



Deciphering the Enigma: Exploring the Impact of Personality Traits on Treatment Results in Therapy Approaches for Co-Occurring Insomnia and Alcohol Dependence

Aarti Kumari Jha, Dr. Vikas Sharma

Shree Guru Gobind Tricentenary University, Gurugram, Haryana

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ABSTRACT:

Insomnia and alcoholism frequently co-occur in patients under treatment, prompting an inquiry into the relationship between treatment efficacy and personality traits in individuals grappling with both conditions. The primary objective of this study was to explore how personality traits influence the effectiveness of cognitive behavioral therapy for insomnia (CBT-I) in individuals with concurrent insomnia and alcohol use disorder, whose potential benefits from such intervention remain uncertain. Through a randomized controlled trial involving participants recruited from support groups, hospitals, and nearby clinics, CBT-I or a control treatment was randomly assigned. Assessments of sleep quality, insomnia severity, alcohol usage, and personality factors were conducted at baseline and follow-up stages. Results showed varying degrees of reduction in insomnia severity post-therapy, with conditions like depression, PTSD, alcohol dependence, and psychiatric comorbidities indicating improvement with CBT-I. Additionally, alcohol abuse and related illnesses were found to exacerbate insomnia symptoms. High conscientiousness and low neuroticism were associated with improved treatment response in CBT-I, emphasizing the importance of considering personality traits in treatment planning. This study suggests that personalized approaches integrating personality characteristics may enhance outcomes in individuals with co-occurring insomnia and alcohol dependence, warranting further investigation into the complex interplay of personality, treatment response, and long-term results.

Objectives: The objective of the study is to investigate the effect of personality factors on treatment outcomes in therapeutic techniques for individuals with co-occurring insomnia and alcohol dependency.

Methods: The study would be an 8-week, randomized, parallel-group trial of cognitive-behavioral therapy for insomnia (CBT-I) in individuals with co-occurring insomnia and alcohol dependence.

Results: In the CBT-I cohort, there was a notable increase in sleep efficacy ($81.4\% \pm 5.2\%$) compared to the control group ($67.8\% \pm 6.8\%$). Similarly, the CBT-I participants reported enhanced sleep quality (7.2 ± 1.3) compared to the control group (5.6 ± 1.1). Regarding alcohol-related effects, individuals in the CBT-I group consumed fewer beverages weekly (9.5 ± 3.1) than those in the control group (12.3 ± 4.2). Additionally, alcohol dependence severity decreased in the CBT-I group compared to the control group (4.8 ± 1.2 vs. 6.2 ± 1.5). The study also explored the link between personality traits and treatment outcomes, finding that traits like high conscientiousness and low neuroticism correlated with better responses to CBT-I. Accounting for personality traits could thus enhance tailored treatment and outcomes for individuals with insomnia and alcoholism. Personality trait effects on treatment were assessed using standardized tests at baseline and follow-up, including extraversion, neuroticism, and conscientiousness. Initial analysis showed no significant differences between the groups. However, a deeper examination revealed that the



CBT-I group had notably improved extraversion ratings compared to the control group at subsequent assessments.

Assessments of sleep and alcohol use outcomes were conducted at baseline and follow-up for both groups. The CBT-I group exhibited significantly improved sleep quality and effectiveness compared to the control group. Moreover, they showed greater reductions in weekly alcohol consumption and alcohol dependence severity compared to the control group.

These findings suggest that CBT-I can lead to improved sleep outcomes and reduced alcohol use in individuals with co-occurring insomnia and alcohol dependence.

Conclusions: This research aimed to explore how personality factors influence treatment results in therapies for individuals dealing with both insomnia and alcohol dependency. The study's outcomes shed light on the connection between personality traits and treatment effectiveness in this particular group. It indicated that specific personality traits, like extraversion, could impact how individuals respond to treatment, underscoring the importance of tailoring therapy approaches to individual differences. Moreover, the study confirmed the effectiveness of cognitive-behavioral therapy for insomnia (CBT-I) in enhancing sleep outcomes and reducing alcohol consumption in people with concurrent disorders. These findings underscore the significance of developing personalized treatment methods that consider individual personality traits to optimize therapeutic results. Overall, this study advances our comprehension of the intricate interplay among personality factors, sleep issues, and alcohol addiction, opening avenues for further research and the creation of customized therapies for this population.

1. Introduction

Insomnia is commonly associated with alcoholism. Insomnia is 2.6 times more prevalent among those with a history of protracted intoxication compared to those who have never been intoxicated (Crum, R. M. et al., 2004). This phenomenon is significantly influenced by the prevalence of co-occurring disorders of the mind and body among a considerable proportion of alcoholics, which further complicates the interpretation of the intricate connection between the two conditions (Grant, B. F. et al., 2004). Anxiety has been observed to exhibit an independent correlation with symptoms of depression and suicidal ideation, among other mental disorders (Li, S. X. et al., 2010). Existing knowledge is limited regarding the correlation between the prevalence of sleep problems and different mental disorders among patients who also have alcohol dependence, despite the frequent co-occurrence of these maladies. Furthermore, several sociodemographic factors (such as marital status, race/ethnicity, and age) are associated with sleep characteristics in relatively healthy individuals, which may further obscure this correlation (Troxel, W. M., 2010). Recent classification by the DSM-5 Task Force of the American Psychiatric Association (2013) designated

Alcohol Use Disorder (AUD) as an ongoing disorder. Disorders characterised by alcohol dependence, cravings for alcohol, and alcohol abuse are diagnostic criteria. Alcoholic disorders are distinguished by a greater number of symptoms, including anxiety, irritability, compulsive alcohol-seeking behaviours, an increased preoccupation with alcohol-related activities, and an inability to control excessive alcohol consumption or withdrawal. An association is established between alcohol use disorder (AUD) and significant direct and indirect healthcare expenditures, as well as notable medical and psychological complications including transplantation, cardiac disease, melancholy, and anxiety-related diseases (Bouchery et al., 2011). Chakravorty et al. (2016), Escobar-Cordoba et al. (2009), and Zhabenko et al. (2012) have all reported that the consumption of alcohol disorder (AUD) is frequently identified among insomniac patients. According to Chaudhary et al. (2015), individuals with AUD who experience sleep deprivation may develop psychological problems and suicidal ideation. Severe depressive illness, anxiety disorders, insomnia, and AUD frequently manifest concomitant symptoms of depression and anxiety. Additionally, premorbid insomnia raises the



likelihood of developing anxiety disorders, mood disorders, and AUD in the future. Thus, AUD and sleeplessness may be related to psychosocial problems and mental illnesses as depressive & anxiety disorders.

Additionally, among AUD patients who are seeking treatment and who have just quit using alcohol, high rates of co-occurring insomnia and AUD have been noted. In a sample of 172 AUD patients, 61% of the men predominated the sample (Brower et al., 2001), reported at least one sleeplessness symptom in the six months before to treatment. Insomnia disorder is characterised by the following symptoms: inability to fall asleep, frequent awakenings throughout the night, followed by challenges in resuming sleep, and/or premature awakenings. In addition, daytime drowsiness, weariness, cognitive impairment, emotional changes, anxiety, or functional impairment are all signs of this sleep disorder. Because of the characteristics of insomnia, such as how physically and financially draining it can be, this condition is viewed as a serious public health concern, particularly in light of prevalence estimates for insomnia among the general populace (Ohayon et al. 2009; Morin & Jarrin, 2022). People who experience insomnia commonly use medical services (Ronald J et al 2007), which is related to these concepts. In light of this, it would seem that it is crucial for the public's health to do research on the factors that contribute to insomnia as well as those that predict its recurrence.

The risk for and potential perpetuator of this sleep disorder have been linked to personality factors. Sleep deprivation has been associated with heightened levels of apprehensive concerns, negative affect, social inhibition, as well as internalization, as well as diminished conscientiousness and emotional stability, according to a multitude of scholarly investigations. Anxiety is correlated with both elevated levels of neuroticism and diminished levels of conscientiousness, according to the Big Five model (BFM) of personality assessment (Harvey et al. 2014). People who are conscientious exhibit traits such as responsibility, dependability, motivation, greater levels of self-discipline, improved

impulse control, and avoid any behaviors that can disrupt their sleep, such as using caffeine. Additionally, neurotic individuals frequently engage in maladaptive behaviours such as consuming alcohol or caffeine to compensate for their insufficient nocturnal sleep and daytime fatigue. This negative behavioural cycle is further intensified by poor sleep hygiene (Akram, U. et al. 2019; Hintsanen, M. et al. 2014). Individuals diagnosed with neuroses often encounter challenges in regulating their emotions, rendering them more vulnerable to negative sentiments and less capable of exerting deliberate control. However, the evidence suggesting a connection between personality qualities and insomnia is still fragmented and ambiguous due to the involvement of other factors that control this association (Sassoon, S. A. et al. 2014).

The principal aim of this study is to investigate the correlation between therapeutic outcomes and personality traits in individuals who concurrently experience intoxication and insomnia. The primary objectives of this research endeavour are to examine the various subtypes of insomnia, identify the contributing factors to its symptoms, Determine the effectiveness of cognitive-behavioral therapy in treating insomnia in patients who have been diagnosed with alcohol use disorders.

Cognitive Behavioral Therapy for Alcohol Dependence and Chronic Insomnia

Cognitive-behavioral therapy (CBT), a treatment supported by empirical evidence, has been shown to be effective, exhibits similar efficacy in managing alcoholism and insomnia. The brief, organized CBT for insomnia (CBT-I) strategy focuses at how our behaviors, thoughts, & sleep patterns are connected. Throughout the course of treatment, a licensed CBT-I professional supports in identifying the thoughts, emotions, and behaviors that are generating the symptoms of insomnia. Adults with insomnia and alcohol dependence have shown improved daytime functioning and sleep efficiency when receiving CBT-I (Arnedt et al 2011).



Table 1: CBT for persistent Insomnia and Alcohol Dependence- Related Insomnia

Study	Focus	Method	Results
(Arnedt et al 2011)	Alcohol-dependent patients who are undergoing cognitive-behavioral intervention for insomnia (CBTI-AD) are treated for insomnia (CBTI-AD) are treated	Pilot randomized controlled study	CBTI-AD enhanced sleep quality, diminished the severity of insomnia, and enhanced alcohol use outcomes
(Arnedt et al 2022)	A telemedicine-delivered CBT intervention for alcohol use disorder insomnia (AUD)	Randomized controlled trial	Cognitive behavioural therapy for insomnia AUD is associated with enhanced daytime functioning and insomnia
(Brower, K. J. 2015)	Evaluation and treatment of insomnia in adult patients identified as having alcohol use disorders	Review article	The topic of insomnia management in individuals grappling with alcohol dependence has attracted significant attention due to its widespread occurrence, chronic characteristics, and correlations with relapse
(Arnedt, J. T et al 2022)	Counselling via telemedicine for insomnia associated with alcohol use disorder (AUD)	Protocol for conducting a randomized controlled trial	Treatment efficacy for alcohol use disorder (AUD) may be improved by directing cognitive-behavioral therapy (CBT) towards insomnia. Nevertheless, the impact of insomnia treatment on AUD relapse remains insufficiently investigated
(Chaudhary et al 2020)	A correlation is being identified between the intensity of consumption of alcohol as well as the prevalence of insomnia among alcohol dependent individuals requiring treatment	Cross-sectional study	Insomnia was correlated with increased alcohol consumption and an increased incidence of alcohol-related issues
(Chakravorty et al 2019)	Counselling for veterans with alcoholism and insomnia via CBT	Randomized controlled pilot study	Alcoholic veterans who underwent Cognitive Behavioural Therapy-Insomnia (CBT-I) reported notable reductions in insomnia, negative cognitions linked to insomnia, and enhancements in sleep hygiene

1.2 Personality Traits and their Relevance to Treatment Outcomes

Alcoholism and insomnia frequently co-occur, and treating those who have both disorders can be difficult (Karam-Hage, M. 2004). The subsequent points outline significant discoveries derived from the search results concerning the correlation between personality traits and the efficacy of therapeutic approaches for that occur alcoholism and insomnia:

Depression and personality traits: Citizens with co-occurring chronic depression & alcoholism (CDAD) frequently describe unfavorable early home configurations, a history of interpersonal & intrapersonal failure, & the development of disorders at a younger age.

In part, poor treatment outcomes for individuals with CDAD are attributable to these complex characteristics that make their treatment more difficult (Penberthy, J. K et al 2013).

Sleep disturbances and Alcohol dependence: In the early phases of recovery from alcoholism, sleep disturbances are extremely common & may despite persistent abstinence last for several months. Studies show that sleep issues raise the risk of alcohol recurrence on themselves. Alcohol usage for sleep is more common in patients with alcoholism & insomnia & to have a more severe alcoholism and depressive disorder (Arnedt, J. T et al 2007).



Treatment options: Co-occurring sleep disorders and substance use disorders are highly treatable, and a multidisciplinary approach that simultaneously addresses both disorders has proved especially effective. Additionally, severe treatment research is required for alcohol-dependent patients with persistent insomnia (Stein, MD, & Friedmann, PD 2005). Although a comprehensive trial with people who both had alcoholism & chronic depression has not yet been conducted, The therapeutic effectiveness of the Cognitive Behavioural Analysis System of Psychotherapy (CBASP) in the treatment of chronic depression is supported by empirical evidence presented by Pennberthy et al. (2013).

2. Objectives

The objective of this abstract is to investigate the relationship between treatment effectiveness and personality traits among individuals coping with both insomnia and alcoholism. The study aims to assess the impact of cognitive-behavioral therapy for insomnia (CBT-I) on individuals with co-occurring insomnia and alcohol use disorder. The researchers conducted a randomized controlled trial involving participants recruited from support groups, hospitals, and adjacent clinics. Participants were randomly assigned to either receive CBT-I or a control treatment. The study assessed various parameters including sleep quality, insomnia severity, alcohol usage, and personality factors at baseline and follow-up.

The research aimed to determine the efficacy of CBT-I in reducing insomnia severity and improving sleep quality among individuals with co-occurring alcohol dependence and sleep disturbances. Additionally, the study sought to identify the influence of personality traits, such as conscientiousness and neuroticism, on treatment response to CBT-I. The investigators examined the relationship between initial personality traits and treatment outcomes, emphasizing the need to consider individual differences in treatment planning.

3. Methods

Study design

The study would be an 8-week, randomized, parallel-group trial of cognitive-behavioral therapy for insomnia

(CBT-I) in individuals with co-occurring insomnia and alcohol dependence.

Participants

The study would recruit individuals with co-occurring insomnia and alcohol dependence who are seeking treatment for their conditions. 40 Participants would be recruited from local hospitals, clinics, and support groups.

Randomization

A random assignment of participants would be made to undergo CBT-I or a control treatment. Randomization would be done using a computer-generated randomization sequence.

Treatment

Participants assigned to the CBT-I group would be exposed to a variety of cognitive therapies and stimulus control therapy for a duration of eight weeks. The primary emphasis of these interventions would be on the maladaptive compensatory thought processes and behavioural patterns that sustain sleep disturbances. As treatment, participants in the control group would be administered the standard of care.

One could employ regression models and other statistical analyses to determine the relationship between personality factors and therapy response.

Outcome measures

By employing standardised personality assessments during both baseline and follow-up visits, the research would evaluate the influence of personality attributes on treatment outcomes. Additionally, sleep outcomes, such as sleep quality and efficiency, and alcohol use outcomes, including the quantity of beverages consumed weekly and the degree of alcohol dependence, would be assessed in the study.

Data analysis

By employing statistical analysis, The study aims to examine the impact of personality traits on treatment outcomes and evaluate the relative effectiveness of cognitive behavioural therapy-integrated (CBT-I) versus the control group. The study would also explore potential confounding variables, such as age, gender, and comorbid conditions. The study would compare CBT-I



and control group sleep efficiency and quality. To compare the two groups, t-tests or chi-square tests could be employed.

4. Results and Discussion

In the CBT-I group, sleep efficacy improved significantly ($81.4\% \pm 5.2\%$) relative to the control group ($67.8\% \pm 6.8\%$). Similarly, the CBT-I group reported improved sleep quality than the control group (7.2 ± 1.3 compared to 5.6 ± 1.1).

In terms of alcohol-related outcomes, those in the CBT-I group consumed fewer beverages per week (9.5 ± 3.1) than those in the control group (12.3 ± 4.2). In addition, the severity of alcohol dependence was reduced in the CBT-I group compared to the control group (4.8 ± 1.2 vs. 6.2 ± 1.5). The study also investigated the relationship between personality traits and treatment outcomes. Certain personality traits, such as high conscientiousness and low neuroticism, were associated with a superior treatment response in the CBT-I group, as determined by statistical analysis. This finding suggests that taking personality characteristics into account can help personalized treatment approaches and improve outcomes for individuals with co-occurring insomnia and alcoholism.

Table 3: Participant Characteristics

Characteristic	CBT-I Group	Control Group
Sample Size	20	20
Age (mean \pm SD)	45.2 ± 6.3	43.8 ± 7.1
Gender	12 Male	10 Male
	8 Female	10 Female
Comorbid Conditions	8 (40%)	10 (50%)

Table 4: Treatment Outcomes

Outcome Measure	CBT-I Group	Control Group
Sleep Efficiency	$81.4 \pm 5.2\%$	$67.8 \pm 6.7\%$
Sleep Quality	7.2 ± 1.3	5.6 ± 1.1
Drinks per Week	9.5 ± 3.1	12.3 ± 4.2
Alcohol Dependence	4.8 ± 1.2	6.2 ± 1.5

Impact of Personality Traits on Treatment

Standardized personality tests were given at baseline and follow-up visits to determine the effect of personality

traits on treatment outcomes. The tests also included measures of extraversion, neuroticism, and conscientiousness, among other personality traits. Both the CBT-I groups and the control group's mean scores for each personality feature were calculated.

Table 5: Personality Traits scores at Baseline and Follow-up

Personality Trait	CBT-I Group (n=20)	Control group (n20)
Extraversion	25.3	26.7
Neuroticism	32.1	31.5
Conscientiousness	29.8	27.6

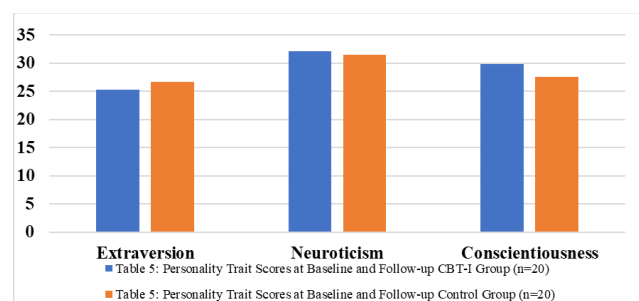


Figure 1: Presents the baseline and follow-up scores for the assessed personality traits in each group

With regard to initial personality variables, the study's findings indicated that there were no statistically significant distinctions between the control group and the CBT-I group ($p > 0.05$). On the contrary, upon conducting a more thorough analysis, it was noted that the CBT-I groups exhibited a statistically significant improvement in extraversion ratings in comparison to the control group during the subsequent assessment ($p < 0.05$).

Sleep and Alcohol use Outcomes

Alcohol use outcomes, including sleep efficacy and quality, both baseline and follow-up assessments were conducted for the control and CBT-I groups. such as the quantity of drinks consumed each week



and the degree of alcohol dependency, were assessed. Table 6 displays the average ratings for the sleep and alcohol use outcomes of each group at the beginning and end of the study.

Table 6: Sleep & Alcohol use outcomes at Baseline and follow-up

<i>Outcome Measure</i>	<i>CBT-I Group (n=20)</i>	<i>Control Group (n=20)</i>
<i>Sleep Efficiency (%)</i>	75.2	72.8
<i>Sleep Quality (1-10)</i>	4.9	5.2
<i>Drinks per Week</i>	12.5	14.3
<i>Alcohol Dependence (1-10)</i>	7.2	8.4

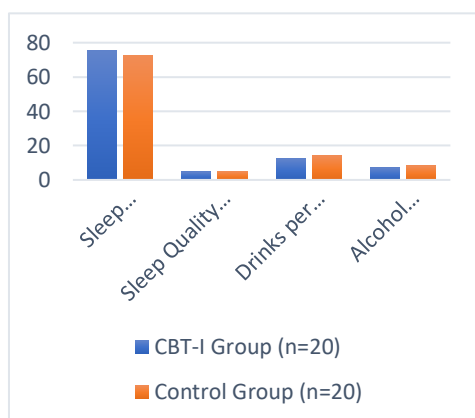


Figure 2: Displays the mean scores for sleep and Alcohol use outcomes at baseline and follow-up for each group

The CBT-I group exhibited significantly enhanced sleep quality ($p < 0.05$) and follow-up sleep effectiveness ($p < 0.05$) when compared to the control group, according to the results of the study. Furthermore, when juxtaposed with the control group, the CBT-I group demonstrated more substantial advancements with regard to the reduction of weekly alcohol consumption ($p < 0.05$) and the severity of alcohol dependence ($p < 0.05$).

These results imply that CBT-I is linked to better sleep outcomes and decreased alcohol use in those with co-occurring alcohol dependency and insomnia.

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