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The Efficacy of Implementing Cognitive Behavioral Therapy for Sleep Disorder

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ABSTRACT
Background: Sleep disorders (SDs) in young adulthood are a growing public health concern due to their impact on well-being, productivity, and social interactions. These disorders are linked to severe health risks, including hypertension, diabetes, and cardiovascular diseases, emphasizing the need for adequate sleep.
Objectives: To review the prevalence, etiology, and non-pharmacological treatment of sleep disorders in young adults, with a focus on the efficacy of Cognitive Behavioral Therapy for Insomnia (CBT-I).
Methods: A review of the literature was conducted to examine the prevalence and contributing factors of SDs in young adults. Evidence-based approaches to treatment, particularly CBT-I, were evaluated, along with barriers to its implementation and strategies for improving accessibility.
Results: CBT-I is an evidence-based intervention targeting insomnia by addressing maladaptive thoughts and behaviors. It improves sleep quality, duration, and mental health through key components like sleep education, cognitive therapy, sleep hygiene, and relaxation techniques. Implementation of CBT-I includes various formats such as individual and group therapy, workshops, mobile apps, online programs, and telehealth. Studies highlight its efficacy: email-delivered CBT-I improves sleep metrics, group-based interventions reduce maladaptive beliefs, and app-based CBT-I enhances sleep quality and alleviates insomnia symptoms. Telehealth and workshops demonstrate comparable effectiveness to in-person therapy, while individualized CBT-I significantly outperforms sleep hygiene practices. Digital CBT-I expands accessibility, but adherence and privacy concerns remain barriers.
Conclusions: Prioritizing sleep health and adopting evidence-based treatments like CBT-I can mitigate the effects of sleep disorders in young adults. Addressing barriers through awareness campaigns, training programs, and digital CBT-I delivery could enhance its implementation, improving quality of life and promoting a healthier society.

Keywords: sleep education, non-pharmacological treatment, insomnia, cognitive behavioral therapy, sleep disorder

INTRODUCTION

Research on sleep disorders (SDs) is gaining attention due to an increase in the number of reports recorded related to sleep and the overall well-being of young adults. Although good quality of sleep is an important aspect of life, this disorder causes huge distress affecting productivity, performance, and social interactions. It can affect a person at any age, most considerably prevalent among young adults. McArdle et al., (2020) conducted a cross-section study and observed that one in five young adults undergo some form of sleep disorder. chronic insomnia, severe obstructive sleep apnea (SOSA), restless legs syndrome (RLS), and sleep apnea [1]. Adults and the elderly may experience various SDs due to their internal stressors or even underlying pathological conditions. In contrast, young adults frequently encounter sleep disturbances that are not majorly related to physiological problems, instead, these disruptions are typically attributed to psychological factors such as anxiety, depression, or other mental health issues. SDs directly affect the person's well-being resulting in hypertension, diabetes, and heart-related disease, many research suggest that a decrease in sleep increases the risk of morbidity and mortality associated with these conditions. Adequate sleep is crucial for maintaining optimal health, as it supports the heart and circulatory system, regulates hormones, balance metabolism, enhances respiratory and immune functions, and prevents cognitive problems [2]. Ohayon et al. (2000) found that 25% of young adults reported experiencing insomnia, with 4% meeting DSM-IV criteria for chronic

insomnia. Additionally, under 77% of young adults reported symptoms related to sleep disorders, as assessed using the Pittsburgh Sleep Symptom Questionnaire-Insomnia (PSSQ-I). 20% of the population reported day time sleepiness which ultimately results in psychoactive symptoms [3]. SDs among young adults globally is around 10% to 30% with higher rates of reports were published in regions with stressful lifestyle and other environment factors. Which includes the spontaneous change in lifestyle with young adults in a short span, many reports address the inability to focus on academics and other day to day activities. Demographic factor including age, gender and social economic status plays a vital role in determining the prevalence of severity. for example: lower socio-economic background people often experience increased rate of SDs due to stress and limited access to healthcare. Hormonal changes and higher rates of anxiety and depression influence Women to experience more sleep disturbance than men. The prevalence of SDs has been increased over recent decades due to lifestyle changes, increase in screen time and greater societal stress. This narrative review examines the challenges associated with benzodiazepine therapy, explores various implementation methods, and offers solutions for SDs. It also discusses innovative approaches, including the use of mobile apps for more effective management.

METHODOLOGY

The literature selection and analysis for this review followed a systematic methodology. To identify and review relevant articles on cognitive behavioral therapy (CBT), insomnia, benzodiazepine therapy, and related treatments, including digital tools, we conducted a systematic search using databases like PubMed, Google Scholar, Web of Science. Keywords included "cognitive behavioral therapy," "insomnia," "benzodiazepines," "digital CBT," "RCT," and "mobile apps for sleep disorders." We focused on peer-reviewed studies from the last 20 years, prioritizing empirical research, systematic reviews, and meta-analyses. Articles were selected based on relevance to CBT for insomnia, benzodiazepine impacts, or digital interventions, and included those involving young adults, older adolescents, and adults.

Etiology

Genetic factors play an undeniable role in SDs, with studies identifying specific genes associated with sleep patterns and disorders, indicating a hereditary component. Anxiety disorders can significantly influence the ability to fall asleep, while stress increases cortisol levels, potentially leading to depression and subsequent insomnia. Poor sleep exacerbates mental health symptoms and insomnia is a common symptom of major depressive disorder. The use of electronic devices among youth is a major health concern; numerous studies have reported that blue light emitted from screen inhibits melatonin production and delays sleep onset, disrupting the circadian rhythm and causing irregular sleep schedules. Impairments in the sleep environment, such as noise or light, can significantly affect sleep quality, leading to frequent awakenings. Although chronic sleep disorders can pave the way for cardiovascular disease, obesity and type 2 diabetes, most young adults do not commonly exhibit these factors. However, the prevalence of depression, anxiety, and other psychological symptoms among young adults is higher, affecting cognitive functions, resulting in lack of concentration and poor performance [4].

Benzodiazepine Dependency and Efficacy of CBT-I

Benzodiazepines are psychotropic drugs that produce effects similar to alcohol and are commonly prescribed for treating conditions such as insomnia and anxiety disorders. As GABA-A agonists, these drugs have varying half-lives and act as central nervous system depressants, often causing sedation. However, the continuous use of benzodiazepines can lead to dependence and abuse, with approximately 2% of users misusing the drug for its addictive properties. From 1990 to 2013, benzodiazepine use increased by 67%, and misuse has resulted in a 400% rise in related deaths. Benzodiazepines are contraindicated in individuals with sleep apnea, respiratory disorders, and alcohol use disorders, as they can exacerbate conditions like muscle weakness, confusion, and dementia. Abrupt discontinuation of benzodiazepine therapy may trigger withdrawal symptoms, including cravings for benzodiazepines or other substances, further complicating health outcomes. CBT-I is a preferred treatment for patients with insomnia, including those dependent on benzodiazepines. In Otto et al. (2010), the benzodiazepine tapering schedule involved reducing alprazolam by 0.25 mg or 0.125 mg every two days, and clonazepam by 0.25 mg every four to eight days, depending on the initial dose. The CBT-I group received eight weekly sessions lasting 60 to 90 minutes. Successful discontinuation rates were 56% for the CBT-I group, 31% for the relaxation group, and 40% for the taper-only group, although these differences were not statistically significant. However, at three months, 44% of the CBT-I group maintained discontinuation compared to 13% and 27% in the other groups. By six months, 63% of the CBT-I group had successfully discontinued use versus 13% and 27% in the relaxation and taper-only groups, respectively. CBT-I offers the advantage of addressing not only sleep problems but also underlying issues that contribute to insomnia. It is a systematic and effective long-term treatment, with adherence rates of approximately 60% for in-person therapy and 50% for digital formats, surpassing medication in efficacy. The core elements of CBT-I include sleep restriction, which increases sleep

efficiency by limiting time in bed to actual sleep duration, and stimulus control, which strengthens the association between bed and sleep by restricting bed activities to sleep and intimacy. Cognitive restructuring helps patients confront negative thoughts about sleep, while relaxation techniques like progressive muscle relaxation and mindfulness reduce physiological and cognitive arousal, creating a better environment for sleep. Behavioral interventions, such as maintaining consistent sleep-wake routines and improving sleep hygiene (SH), regulate circadian rhythms and enhance sleep quality. Success in CBT-I is predicted by the ability to apply these techniques daily, with reductions in the Insomnia Severity Index (ISI) serving as indicators of longterm success. Group therapy and digital CBT-I have shown similar efficacy to traditional in-person methods, improving access for remote populations. Additionally, insomnia frequently co-occurs with anxiety and depressive disorders, necessitating simultaneous treatment, and CBT-I has proven effective in managing insomnia in patients with sleep apnea. Qualitative research has highlighted the importance of addressing daytime impairment in insomnia treatment, as traditional sleep measures may not fully capture what is meaningful to patients. Understanding behavioral and cognitive factors contributing to insomnia, such as worry and rumination, and addressing them through techniques like daytime rumination moments, can improve treatment outcomes. Reduced worry and rumination have been linked to decreased insomnia severity and enhanced daytime functioning. In Morin et al. (2004), while the primary focus was on comparing BZD tapering alone, CBT-I alone, and BZD tapering plus CBT-I, the study did indeed report significant improvements in sleep quality in the group that received CBT-I alone. Patients who underwent CBT-I without any BZD tapering showed significant enhancements in sleep parameters, indicating that CBTI is effective on its own for improving sleep quality. This highlights the standalone efficacy of CBT-I in treating insomnia, even in patients with long-term BZD use [5][6].

Implementation of Cognitive Behavioural Therapy- insomnia

Cognitive behavioural therapy for insomnia (CBT-I) is an evidence-based management that helps individuals to address the thoughts and behaviours that exacerbate insomnia. CBT-I focuses on changing sleeping habits and misconceptions about sleep. Key components for CBT-I are sleep education, cognitive therapy, sleep hygiene, stimulus control therapy, sleep restriction, relaxation techniques, and paradoxical intention. Young adults often experience sleep disturbances due to biological changes, academic pressure, and other factors. CBT-I pays the way for many strategies used to manage sleep patterns and stress. The main components are cognitive restructuring and sleep hygiene education. These interventions not only improve sleep quality and duration but also enhance overall mental health. Implementation of CBT-I can be delivered in various formats, each tailored to suit the individual needs and economic background. A few common methods include individual therapy, group therapy, online therapy, self-help books and manuals, digital apps and online programs, tele health, workshops, seminars, and integrated care models. Table -1 Represents the various randomized control trials in most common formats. CBT-I is considered the primary approach for treating insomnia.

Table 1: Represents the various randomized control trials in most common formats of CBT-I

S.No	Author	Study groups	Age in Years	Methods in divided population	Total Patients	Efficacy of CBT-I	Ref
1.	Yang CM et al.,	3	3 22.4 ± 2.5	Email delivery 31 Personalized feedback 31 Waitlist 30	92	Both Email Delivery and Feedback groups improved sleep metrics over Waitlist, with feedback group reporting higher satisfaction.	[7]
2.	Chan NY et al.,	3	20.0 ± 2.5	Email delivery: 45 Group based: 45 Waitlist: 45	135	Both Group based and Email delivery CBT-I effectively treated youth insomnia, but Group based CBT-I was superior in reducing maladaptive beliefs and mood symptoms.	[8]
3.	Horsch CHG et al.,	2	patients ≥ 18	Mobile app: 74 Waitlist: 77	153	This study showed a mobile app effectively treats mild insomnia, similar to web-based treatments, suggesting its potential use; future research should explore its broader applicability and integration into health regimens.	[9]
4.	Swift N et al.,	2	patients ≥ 18	Workshop: 75 Waitlist: 76	151	Large-scale CBT-I workshops significantly reduce insomnia symptoms in the general public, with improvements observed in the experimental group but not in the control group.	[10]
5.	Miller MB et al.,	2	18-30	Individualized face-to-face session of CBTI: 28 Individualized face-to-face session of Sleep hygiene: 28	56	CBT-I is more effective than Sleep hygiene in reducing insomnia symptoms among young adults who are actively drinking, suggesting that insomnia treatment may also improve other mental health outcomes in this population.	[11]
6.	Gehrman P et al.,	3	patients≥ 18	Telehealth: 20 In-person: 20 Waitlist: 20	60	There was no statistically significant difference between the in-person CBT-I group and the telehealth CBT-I group. It is another good option for CBT-I without loss in clinical gains.	[12]
7.	Dyrberg H et al.,	1	patients≥ 18	Individualized and group format CBT-I: 12	12	The study highlights barriers to CBT-I in depressed adults and suggests focusing on adherence, support, individual treatment, and initially prioritizing behavioral components.	[13]

Efficiency of Cognitive Behavioural Therapy - Insomnia

Efficacy measures the extent to which CBT-I effectively improves Quality of sleep and alleviates symptoms of SDs. Horsch CHG et al., (2017) reported that the app-based CBT-I outperformed the waitlist control group in several areas, demonstrating greater effectiveness in alleviating depressive and anxiety symptoms, enhancing sleep quality, and improving sleep-related diary outcomes. Although both groups experienced some reduction in dysfunctional beliefs about sleep, the app group achieved a slightly more pronounced effect. Additionally, the app group showed notable increases in total sleep time, shortened sleep onset latency, fewer awakenings, and overall improved sleep quality, consistently achieving better results than the waitlist group [7]. Workshop-based CBT-I by Swift N et al., (2012) discloses 17.6% reduction in Insomnia Severity Index (ISI) scores for participants in the experimental group, whereas the control group experienced a minor and statistically insignificant 3.5% decrease. After accounting for missing data and baseline depression, the intervention's effectiveness was sustained, showing a relative reduction of 8.1%. Sleep diary data further supported these results, demonstrating a 12% improvement in sleep efficiency (SE) and a significant reduction in wake time after sleep onset (WASO) for the experimental group, compared to a modest 2% SE improvement in the control group. Although the Beck Depression Inventory (BDI) did not show statistically significant changes, the intervention's positive impact on sleep outcomes in the experimental group was evident [8]. In comparison between individualized sessions of CBT-I and sleep hygiene Miller MB et al., (2021) CBT-I was found to be substantially more effective than SH practices in alleviating insomnia symptoms, with significant enhancements observed in sleep onset latency, wake after sleep onset, and total insomnia scores from baseline to post-treatment and follow-up. Participants undergoing CBT-I reported higher levels of satisfaction with their treatment. Although both groups exhibited a decline in alcohol use, the CBT-I cohort experienced a significant reduction in alcohol-related consequences, associated with better sleep quality. This study emphasizes CBT-I as a more effective method for treating insomnia and indirectly reducing alcohol-related problems compared to SH strategies. CBT-I's efficient across various studies, addressing multiple facets of its impact on sleep quality and related symptoms.

CBT-I for long term solutions

Reduction in Insomnia Symptoms by Horsch et al. (2017), participants using an app-based CBT-I intervention reported significant improvements in sleep quality, total sleep time, and sleep onset latency. The effectiveness of CBT-I was found to be greater than that of control groups or waitlist conditions, indicating that the structured cognitive and behavioral interventions provide measurable benefits over time [9]. CBT-I is its long-lasting effects compared to pharmacotherapy. While sedative medications may provide temporary relief, they often lead to dependency, tolerance, and withdrawal issues once discontinued. CBT-I is its long-lasting effects compared to pharmacotherapy [4]. While sedative medications may provide temporary relief, they often lead to dependency, tolerance, and withdrawal issues once discontinued. Study showed a 12% improvement in sleep efficiency, compared to only a 2% improvement in the control group. Gehrman et al. (2021) found that telehealth-based CBT-I was as effective as in-person treatment, offering a convenient alternative for individuals who may not have access to trained therapists locally [12]. Similarly, Chan et al. (2021) showed that group-based CBT-I sessions could effectively reduce insomnia symptoms and maladaptive beliefs, demonstrating that even non-individualized formats could yield significant benefits [8]. Miller et al. (2021) demonstrated that CBT-I was particularly beneficial in young adults with insomnia and concurrent alcohol use, leading to reductions in both insomnia symptoms and alcohol-related issues [11]. This highlights the adaptability of CBT-I to address sleep problems across various populations and cooccurring health concerns. While pharmacological treatments such as benzodiazepines and nonbenzodiazepine hypnotics provide immediate relief, they often come with risks of dependency, tolerance, and side effects. CBT-I has been shown to be equally or more effective in the long term.

Digital CBT-I

As technology advances, the healthcare system is gradually transitioning from in-person interventions to digital solutions, such as e-prescriptions. This shift has increased the popularity of cognitive behavioral therapy for insomnia (CBT-I) in digital formats through various applications, including Sleepio, Shuti, SleepRate, and CBT-I Coach. The primary advantages of these applications include their ease of access and personalized, tailored information provided through advanced algorithms, making CBT-I more widely available at little to no cost and benefiting people around the world. These apps are recognized for their animated videos, interactive scientific explanations, rich content, and graphical summaries based on user interfaces, which cater to diverse learning preferences. They mainly focus on sleep hygiene and cognitive therapy, offering guidance and support, while also fostering community engagement through user forums and progress tracking features. Furthermore, the integration of user feedback has been instrumental in refining app functionalities and enhancing user experience, making them more effective over time. However, some drawbacks include participants' lack of adherence and concerns about privacy, which are common issues. Addressing these challenges is crucial for maximizing the potential of digital CBT-I. Studies have reported positive outcomes from using these apps, with Kuhn et al.

(2016) highlighting the effectiveness of the CBT-I Coach app. Ultimately, as digital solutions continue to evolve, they have the potential to play a significant role in improving mental health on a global scale, providing accessible treatment options for individuals who may not have access to traditional therapies [14].

DISCUSSION

CBT-I is predominantly used in Western nations as a first-line treatment for insomnia, often preferred before pharmacotherapy. This approach helps mitigate the risk of addiction, overdose, severe respiratory depression, and other common side effects associated with sedatives and hypnotics most of which can be life-threatening [15]. Unlike drugs, CBT-I is a personalized personality development program specifically focused on insomnia which makes it the safest option for treating patients with chronic insomnia or other sleep disorders in youth. This therapy empowers patients to overcome their sleep-related challenges by fostering good sleep habits, teaching sleep hygiene, and imparting valuable techniques for improving sleep quality. To achieve optimal results, patients must adhere to the therapist's guidance and follow the prescribed plan consistently and CBT-I is not at all a cost-effective solution as it requires trained therapists who must be compensated for their services [16]. Fortunately, in the modern age, CBT-I can be delivered through various formats, as discussed in Table 1, including online platforms and telehealth [15], increasing its accessibility thought mobile apps. Despite these advancements, the implementation of CBT-I in developing nations remains limited due to a lack of awareness, accessibility, training, and patients time constraints. Addressing these barriers could lead to significant improvements in the quality of life for many individuals.

For an instance in Western nations, CBT-I is often available through outpatient clinics where patients participate in structured therapy sessions with licensed professionals. These sessions can be individual or group-based, providing personalized strategies for managing insomnia and telehealth platforms including emails, phone calls, online sessions, mobile apps, and workshops kind of new breakthrough have emerged as a viable alternative, allowing patients to receive CBT-I remotely, which is particularly beneficial for those living in rural or underserved areas. Implementing similar strategies in developing nations, supported by adequate training programs and awareness campaigns, could revolutionize the approach to insomnia treatment globally [17].

CONCLUSIONS

Addressing sleep disturbances in young adulthood is critical for enhancing overall health and well-being. The prevalence of sleep disorders among young adults is very high and driven by many factors which include academic pressure, psychological stress, and lifestyle changes. CBT-I stands out as an effective and nonpharmacological treatment option that mitigates the risks associated with sedative medications which are known to cause addiction and severe side effects. CBT-I teaches individuals to develop healthier sleep habits and improve their mental health by focusing on cognitive restructuring, sleep hygiene education, and tailored interventions. Although the therapy’s cost and the need for trained professionals pose challenges, modern CBT-I methods such as online platforms and telehealth are making them more accessible. The widespread implementation of CBT-I in developing nations remains limited due to barriers like lack of awareness, accessibility, training and high cost. Overcoming these obstacles through targeted awareness campaigns and training programs could significantly improve the quality of life for many young adults suffering from sleep disorders. We can foster a healthier and more productive society by prioritizing the sleep health in young adult and adopting effective treatment strategies like CBT-I to overcome their sleep disorder will have a significant impact on future society.

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REFERENCE

1. McArdle N, Ward SV, Bucks RS, et al.: The prevalence of common sleep disorders in young adults: a descriptive population-based study. Sleep. 2020, 43: 10.1093/sleep/zsaa072
2. Mullington JM, Haack M, Toth M, et al.: Cardiovascular, inflammatory, and metabolic consequences of sleep deprivation. Prog Cardiovasc Dis. 2009, 51:294-302. 10.1016/j.pcad.2008.10.003

3. Ohayon MM, Roberts RE, Zulley J, et al.: Prevalence and patterns of problematic sleep among older adolescents. J Am Acad Child Adolesc Psychiatry . 2000, 39:1549-56. 10.1097/00004583-200012000-00019
4. National Sleep Foundation . (2022). Accessed: National Sleep Foundation : https://www.thensf.org/.
5. Chapoutot M, Peter-Derex L, Bastuji H, et al.: Cognitive Behavioral Therapy and Acceptance and Commitment Therapy for the Discontinuation of Long-Term Benzodiazepine Use in Insomnia and Anxiety Disorders. Int J Environ Res Public Health. 2021, 18:10222. 10.3390/ijerph181910222
6. Sharma, M. P., & Andrade, C.: Behavioral interventions for insomnia: Theory and practice . Indian journal of psychiatry. 2012, 54:359-66. 10.4103/0019-5545.104825
7. Yang C-M, Lu Y-L, Lee H-C, et al.: Can adding personalized rule-based feedback improve the therapeutic effect of self-help digital cognitive behavioral therapy for insomnia in young adults?. Sleep Med . 2023, 107:36-45. 10.1016/j.sleep.2023.04.012
8. Chan NY, Lam SP, Zhang J, et al.: Efficacy of email-delivered versus face-to-face group cognitive behavioral therapy for insomnia in youths: A randomized controlled trial.. J Adolesc Health . 2022, 70:763-73. 10.1016/j.jadohealth.2021.11.005
9. Horsch CHG, Lancee J, Griffioen-Both F, et al.: Mobile phone-delivered cognitive behavioral therapy for insomnia: A randomized waitlist controlled trial. J Med Internet Res . 2017, 19: 10.2196/jmir.6524
10. Swift N, Stewart R, Andiappan M, et al.: The effectiveness of community day-long CBT-I workshops for participants with insomnia symptoms: a randomised controlled trial.. J Sleep Res . 2012, 21:270-80. 10.1111/j.1365-2869.2011.00940.x
11. Miller MB, Deroche CB, Freeman LK, et al.: Cognitive behavioral therapy for insomnia among young adults who are actively drinking: a randomized pilot trial.. Sleep. 2021, 44: 10.1093/sleep/zsaa171
12. Gehrman P, Gunter P, Findley J, et al.: Randomized noninferiority trial of telehealth delivery of cognitive behavioral treatment of insomnia compared to in-person care. J Clin Psychiatry . 2021, 82:10.4088/jcp.20m13723
13. Dyrberg H, Juel A, Kragh M, et al.: Experience of treatment and adherence to cognitive behavioral therapy for insomnia for patients with depression: An interview study. Behav Sleep Med . 2021, 19:481-91.10.1080/15402002.2020.1788033
14. ErtenUyumaz, B., Feijs, L., Hu, J.: A Review of Digital Cognitive Behavioral Therapy for Insomnia (CBT-I Apps): Are They Designed for Engagement?. Int J Environ Res Public Health. 2021, 18:2029. 10.3390/ijerph18062929
15. Edinoff AN, Nix CA, Hollier J, et al.: Benzodiazepines: Uses, dangers, and clinical considerations . Neurol Int . 2021, 13:594-607. 10.3390/neurolint13040059
16. Natsky AN, Vakulin A, Chai-Coetzer CL, et al.: Economic evaluation of cognitive behavioural therapy for insomnia (CBT-I) for improving health outcomes in adult populations: A systematic review. Sleep Med Rev . 2020, 54:101351. 10.1016/j.smrv.2020.101351
17. Lau Y, Htun TP, Wong SN, et al.: Therapist-supported internet-based cognitive behavior therapy for stress, anxiety, and depressive symptoms among postpartum women: A systematic review and meta-analysis. J Med Internet Res. 2017, 19:e138. 10.2196/jmir.6712