



## Discussion and Evaluation of the Added Benefits of Using Cognitive Behavioral Therapy in the Treatment of Addictive Disorders

Hawraa Sameer Sajwani

### Abstract

Cognitive behavioral therapy (CBT) has been used in the treatment of patients with alcohol/substance use disorders alone or in combination with other psychotherapeutic techniques and pharmacological interventions. It has also been applied for patients with polysubstance dependence or with co-occurring mental health disorders. Evidence from many observational studies and interventional clinical trials have shown that CBT is an effective treatment strategy for addictive disorders including substance use and behavioral disorders such as gambling and internet addiction. It has comparable efficacy to other psychotherapeutic treatment modalities. However, there have been mixed results when CBT is combined with other psychotherapeutic strategies. Further research is needed to determine the most effective approach and the ideal number of sessions or duration of treatment required. This paper explores the added benefits of using CBT in addiction treatment.

**Keywords:** Cognitive behavioral therapy; CBT; Psychology; Psychotherapy; Substance use disorder; Alcohol; Opioid; Amphetamines; Cocaine; Cannabis; Internet addiction; Gambling disorder

### Introduction

Cognitive behavioral therapy (CBT) is a form of psychotherapeutic treatment that identifies unhealthy patterns of thinking, which can contribute to and worsen negative emotional states and subsequently lead to faulty or maladaptive patterns of behavior and action. It combines cognitive therapy with behavioral therapy and focuses on replacing automatic negative thoughts with healthier and more adaptive ways of thinking leading to more desirable or acceptable feelings, emotional responses, behavior or actions.

Through CBT, unhelpful problematic thoughts or cognitive distortions are identified, challenged, and substituted with more objective and effective thoughts to better cope with a particular situation. The therapist and client will work collaboratively to evaluate the problem and develop a treatment strategy employing the appropriate and applicable CBT techniques.

CBT is one of the most applied psychological interventions for several mental health conditions [1]. It has been demonstrated to be effective for depressive disorders, anxiety disorders (panic/phobia), obsessive-compulsive disorder, eating disorders, and insomnia/sleep-related problems. It is also utilized for trauma- and stressor-related disorders, borderline personality disorders, psychotic disorders and marital issues. CBT can also help alleviate the symptoms of some chronic pain conditions such as fibromyalgia, chronic fatigue syndrome and irritable bowel syndrome.

### Affiliation:

MSc Addiction Studies, King's College London, Virginia Commonwealth University, and the University of Adelaide.

Consultation-Liaison Psychiatry Fellowship, University of Toronto.

Addiction Psychiatry Fellowship, University of California, Los Angeles, United States.

### \*Corresponding author:

Hawraa Sameer Sajwani MBBCH, MSc, MRCPsych, CMQ, MSc Addiction Studies, Virginia Commonwealth University, King's College London and the University of Adelaide. Consultation-Liaison Psychiatry Fellowship, University of Toronto. Addiction Psychiatry Fellowship, University of California, Los Angeles, United States.

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CBT has also shown efficacy with alcohol and substance use disorders. CBT alone or in combination with pharmacological interventions has been used for various substance use disorders (SUDs) [2, 3], as well as for other co-occurring mental health disorders [4]. CBT for SUDs focuses on re-constructing distorted cognitive thinking regarding the client's own self, the world, and the future. It helps them identify problematic thoughts associated with substance use, engage in substance-free recreational activities, and develop healthy coping skills and mechanisms to rebuild a balanced lifestyle for the maintenance of recovery and relapse prevention [5, 6].

The format of CBT sessions for SUDs is either individual or group therapy. Individual sessions focus more on developing a personalized management plan [7], whereas group sessions focus on sharing experiences and peer support for early recovery, triggers and craving management, and relapse prevention [8]. For decades, several other evidence-based psychosocial treatments for SUDs and other Behavioral addictive disorders have been used besides CBT, such as motivational interviewing, motivational enhancement therapy, contingency management, and twelve-step facilitation therapy [9]. However, research has not demonstrated that one psychosocial treatment is superior to others, and existing treatments are showing modest effectiveness [10]. In this article, the evidence for the effectiveness of CBT for various substance and Behavioral addictive disorders is explored through a literature review of some of the available studies.

## Discussion and Evaluation of the Added Benefits of Using Cognitive Behavioral Therapy in the Treatment of Addictive Disorders

CBT has been used to address SUDs for many years and is also used frequently in research and academic settings [11, 12]. According to the Cognitive Model in SUD, it is deemed that the process of abusing a substance and developing dependence or engaging in a maladaptive behavior leading to behavioral dependence is a learned behavior. Similarly, the achievement of abstinence is also considered a learning process [13], and both follow Pavlov's classical conditioning theory. However, Skinner's operant learning is also employed in behavioral interventions that focus on interrupting compulsive substance use by rewarding successful attempts of cessation of use.

Cognitive interventions involve cognitive restructuring by modifying unrealistic expectancies or amplified positive expectations from using the substance of choice such as alcohol or cannabis, changing maladaptive beliefs about the effects of that substance and enhancing motivation toward abstinence or sobriety [13].

Ample leisure time, lack of engagement in non-alcohol/substance related activities, low self-efficacy in resisting

cravings and triggers, poor problem-solving skills, lack of control on alcohol/substance use urges and positive expectancies of use are considered as critical predictors of relapse and persistence of substance use. CBT-based interventions are amongst the most effective treatments to address the aforementioned factors including for adolescents that usually are less likely to seek medical attention and be less willing or motivated to engage in treatment [14].

CBT is one of the psychotherapeutic modalities of choice for alcohol use disorders (AUD) [15]. It has shown considerable success with it, either alone [15] or in combination with pharmacotherapy such as naltrexone [11, 16, 17]. CBT for alcohol and substance use disorders employs several distinct therapeutic strategies including motivational elements and coping skills building. It may be applied as monotherapy or in combination with other psychological treatment interventions [18] emerging into an eclectic approach that utilizes several core elements from different therapies, with the target of surpassing the powerful reinforcing effect of the psychoactive substance of choice [19].

Studies on AUD with polysubstance dependence or co-occurring disorders have revealed modest but significant effects of implementing CBT techniques. A meta-analysis on CBT treatment efficacy for adults diagnosed with alcohol and other substance use disorders examined more than 50 controlled trials and concluded that CBT produced a small but statistically significant treatment effect [20]. Another meta-analysis analyzing studies comprising more than 1700 clients found that combining CBT with motivational interviewing to treat comorbid AUD and major depression had a small but clinically significant effect in treatment outcomes compared to standard care [21]. However, some studies have yielded negative results for combining other strategies with CBT such as contingency management [22].

In an attempt to understand the mechanism of behavioral change within psychosocial treatments such as CBT for AUD, it is postulated that utilizing coping skills to change one's alcohol use may depend upon the degree of alcohol dependence severity [23]. Developing a greater understanding of this is aimed at ultimately optimizing treatment outcomes through the refinement and personalization of treatment delivery. It is plausible that higher dependence severity may warrant a greater need to utilize alcohol-specific coping skills to change one's alcohol use pattern and to prevent relapse, especially since this group is particularly characterized by frequent returns to drinking following periods of abstinence [24].

Alcohol-specific coping skills aim directly at challenges related to AUD such as avoiding alcohol-related cues, reappraising the consequences of drinking, seeking social support in high-risk triggering situations, and engaging in alternative behavioral activities [25]. All these skills are an

integral part of CBT, similar to motivation enhancement therapy and twelve-step facilitation [26].

CBT is also found effective in reducing other illicit drug use and psychological stress, along with improving treatment retention in opiate-dependent patients on methadone maintenance treatment (MMT) [8]. An RCT in China looked into combining MMT with individual weekly CBT, and group once monthly CBT for 26 weeks. They developed a manual-based CBT protocol for one-to-one CBT sessions occurring in three stages over 6 months. The initial stage focused on building treatment relationships and enhancing motivation for MMT. Then the focus shifted to coping skills training, recognition and management of triggers for opiate use. The last stage focused more on maintaining abstinence, managing psychological stress, and building a balanced lifestyle. They found that the group that received their manual-based CBT protocol improved more functionality wise such as with vocational or employment opportunities and had decreased psychological stress levels compared with the control group of MMT only [8].

Treatment with CBT appears to be associated with reductions in methamphetamine use as well as other positive changes such as drug-free urine samples and longer periods of abstinence during treatment [27]. The likelihood of abstinence from amphetamines is significantly increased after two or more CBT treatment sessions [28]. When combined with motivational interviewing, CBT has also shown a significant decrease in depression rates post-treatment for cocaine dependence even after brief therapy of two to four CBT sessions only [2, 27, 28]. Results have been sustained during 52-week follow-ups with 60% of patients that received CBT maintaining clean toxicology screens [29].

Some studies have endorsed the efficacy of CBT in reducing cocaine use for patients on methadone maintenance treatment as well as for ones that have co-morbid use of cocaine [29]. However, some data suggests that community reinforcement approaches with contingency management are superior to CBT alone in achieving abstinence in individuals with cocaine and/or amphetamine use disorders [30].

CBT has shown good efficacy with cannabis use disorder, and when combined with motivational enhancement therapy, both interventions have shown increased effectiveness in reducing the use of cannabis and achieving the target of abstinence even when delivered briefly [17], with as few as two sessions only when compared to the control group [31]. A meta-analysis looking at more than 2,300 patients from several randomized controlled trials and reviews found the largest treatment effect with cannabis use disorder clients, followed by cocaine and opioids, while the smallest effect size was with polysubstance dependence. However, contingency management approaches showed more promising results than CBT strategies such as relapse prevention [18]. Some studies

also suggested that CBT outcomes were not as promising for patients with co-occurring anxiety disorders even when combined with motivation-enhancement therapy [32].

There are high rates of co-occurring depressive disorders among people with SUDs especially young adults [33, 34]. In a preliminary study in Melbourne, 60 young people aged 15 to 25 that presented to a mental health setting with a diagnosis of major depressive disorder with a co-occurring SUD received 10 sessions of individual CBT sessions delivered over 5 months [4]. The intervention was associated with significant improvements in depression and anxiety symptoms, substance use rates, coping skills and functioning. These changes were maintained at a 6-month follow-up as well [4]. Another common association is co-morbid post-traumatic stress with SUDs. An RCT conducted over 7 community addiction treatment programs compared CBT with standard care to individual addiction counseling with standard care [35]. The CBT arm was as effective as individual addiction counseling in reducing PTSD re-experiencing and other symptom severity, and improving substance use outcomes [35].

An RCT comparing the efficacy of mindfulness-based addiction treatment (MBAT) to CBT and usual care for smoking cessation found that compared to usual care, those who received CBT reported improvement in negative emotional states such as anxiety, depression, stress, dependence motives, anger, concentration difficulties, and expectations of affect regulation by smoking, with higher self-efficacy to avoid smoking while experiencing negative emotional states [36]. Besides, compared with standard care, CBT predicted higher odds of abstinence at 4 weeks and 26 weeks post-smoking cessation. The effects of MBAT appeared very similar to CBT in the psychosocial mechanisms implicated in tobacco dependence [37].

In terms of Behavioral addictive disorders, research has identified internet addiction as a possible new emerging clinical disorder over the last decade. It can be impairing to the user's functionality and cause occupational and social problems. Researchers are suggesting using CBT as the treatment of choice for internet addiction. A study investigating 114 clients who suffered from internet addiction and received CBT reported that most clients were able to manage their presenting complaints by the eighth session, with sustained results during a 6-month follow-up period [38].

The therapeutic effectiveness of group CBT for internet addiction in adolescents has been examined as well. In an RCT, more than 50 patients (aged 12–17 years) with internet addiction were randomized into an eight-session multimodal school-based group CBT or a control group with no intervention [39]. Internet use decreased in both groups while only the CBT group improved on time management skills, behavioral self-management strategies and emotional

regulation ability immediately after the intervention and at 6 months follow up [39].

Gambling disorder is another non-substance related addictive disorder for which CBT is proposed to be an effective treatment strategy. A study looked at the clinical effectiveness of a CBT program specifically adapted for pathological gamblers with chronic schizophrenia. It was carried out in a naturalistic setting of community mental health centers, where more than 40 pathological gamblers with chronic schizophrenia were recruited [40]. The patients treated in the experimental group showed a statistically significant success of above 70% compared to only 19% in the control group. The CBT program consisted of a 20-session program covering stimulus control, gradual exposure, relapse prevention, and psychoeducation. A positive outcome was defined as abstinence or the occurrence of only a single or a couple of episodes of gambling during the follow-up period. Despite this being a very challenging group of patients, CBT provided substantial benefits as a treatment modality [40].

## Conclusion

In summary, evidence from several observational studies and interventional clinical trials has shown that CBT is an effective treatment strategy for addictive disorders including alcohol/substance use and behavioral disorders. It also has comparable efficacy to other psychotherapeutic treatment modalities. However, the treatment effect size has been relatively small in many studies and the literature has also been inconsistent in replicating some of the positive results widely. This informs the need for more randomized trials to replicate the efficacy, comparability, or superiority of CBT.

CBT can be enhanced with other types of psychotherapies for addictive disorders and co-occurring disorders, such as motivational interviewing, motivational enhancement therapy, and mindfulness-based addiction *treatment*. Some studies have yielded negative results for combining other strategies such as contingency management. Duration-wise, some studies have suggested a brief number of sessions is effective, while others have suggested a higher number of sessions would achieve better results and longer periods of abstinence for people who chronically use illicit substances, although there is considerable variability in the structure of the CBT sessions. This also warrants the need for more studies of combination therapies with various treatment lengths to determine the most effective approach.

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