

Effectiveness of Cognitive Behavioral Therapy: A Case Study of Panic Disorder

Rabia Mushtaq¹* & Ayesha Ahmad¹

Abstract

This case intended to explore the effectiveness of cognitive behavioral approach in treating symptoms associated with panic disorder. Panic disorder is among the anxiety disorders characterized by the reappearance of unexpected panic attacks, in which intense fear escorted by a series of physical and/or cognitive symptoms that develops abruptly, without any ostensive external cause (APA, 2022), and CBT has been found to be the most efficacious treatment among other psychological therapies (Pompoli et al., 2018). Therefore, it was needed to build indigenous data regarding the efficacy of CBT in Panic disorder. A single-case study design for an in-depth understanding of the disorder's dynamics has been chosen. This study was done on a 41-year-old married female having panic disorder (DSM-V Criteria) and was assessed and treated at the Institute of Clinical Psychology, University of Karachi, from December 2022 to June 2023. During the psychological assessment phase various tools including CBT assessment forms, Severity measure for panic disorder-Adult, and projective tests were utilized. In treatment phase, techniques of CBT were applied to address the clients' distorted thinking patterns in order to reduce panic attacks. Methods such as cognitive reconstruction, relaxation exercises and behavioral strategies aided the client in managing anxious thoughts and concerns more effectively. It was found that the use of CBT techniques led to the enhancements in clients functioning, elimination of panic attacks and a decrease the fear associated with death. The outcomes and the client's progress demonstrated that employing CBT is a proven method for addressing panic disorder.

Keywords: cognitive behavior therapy, case study, panic disorder

*Corresponding Author:

Rabia Mushtaq

Institute of Clinical Psychology,
University of Karachi.

Correspondence Email:

drrabiamushtaq.icp@gmail.com

This work is licensed under a
[Creative Commons Attribution-
Noncommercial 4.0
International License](https://creativecommons.org/licenses/by-nc/4.0/).



Introduction and Literature Review

Panic disorder is defined by repeated panic episodes. As, per the DSM-5 guidelines, diagnosing this condition necessitates the presence of four out of thirteen symptoms with two involving aspects such as a fear of death or losing control. Additional symptoms manifest in forms, like increased heart rate, shortness of breath, sweating, lightheadedness, nausea and more. Moreover, an apprehension of experiencing another panic attack must also be present

¹ Institute of Clinical Psychology, University of Karachi, Pakistan

(American Psychiatric Association, 2022). Various approaches exist for addressing panic disorder related symptoms; however, Cognitive Behavioral Therapy (CBT) stands out as an effective treatment option. Research, by Van Dis et al. (2020) indicates the efficacy of CBT in managing mental health conditions, including anxiety related disorders. Numerous controlled trials have demonstrated the effectiveness of CBT in treating panic disorder whether accompanied by agoraphobia or not (Pompoli et al., 2016; Van Dis et al., 2020).

Cognitive and behavioral theories typically view panic disorder as a learned fear of sensations related to arousal (Craske et al., 2007). The CBT approach is rooted in the idea that fears served a purpose, in environments (Leahy, 2018). While, the "flight fight or freeze" response was once beneficial in situations, experiencing panic in ordinary scenarios is no longer helpful. The CBT model differentiates between vulnerability factors such as neuroticism, specific factors like interpreting sensations cognitively and maintenance factors, like learned avoidance behaviors. This model outlines how an initial panic attack can occur and progress into a panic disorder.

The organized mindset and thinking patterns, along with tactics used in therapy influence the health and anxiety levels of people dealing with panic. Individuals diagnosed with panic disorder underwent interventions and techniques through Cognitive Behavioral Therapy (CBT) to manage their condition (Tariq et al., 2022). Cognitive behavioral methods aimed to change how patients perceive and process thoughts encouraging a shift towards thinking during situations. By assisting patients in reframing their thoughts and responses into realistic problem-solving strategies the therapy demonstrated effectiveness. Additionally various behavior modification techniques were incorporated throughout the treatment process (Tariq et al., 2022).

The therapy involves components such as, educating the patient about the methods to lower excessive brain activity, changing negative thought patterns, facing fears, gradually learning to cultivate positive feelings, enhancing problem solving skills, engaging in activities to boost mood, practicing cognitive restructuring exercises for alleviating depression symptoms and strategies to prevent relapse (Miclea et al., 2008).

The treatment according to this approach usually comprises dealing with misinterpretations of danger and physiological symptoms. This usually begins with psychoeducation regarding the fight or flight mode and difference between sensation and panic. Other elements that aid the recovery process are cognitive restructuring, breathing retraining and exposure therapy for the feared situations (Barlow, 2001). Cognitive restructuring is mainly for the catastrophic thinking patterns of the client in response to the internal and external cues (Hofmann, 2007). In short, CBT requires clients to get engaged in exercises and various activities with the clear goal of changing one's thinking patterns and lifestyle (Khattra et al., 2017).

Material and Methods

Research Design

A single case study design was utilized in this study in order to analyze the effectiveness of CBT in Panic disorder.

History of presenting complaints

The client was 41 years old married female at the time of her assessment. She is the 3rd born among 4 siblings having 2 elder sisters and one brother. Her qualification is Intermediate, and she is a home maker. Her husband's qualification is B. Com, and he is doing a job in a private sector. She has 4 children, 1 son and 3 daughters. She belongs to a Muslim, Urdu-speaking family with middle socioeconomic status. The client approached the Institute of Clinical Psychology, with the complaints of fear of death, anxiety, accelerated heartbeat, disturbed appetite, and overthinking.

According to the client, her problems started 3 months ago when her nephew died suddenly due to heart attack. After the incident, she had crying spells almost every day for 2 months. She reported that during that time of grief, she also had thoughts of her own death. Whenever she experiences having the thoughts that she will die soon like her nephew, her heart started pounding, and she felt shortness of breath, choking and abdominal distress. This condition remained for more than an hour. According to her, she tried to fulfill her responsibilities as a mother and as a wife, however, she was not able to do with interest. She became anxious while starting any new activity. She thought if she started any new task at home and die suddenly then it will be left unfinished.

Furthermore, according to client, she cleaned her house frequently with the intention that she will die, and people will come to her funeral at home so it must be cleaned thoroughly. She reported that she was not avoiding going out, but she was hyper-vigilant and anxious when she went out. Furthermore, she had disturbed eating and sleep patterns. She had been fearful of sleeping alone since last three months. Even in daytime, she was not comfortable being alone and asked her daughters or husband to be with her all the time, as if she die, they will take care of her funeral. It was also reported that whenever she listened the news of anyone's death, she became more fearful. One of her husband's cousins died 2 weeks before her consultation, and she went to his funeral where she felt panic like symptoms and she was brought back home instantly.

Regarding her early life, client reported that she was afraid of darkness from very young age and thought that after death there will be darkness in her grave, and these thoughts increased her fear of death. She further reported that ten years ago, her sister died at the age of 20, and she remained fearful of death for 2 months that became more intense on every Friday, the day of her sister death. That fear came back now after many years.

According to her family history, she reported that her husband is less talkative in nature, and is less responsive to her when she wants to talk with him. She added that he is relatively more responsive towards herself and their children than to the people outside home. She also reported that her husband is strict in rules and regulations at home, especially in maintaining cleanliness at home. So, she and her children make sure to take care of this. She reported having a good bonding with her children who come to her whenever confront with any problem in life. However, due to her current condition, she found herself unable to She is a comfortable place for her husband and her children but currently due to give her family quality time. Apart from her own family, her mother side also found to be her supportive pillars, and her mother and siblings came to her house regularly to nurture her in this difficult time.

According to the client, she was enrolled in Quran Tafseer classes for the last 6 months and her teacher taught her the concept of sins and good deeds, and about life after death. She

perceived herself sinful and remembered that she left prayers many times and returns (Qaza Namaz) them now, so that if she dies, she would not be punished for her deeds.

Regarding her socialization, she added that she had 2 best friends from school time, and they were in contact till her treatment phase. Client was prescribed with medicines for her anxiety symptoms by general physician first and those include Depex (anti-depressant), Kemadrin (anticholinergic) and ALP (anti-anxiety). Later on, she consulted with a psychiatrist and was prescribed with Ramargon 30mg (anti-depressant), Futine 40mg (antidepressant) and Ozip (antipsychotic). The client was diagnosed with panic disorder according to the criteria of DSM-V after assessment.

Assessment

Rapport building and history taking were the major goals of the first session. CBT assessment was done, ensuring empathy and formation of a therapeutic alliance. DSM-V was used as a major tool to diagnose the client by following the diagnostic criteria. Other than that, among Projective testing, HFD, Thematic Apperception Test and Rorschach Inkblot Test were used. Analysis indicated inadequate self-image, anxiety and aggression, inadequacy and discouragement. Her prominent needs were found as need for succorance, achievement and harm avoidance. Her perception of environment was stressful and depriving which was also manifested by the significant conflicts that lie between achievement v/s inadequacy, hope v/s despair and trust v/s mistrust. According to the analysis, her anxieties were centered around being deprived and losing love, and undoing, denial, and repression were revealed as some prominent defense mechanisms to deal with her anxieties and conflicts. Projective analysis further indicated that her experience of distress outweighs her capacity for coping and she was likely to feel overwhelmed and unable to deal with complex or ambiguous situations. She found having preoccupation with psychosomatic problems, and afraid of making mistakes.

Severity measure for Panic Disorder Severity Scale-Adults was administered on the client pre and post treatment. Cutoff score of the inventory is 40. Pre assessment showed that client's obtained scores are 34 which comes in 'Moderate' range, while post assessment indicated that her symptoms fall in 'Mild' range with obtained score of 16.

Measures

Human Figure Drawing (Goodenough, 1926). Human Figure Drawing is a projective assessment (Goodenough, 1926) specifically designed for evaluating children. However, (Machover, 2006) broadened its applications to obtain personal information from the patient. The reliability of this drawing test is assured by its significant correlations with other drawing tests. In addition to emotional signs, it also provides information about an individual's neurological functioning and cognitive ability. The administration and scoring of this task are straightforward and uncomplicated (Gigi, 2015).

Thematic Apperception Test (Murray, 1943). This is a projective assessment that comprises a series of cards with images. The individual taking the test is tasked with generating a narrative for each card. The cards possess a degree of ambiguity, leading individuals to project their personal needs, conflicts, and desires onto them. This projection is seen as a valid assessment. In addition, the test demonstrates good interscorer reliability, ranging from .37 to .90, with the majority of scores at .85 or higher (Ali & Zeb, 2023).

Rorschach Inkblot Test (Rorschach, 1921). The Rorschach is a performance-based task or behavioral assessment test that evaluates several aspects of personality, perception, and

problem-solving abilities. This includes assessing mental organization, perceptual accuracy, adherence to conventions, self-image, and comprehension of others, as well as psychological factors, assets, structures, and interactions. The activity offers a predefined collection of inkblot images and is conducted and evaluated following established rules.

Panic Disorder Severity Scale-Adults (APA, 2013). The Panic Disorder Severity Scale, for adults consists of 10 items that evaluate the seriousness of symptoms related to panic disorder in individuals aged 18 and above. This scale is meant to be filled out by the individual upon being diagnosed with panic disorder (or experiencing symptoms) and subsequently before attending follow up appointments with their healthcare provider. Each question prompts the person receiving treatment to assess how severe their panic disorder has been, over the week.

Procedure

The client was presented with the case study methodology and her explicit consent was secured. Initially, sessions were scheduled twice a week, which later transitioned to a week after four sessions. In total there were 16 sessions, including the follow up sessions after being diagnosed with panic disorder as per DSM V (American Psychiatric Association, 2013).

Therapeutic Process & Interventions

First of all, clinical interview and psychological assessment was done and client was diagnosed with panic disorder. After fulfilling the eligibility criteria of CBT, interventions of cognitive behavioral therapy were started in a stepwise manner as follows:

During the therapy sessions the therapist provided *psychoeducation to the client* explaining her issues and how the treatment would help. The focus was on educating the client about panic attacks, including her physiological and psychological aspects, as well as introducing the concepts like CBT and Clarks model for Panic attacks (1986), with explanations before assigning homework tasks. The treatment plan involved formulation of treatment goals to monitor progress and provide structure to the process as noted by (Playford et al., 2000). It was emphasized that goals should be collaboratively determined by both the client and the therapist.

Together, they established the following objectives:

1. Lower the occurrence, strength and length of panic episodes.
2. Minimize the worry, about panic signs resurfacing uncontrollably.
3. Alleviate the fright of death and provoking panic and stop avoiding situations or places that might trigger panic.
4. Boost confidence in going out without hesitation, attending family funerals and staying home alone comfortably.
5. Rediscover enjoyment in activities in life.

Relaxation training plays a role in psychological intervention strategies for panic disorder and has shown significant success (Karimova, 2018). In this process the client learned a method of deep breathing to use during episodes of hyperventilation to regain control over her breathing rhythm. Additionally, she was instructed in breathing techniques for stress management and provided with an audio guide on Progressive Muscle Relaxation, for relieving muscle tension as suggested by Leahy (2018).

Introducing and explaining ABC model. Following the ABC model to help client to eliminate automatic negative thoughts by replacing them with the positive ones by challenging unhelpful thoughts and thinking styles.

Cognitive restructuring to challenge thoughts related to panic like symptoms. The core of Cognitive Behavioral Therapy lies in the technique of restructuring thoughts, where a client's negative thoughts are identified, challenged and replaced with alternatives (Leahy, 2018).

This process involves four steps; initially the client acknowledges how her thoughts influence her emotions and behaviors creating a cycle of interconnected reactions. By recognizing thinking errors, the client then evaluates the validity of those thoughts through evidence for and evidence base results. Finally, the client formulates statements based on reality, then solely rational thinking leading to more manageable emotions and adaptive behaviors.

This restructuring process aims to alleviate symptoms and address distortions such as filtering, exaggeration, or minimization, catastrophizing, all or nothing thinking, overgeneralization and predictive assumptions collaboratively with the client. The client learned how to seek out evidence supporting and challenging her beliefs. She was given tasks to counter her thoughts by presenting alternative perspectives. She was also educated to recognize her thought errors such as catastrophic thoughts, and how to correct this type of distorted thinking.

Mindfulness being in the present moment, for overthinking was suggested. Other techniques included guiding her about proper sleep hygiene and proper meal tracking and importance of both.

Guided imagery was also done with her. Gratitude journal was made and coping with daily life stressors was taught to her.

Behavioral activation through pleasurable activities to bring back her interest in life and elevate her mood, routine management and better activity was done. She was also given *behavioral experiments* which were part of her treatment, for challenging negative thoughts, exposing her to feared situations, reducing avoidance behaviors, developing a sense of control and promoting long term progress.

In the *termination phase*, she was assessed with effectiveness of therapeutic interventions. Therapy goals were reassessed whether they have been achieved. The client was prepared for the termination of sessions. She received education on fluctuations in symptoms, lapses and preventing relapses, and the Panic Disorder Severity Scale-Adults was re-administered as post assessment. A follow up session was scheduled in a month to track improvement.

Figure 1: Client’s Idiosyncratic Model of Panic Attack

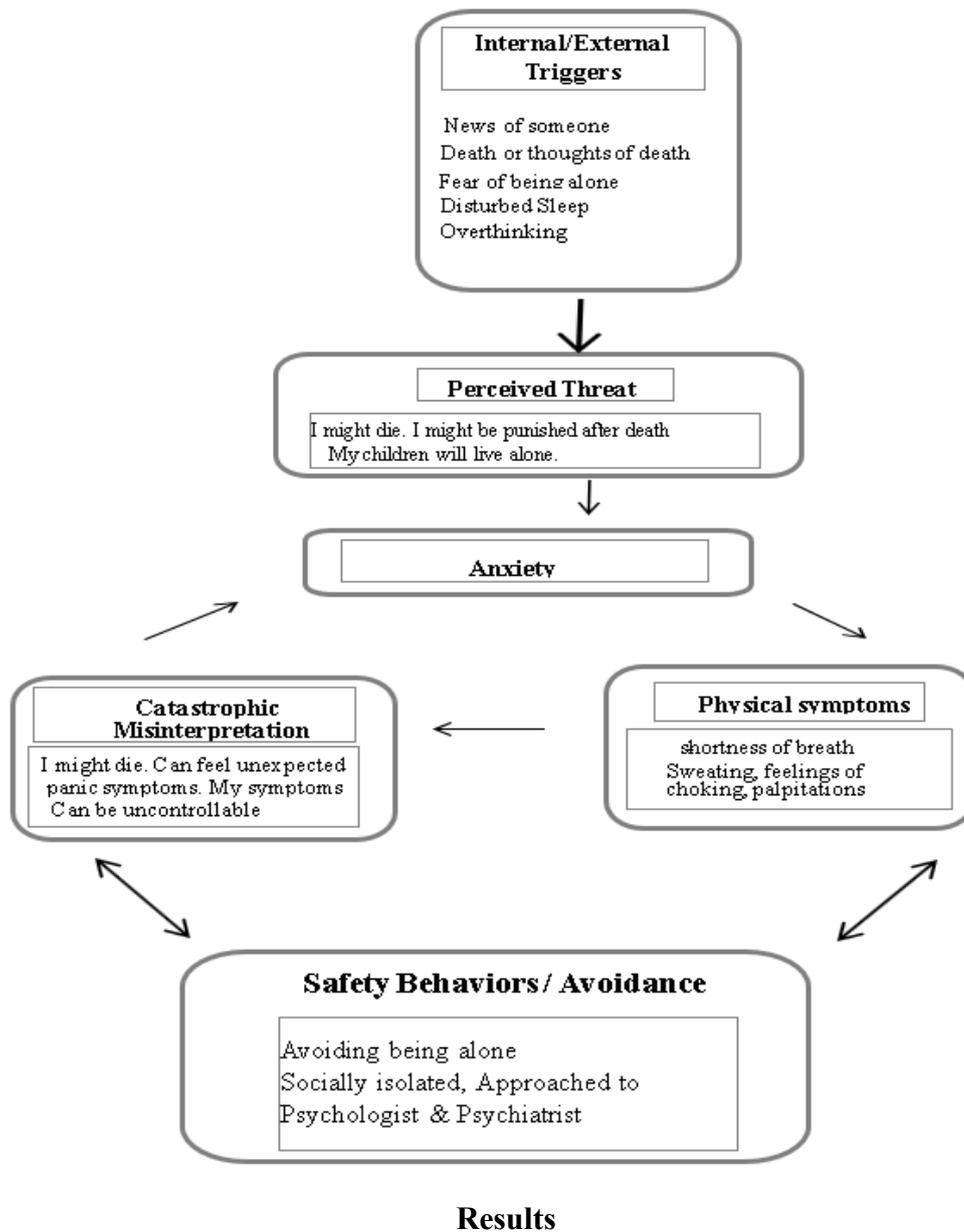


Table 1
Presenting Pre and Post Treatment of participant

Tool	Cutoff	Pre-Obtained Score	Severity Level	Post-obtained score	Severity level
PDMA	40	34	Severe	16	Mild

1. The client became more aware of what triggered her panic attacks and acquired techniques to manage them effectively. Her negative thoughts were gradually reconstructed into positive ones.
2. She practiced deep breathing, progressive muscle relaxation and mindfulness exercises, which helped her regulate her emotions better.

3. By restructuring her thoughts, she developed a view of her fears and worries resulting in a decrease in overall anxiety levels including the death anxiety.
4. Improved sleep quality and reduced insomnia symptoms were reported by the individual indicating an impact on her wellbeing.
5. Actively engaging in setting achievable goals and creating plans to address future challenges related to panic disorder was an essential part of the treatment process.
6. The support from family and friends played a role in the patient's recovery journey by offering encouragement and understanding throughout therapy.
7. The individual expressed feeling empowered and confident in managing her emotions and responses in triggering situations.

Discussion

The aim of the current case study was to analyze the effectiveness of cognitive behavior therapy for panic disorder. Case conceptualization and treatment planning was done according to the protocols of CBT, and 16 sessions of 45-50 minutes duration were conducted with the client. The findings showed noteworthy change in client's mental health, symptoms of Panic disorder, preoccupation with death anxiety and her interpersonal relationships according to the subjective reporting of the client, revisiting therapeutic goals and the post-treatment analysis. CBT is an established treatment approach for psychological disorders of various kinds such as OCD, Depression, GAD, Illness Anxiety Disorder, and various personality disorders worldwide, as well as locally (Khalid et al., 2020; Bukhari et al., 2018). Specifically with Panic disorder, CBT has been found effective not only for fast recovery, but also for the long-term maintenance (Otto & Deveney, 2005).

The CBT model of panic disorder focuses on disconnecting the link between physical sensation and fear, when fear cycle gets broken, the panic attacks diminish as well (Shear, 1994), and the same happened with the client. Her focus was initially shifted to external world by using grounding techniques, mindfulness and behavioral interventions, so her focus on bodily symptoms got reduced. Later, through cognitive interventions, she learned to restructure her misinterpretations of the situation as threatening to more rational thoughts which led to the reduction initially, and elimination of panic attacks as per therapeutic goals.

Conclusion of the Study

During the phase of therapy, the client went through a change showing more trust and bliss as she tackled her fears and worries. She felt contentment with how she dealt with her challenges, enjoying activities that used to feel unfulfilling and saw improvements in her relationships while strengthening her connection to her faith. The effectiveness of CBT was clear in addressing her panic disorder leading to noticeable improvements in her mental health. Other key points include self-awareness challenging thoughts effectively adopting a resilient outlook on life's uncertainties improving emotional control and stress management skills incorporating mindfulness practices into daily life and taking a holistic approach that considers psychological, emotional and spiritual aspects, on the path to mental wellbeing. Along with several merits of case studies, there are some demerits of the single case study design such as threat to external validity, for which comparison group or control group can be used so the results can be more generalized.

Acknowledgement: We are grateful to the client for giving her consent to write this case study.

Conflict of interest: There was no conflict of interest in this research.

Funding disclosure: there was no funding in this research.

Author's Contribution: Ayesha Ahmad (Assessment and Therapeutic interventions and Write-up); Rabia Mushtaq, PhD. (Case supervision, Case conceptualization, write-up and proof reading)

References

- Ali, F., & Zeb, R. (2023). Adaptation of Thematic Apperception Test in Pakistan. *FWU Journal of Social Sciences*, 17(4). <https://doi.org/10.51709/19951272/Winter2023/6>
- American Psychiatric Association (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). Washington, DC: Author
- American Psychiatric Association (2022). *Diagnostic and Statistical Manual of Mental Disorders*. In *Diagnostic and Statistical Manual of Mental Disorders*. <https://doi.org/10.1176/appi.books.9780890425787>
- Barlow, D. (2001). *Clinical handbook of Psychological Disorders*. New York: Guilford Press
- Bukhari, S. R., Saba, F., & Fatima, S. I. (2018). The Efficacy of Cognitive Behavior Therapy for Obsessive Compulsive Personality Disorder. *Pakistan Journal of Clinical Psychology*, 17(1), 29-38
- Clark, D. M. (1986). A cognitive model of panic. *Behaviour Research and Therapy*, 24, 461-470.
- Craske, M. G., Farchione, T. J., Allen, L. B., Barrios, V., Stoyanova, M., & Rose, R. (2007). Cognitive behavioral therapy for panic disorder and comorbidity: More of the same or less of more? *Behaviour Research and Therapy*, 45(6). <https://doi.org/10.1016/j.brat.2006.09.006>
- Gigi, A. (2015). Human Figure Drawing (HFD) Test is affected by Cognitive Style. *Clinical and Experimental Psychology*, 02(01). <https://doi.org/10.4172/2471-2701.1000111>
- Goodenough, F. L. (1926). Racial differences in the intelligence of school children. *Journal of Experimental Psychology*, 9(5), 388–397. <https://doi.org/10.1037/h0073325>
- Hofmann, S. G. (2007). Cognitive factors that maintain social anxiety disorder: A comprehensive model and its treatment implications. *Cognitive Behaviour Therapy*, 36(4). <https://doi.org/10.1080/16506070701421313>
- Karimova, H. (2018). *Relaxation Exercises, Techniques, Music and Meditations*. Positive Psychology.
- Khalid, S., Majeed, A., & Khan, K. A. (2020). Cognitive Behavioral Therapy for Illness Anxiety Disorder: A Case Study. *Pakistan Journal of Clinical Psychology*, 19(1), 63-76.
- Khattra, J., Angus, L., Westra, H., Macaulay, C., Moertl, K., & Constantino, M. (2017). Client perceptions of corrective experiences in cognitive behavioral therapy and motivational interviewing for generalized anxiety disorder: An exploratory pilot study. *Journal of Psychotherapy Integration*, 27(1). <https://doi.org/10.1037/int0000053>
- Leahy, R. L. (2018). Cognitive therapy techniques: A practitioner's guide, 2nd ed. In *Cognitive therapy techniques: A practitioner's guide, 2nd ed.*

- Machover, K. (2006). Personality projection in the drawing of the human figure: A method of personality investigation. In *Personality projection in the drawing of the human figure: A method of personality investigation*. <https://doi.org/10.1037/11147-000>
- Miclea, M., Miclea, S., & Ciucă, A. (2008). Computer-supported psychotherapy should pay attention to e-learning. *Cogniție Creier Comportament*, 12(1).
- Murray, H. A. (1943). *The Thematic Apperception Test: Manual*. Cambridge, MA: Harvard University Press.
- Otto, M. W., & Deveney, C. (2005). Cognitive Behavioral Therapy and the Treatment of Panic Disorder: Efficacy and Strategies. *Journal of Clinical Psychiatry*, 66(4), 28-32.
- Playford, E. D., Dawson, L., Limbert, V., Smith, M., Ward, C. D., & Wells, R. (2000). Goal-setting in rehabilitation: Report of a workshop to explore professionals' perceptions of goal-setting. *Clinical Rehabilitation*, 14(5). <https://doi.org/10.1191/0269215500cr343oa>
- Pompoli, A., Furukawa, T. A., Efthimiou, O., Imai, H., Tajika, A., & Salanti, G. (2018). Dismantling cognitive-behaviour therapy for panic disorder: a systematic review and component network meta-analysis. *Psychological medicine*, 48(12), 1945–1953. <https://doi.org/10.1017/S0033291717003919>
- Pompoli, A., Furukawa, T. A., Imai, H., Tajika, A., Efthimiou, O., & Salanti, G. (2016). Psychological therapies for panic disorder with or without agoraphobia in adults: A network meta-analysis. In *Cochrane Database of Systematic Reviews*, 4. <https://doi.org/10.1002/14651858.CD011004.pub2>
- Rorschach, H. (1921). *Psychodiagnostik: Methodik und Ergebnisse eines wahrnehmungsdiagnostischen Experiments (Dentenlassen von Zufallsformen)*. Bern: Ernst Bircher
- Shear, M. K. (1994). Cognitive Behavioral Treatment Compared with Nonprescriptive Treatment of Panic Disorder. *Archives of General Psychiatry*, 51(5), 595. doi:10.1001/archpsyc.1994.0395005005500610.1001/
- Tariq, H., Mahmood, K., Ali, S., & Ahmad, L. (2022). Effectiveness of Cognitive Behavior Therapy for Panic Disorder. *Webology*, 19(2), 6169-6183.
- Van Dis, E. A. M., Van Veen, S. C., Hagenars, M. A., Batelaan, N. M., Bockting, C. L. H., Van Den Heuvel, R. M., Cuijpers, P., & Engelhard, I. M. (2020). Long-term Outcomes of Cognitive Behavioral Therapy for Anxiety-Related Disorders: A Systematic Review and Meta-analysis. *JAMA Psychiatry*, 77(3). <https://doi.org/10.1001/jamapsychiatry>