to-large effect sizes in reducing PTSD symptoms among children and adolescents, with particularly significant improvements in avoidance and hyperarousal [4]. Similarly, Liu's case study demonstrated that individualized CBT effectively alleviated PTSD symptoms in adolescents exposed to interpersonal violence, leading to improvements in social functioning [5]. Moreover, Wang found that group-based CBT among emergency nurses not only reduced PTSD symptoms but also promoted post-traumatic growth [3]. Collectively, these studies highlight that CBT, as a structured and time-limited intervention, can be flexibly applied across diverse populations while consistently yielding positive therapeutic outcomes.

3. Case study

3.1. Case 1: adolescent PTSD following multiple exposures to death-related events

This section describes the traumatic experiences of an individual who repeatedly witnessed death-related events, the primary symptoms that ensued, and the process of CBT intervention in order to illustrate the therapeutic and coping mechanisms of CBT in the treatment of PTSD [7].

3.1.1. Traumatic events

During the course of development, the patient experienced multiple trauma-related events centered on death, which formed the critical background for subsequent psychological stress responses. First, in early childhood, the individual directly witnessed the sudden death of a grandfather. Only a few seconds after conversing with him, the patient saw his life come to an abrupt end. As the child had not yet developed a mature concept of death, this experience primarily resulted in intense fear and confusion. Second, in the second year of middle school, the individual witnessed a severe traffic accident. The fatal scene once again provoked an acute stress reaction, and in the absence of adequate processing of the earlier trauma, it further intensified the cumulative effects of psychological injury. Finally, in the third year of high school, the patient witnessed a crisis event in which another student attempted suicide by jumping from a building. These three incidents, each involving life threats and death-related scenarios, were all experienced in the role of a bystander. Such exposures may have had profound impacts on the individual's sense of safety, self-concept,

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and capacity for emotional regulation, thereby constituting important risk factors for the development of PTSD.

3.1.2. Symptoms

The individual currently exhibits multiple typical trauma-related symptoms. First, frequent nightmares closely associated with the traumatic events occur, vividly recreating the original scenarios, leading to significant sleep onset difficulties and markedly reduced sleep quality. Second, the individual reports recurrent traumatic flashbacks, during which they subjectively feel as though they are re-experiencing the traumatic scene. These episodes typically last around 45 minutes and occur approximately five times per week, severely disrupting daily functioning. In addition, the individual demonstrates persistent and intense self-blame, repeatedly believing that different actions at the time could have altered the outcome of the events. Such cognitive responses reflect a fixation in trauma-related cognitive processing, which constitutes a key psychological characteristic of PTSD.

3.1.3. CBT intervention (four sessions)

During formal clinical treatment, the individual received a comprehensive intervention in which Cognitive Behavioral Therapy (CBT) played a central role. First, CBT techniques were employed to help the patient identify and correct irrational cognitions related to the traumatic events. Through cognitive restructuring, the therapy reduced self-blame and addressed tendencies toward catastrophizing. Second, the therapist provided psychoeducation on PTSD, enabling the patient to understand the mechanisms underlying common symptoms such as flashbacks, nightmares, and hyperarousal. This enhanced understanding helped decrease fear of their own condition and reduced feelings of stigma. Third, with regard to emotion regulation, the patient was encouraged to enhance self-expression through verbal communication and writing, thereby promoting emotional externalization and the development of emotional awareness. The intervention also incorporated meditation exercises, designed to help the patient construct an internalized “psychological safe space,” thereby fostering stability and a sense of control when confronting stressors. Finally, progressive muscle relaxation training was implemented to alleviate chronic bodily tension and reduce trauma-related physiological hyperarousal.

3.2. Case 2: PTSD in an Iraqi War veteran

Research has shown that the prevalence of PTSD among war veterans or individuals living with HIV is significantly higher than in the general population [8]. This section describes the individual’s combat- and life-related traumatic experiences, as well as the process of CBT-based exposure therapy intervention [9].

3.2.1. Events

Three principal incidents underpinned the individual’s psychological stress reactions. First, while conducting patrol duties in a hostile area, the veteran shot and killed an Iraqi boy with apparent physical and intellectual disabilities. The day before this incident, a child-thrown grenade in the same village had killed twelve soldiers. At the time of the shooting, the boy had been squatting behind a vehicle holding an object; it was later determined that the object was only a stone. Throughout the deployment, the veteran was persistently haunted by ruminative thoughts related to

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the event, for example: "If I pulled the trigger, I killed an innocent child. But if that stone had really been a grenade, all my comrades might have died."

The second incident involved the veteran's perceived failure to prevent an improvised explosive device (IED) detonation. He had been assigned to inspect and advise on a suspected IED. Although his convoy passed through the area without incident, a following convoy was subsequently struck by an explosion that killed two soldiers. Although he did not witness the detonation itself, he reported intense guilt, exemplified by thoughts such as, "I could have prevented this."

The third stressor was a severe marital betrayal discovered during deployment: the veteran learned that his wife had engaged in an extramarital relationship, which led him to fear she might leave him while he was stationed in Iraq. After returning home one year later, the couple briefly reconciled but ultimately divorced. The veteran subsequently lost his job and relocated to the southeastern United States in an attempt to restart his life. Persistent painful cognitions linked to the relationship—expressing shame (e.g., "I am worthless"), guilt (e.g., "Her leaving is my fault"), and anger (e.g., "She betrayed me!")—recurrently appeared in his narrative.

3.2.2. CBT intervention (nine sessions)

The intervention primarily employed exposure therapy that combined both in vivo (situational) exposure and imaginal exposure. In the first session, the therapist provided psychoeducation on the basic knowledge of psychological symptoms and explained the behavioral and cognitive patterns that could maintain these symptoms, as well as strategies to avoid such maintaining mechanisms. In the second session, the therapist reviewed common post-traumatic reactions, introduced the hierarchy of feared situations and the Subjective Units of Distress Scale (SUDs), and collaboratively developed an exposure hierarchy with the patient. This hierarchy included avoided target individuals, places, and situations that elicited distress.

From the third to the ninth sessions, the patient engaged in imaginal exposure to key moments of traumatic experiences, re-experiencing relevant sensory details under the therapist's guidance in order to reprocess traumatic memories. The therapist encouraged the patient to articulate emotional experiences, and as the treatment progressed, the patient's narrative gradually became more structured and coherent.

4. Conclusion

This study, through literature review and case analysis, explored the mechanisms and clinical value of CBT in the treatment of PTSD. Findings indicate that CBT, through techniques such as cognitive restructuring, exposure therapy, trauma narration, and behavioral experiments, can effectively reduce core symptoms of PTSD—including intrusive memories, avoidance behaviors, and hyperarousal—while also helping individuals gradually regain a sense of control and safety in their environment. In the case analyses, whether it was an adolescent who developed PTSD after witnessing death-related events or a veteran suffering from war trauma, CBT interventions demonstrated positive therapeutic outcomes. These results further validate the adaptability and generalizability of CBT across different populations and cultural contexts.

Notably, the advantages of CBT extend beyond symptom reduction to include promoting cognitive restructuring and restoring social functioning. For instance, adolescents gradually learned to reappraise traumatic events and establish positive beliefs during treatment, while veterans utilized PE therapy to confront shame and guilt, thereby alleviating self-blame. These findings suggest that

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CBT not only reduces trauma-related symptoms but may also foster Post-Traumatic Growth (PTG), enhancing psychological resilience and quality of life.

However, existing research and practice also highlight certain limitations in the application of CBT to PTSD. First, cultural differences may influence patients' perceptions and acceptance of psychotherapy. For example, in Eastern societies, expressions of psychological trauma tend to be more reserved, and the stigma surrounding counseling may reduce treatment adherence. Second, patients with severe or complex PTSD—particularly those with comorbid depression, self-injurious behaviors, or chronic trauma histories—may require a combination of interventions such as pharmacotherapy, group therapy, or family support, as CBT alone may not be sufficient to fully alleviate symptoms. Furthermore, while the development of internet-based CBT (iCBT) has expanded treatment accessibility, its long-term efficacy and stability remain to be further examined.

In conclusion, CBT, as a structured, time-limited, and evidence-based psychotherapeutic approach, demonstrates robust effectiveness and broad applicability in PTSD intervention. Future research should focus on the cultural adaptation of CBT in different social contexts, long-term follow-up and outcome evaluation among special populations (e.g., children, healthcare workers, disaster survivors), and the integration of CBT with pharmacological, family-based, and emerging digital interventions. Such comprehensive approaches may provide more systematic and multidimensional pathways for the treatment of PTSD.

References

[1] Li, X. (1999) Cognitive theories and cognitive behavioral therapy of post-traumatic stress disorder. Chinese Journal of Clinical Psychology, 7(2): 125–129.
[2] Cheng, Y., & Cui, J. (2021) Advances in internet-based cognitive behavioral therapy for post-traumatic stress disorder. Journal of Psychiatry, 34(2): 180–184.
[3] Wang, X. (2023) The effect of group cognitive behavioral therapy on symptoms of post-traumatic stress disorder in emergency nurses (Master's thesis). Nanchang University, Nanchang, China.
[4] Sun, Y. (2023) Trauma-focused cognitive behavioral therapy for post-traumatic stress disorder in children and adolescents: A meta-analysis (Master's thesis). China Medical University, Liaoning, China.
[5] Liu, G. (2020) A case study on cognitive behavioral therapy for adolescent PTSD. Acta Psychologica Sinica, 52(3): 233–240.
[6] Wang, Y., Tang, Y., & Shi, S. (2006) Current research status of post-traumatic stress disorder in China. Shanghai Archives of Psychiatry, 18(6): 372–376.
[7] Huang, J. (2023) Dialogue with death, empowering the heart: Application of cognitive behavioral therapy in a case of post-traumatic stress disorder. Primary and Secondary School Mental Health Education, (36): 51–55.
[8] Pang, Z. Y., Xi, J. Z., & Zuo, Z. H. (2017) A knowledge-mapping analysis of US research on treatments for children and adolescents with post-traumatic stress disorder (PTSD). Advances in Psychological Science, 25(7), 1182.on, 36: 51–55.
[9] Paul, L. A., Gros, D. F., Strachan, M., Worsham, G., Foa, E. B., & Acierno, R. (2014) Prolonged exposure for guilt and shame in a veteran of Operation Iraqi Freedom. American Journal of Psychotherapy, 68(3): 277–286.