Efficacy of Dialectical Behavior Therapy in Women with Methamphetamine Addiction: A Literature Review

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RESUMEN

Introducción: la terapia dialéctica conductual, derivada de la ciencia cognitivo-conductual, se centra en el contexto, función y conciencia para reducir o evitar el malestar psicológico y físico mediante estrategias adaptativas. En la adicción a la metanfetamina, esta terapia destaca por su atención al *craving*, un factor que puede predisponer la recaída en mujeres con problemas de abuso de sustancias. **Objetivo:** analizar la evidencia empírica sobre la aplicación de la terapia dialéctica conductual en mujeres con adicción a las metanfetaminas en el período del 2012 a 2023. **Método:** se empleó el método T*he Preferred Reporting Items for Systematic Reviews* and *Meta-Analyses* (PRISMA) y las bases de datos consultadas incluyeron PubMed, EBSCO, OVID, SCOPUS, Wiley One *Library y* ScienceDirect. De 1,240 artículos identificados, dos cumplieron con los criterios para el análisis. **Resultados:** los artículos seleccionados examinaron a mujeres mayores de edad con estudios superiores al nivel de secundaria, de etnias blancas, desempleadas y solteras, que participaron tras un periodo de desintoxicación. Un estudio analizó específicamente la efectividad de la terapia dialéctica conductual en la adicción a la metanfetamina, mientras que el otro abordó múltiples sustancias, como alcohol, marihuana y medicamentos, además de la metanfetamina. **Discusión y conclusiones:** la terapia dialéctica conductual evidencia resultados prometedores en mujeres con adicción a metanfetaminas, lo que favorece el control del *craving*, la regulación emocional y el manejo de impulsos, con beneficios sostenidos durante al menos seis meses. Aunque la investigación es limitada, su aplicación en el tratamiento de adicciones ha obtenido un respaldo creciente en la literatura científica.

Palabras clave: mujeres, drogas, metanfetaminas, terapia dialéctica conductual, psicología.

ABSTRACT

Introduction: dialectical behavioral therapy, derived from cognitive-behavioral science, focuses on context, function, and awareness to reduce or avoid psychological and physical distress through adaptive strategies. In methamphetamine addiction, this therapy stands out for its focus on craving, a factor that can predispose women with substance abuse problems to relapse. **Objective:** to analyze empirical evidence on the application of dialectical behavioral therapy in women with methamphetamine addiction during the period from 2012 to 2023. **Method:** the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method was employed, and the databases consulted included PubMed, EBSCO, OVID, SCOPUS, Wiley Online Library, and ScienceDirect. Of the 1,240 articles identified, two met the criteria for analysis. **Results:** the selected articles examined adult women with an education beyond the secondary level, predominantly of white ethnicity, unemployed, and single, who participated after a detoxification period. One study specifically analyzed the effectiveness of dialectical behavioral therapy in methamphetamine addiction, while the other addressed multiple substances, including alcohol, marijuana, and medications, in addition to methamphetamine. **Discussion and conclusions:** dialectical behavioral therapy shows promising results in women with methamphetamine addiction, since it promotes craving control, emotional regulation, and impulse management, with benefits sustained for at least six months. Although research remains limited, its application in addiction treatment has gained increased support in the scientific literature.

Keywords: women, drugs, methamphetamine, dialectical behavioral therapy, psychology.

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INTRODUCTION

Dialectical Behavior Therapy (DBT), derived from cognitive-behavioral science, emphasizes context, function, and awareness, addressing individuals' difficulties in regulating their emotions, which can lead to impulsive behaviors and chaotic interpersonal and intrapersonal states. This therapy aims to mitigate or avoid psychological and physical distress through adaptive strategies, such as mindfulness to reduce emotional reactivity, distress tolerance to cope with stressful situations, emotional regulation to manage intense emotions, and interpersonal effectiveness to improve communication and relationships (Albarrán et al., 2021; De la Vega & Sánchez, 2013; Guasco-Pérez, 2020; McKay et al., 2019).

In the context of psychoactive substance use, including alcohol, cocaine, methamphetamines, and other drugs, DBT has demonstrated positive outcomes by training individuals in emotional regulation skills, reducing dependence on psychoactive substances, modifying behaviors, and fostering actions that enable them to build meaningful lives (Gempeler, 2008; Grigg et al., 2018; Ritschel et al., 2015). Alcohol and drug use is a multifactorial phenomenon that continues to rise, with determinants varying based on the user's characteristics (National Institute on Drug Abuse [NIDA], 2020a).

In this regard, sex as a biological and physical characteristic plays a crucial role in understanding and addressing substance use, particularly among women, who face greater vulnerability due to a combination of biological, psychological, and social factors. Biological risk factors include lower body weight, decreased body water volume, and variations in substance metabolism. These can amplify pharmacological effects, facilitate the development of dependence, and increase susceptibility to significant organ damage (NIDA, 2020a; Sistema de Vigilancia Epidemiológica de las Adicciones [SISVEA], 2020; Slade et al., 2016).

Furthermore, distinct psychological and social factors contribute to the issue, such as the intensified social stigma linked to substance use, substantial obstacles in accessing specialized treatment services, and a greater likelihood of experiencing gender-based violence, frequently worsened by substance consumption. These dynamics not only worsen the consequences of consumption but also reveal deep inequities that require gender-sensitive research and treatment approaches. Highlighting these differences is essential to developing more effective and equitable interventions that address the specific needs of women who use substances (Addiction Center, 2024; NIDA, 2020c).

Worldwide, the use of psychoactive substances led to nearly 3 million deaths in 2018, with women accounting for 2.6% of these fatalities (World Health Organization [WHO], 2024). Between 2011 and 2022, over 23% of the population aged 15 to 64 reported using drugs in the past 12 months. While women constitute a smaller proportion of global substance users, their rates of consumption and the development of associated disorders have increased at a faster pace compared to men (United Nations Office on Drugs and Crime [UNODC], 2023).

Notably, women represent over 40% of global users of amphetamines, pharmaceutical opioids, sedatives, and tranquilizers. Methamphetamine ranks as the second most widely used drug, impacting 36 million individuals (.7% of the global population), of whom more than 40% are women. Due to physical, hormonal, and emotional factors, women are more prone to craving, relapse, and consumption motivated by reasons such as weight loss or increased energy (Baracz & Cornish, 2016; NIDA, 2020c; Potvin et al., 2018; UNODC, 2023).

In Mexico, according to the National Survey on Drug, Alcohol, and Tobacco Consumption (Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz [INPRFM], Instituto Nacional de Salud Pública [INSP], Comisión Nacional Contra las Adicciones [CONASAMA] and Secretaría de Salud [SSA], 2017), methamphetamine use shows a lifetime prevalence of 2% (2.3% men and 1.7% women), past-year prevalence of 1.3% (1.5% men and 1.1% women), and past-month prevalence of .7% (.9% men and .6% women). These figures underscore the importance of addressing methamphetamine use, particularly among women, due to their heightened vulnerability to dependence and adverse effects.

Although women in Mexico exhibit lower methamphetamine use prevalence compared to men, they face specific risks and barriers that amplify their vulnerability. Despite having lower consumption rates, they are more likely to develop dependence quickly, experience frequent relapses, and suffer significant social and psychological consequences.

Factors such as stigma, limited access to treatment services, and adherence challenges exacerbate this situation. This highlights the need to explore the determinants influencing methamphetamine use among women and the inequalities in their access to effective treatments (Degenhardt et al., 2016; Dehghani & Khodabakhshi-Koolaee, 2017; Haghani & Khodabakhshi-Koolaee, 2022).

When a woman seeks treatment, her decision to continue and her adherence are shaped by various circumstances, including the type of care she receives, which can range from outpatient to residential services. These factors generate varying levels of stress, exacerbated by personal issues such as conflicts with partners, family, or children, work difficulties, illnesses, or the loss of loved ones. These stressors may lead women to turn to substance use as a coping mechanism, perpetuating a cycle of use-abstinence-stress-use (Dehghani & Khodabakhshi-Koolaee, 2017; Gold et al., 2020; Haghani & Khodabakhshi-Koolaee, 2022; NIDA, 2019a; NIDA, 2020b; Valentino & Aston-Jones, 2010; Villarreal-Mata et al., 2020).

Treatment specifically tailored for women who use methamphetamines focuses on reducing or eliminating consumption. In this regard, Dialectical Behavior Therapy equips them with the knowledge to understand themselves and their emotional experiences by enhancing their capacity to regulate emotions. The therapist accepts the patient as she is, and the woman learns to accept herself, building a healthy internal and external environment while recognizing that identity is relational and reality is constantly changing, meaning that truth exists and can evolve. This therapy is conducted on an outpatient basis, with an average treatment projection of one year, which may include individual sessions, group skills training, and telephone coaching (Chapman & Owens, 2020; De la Vega & Sánchez, 2013; McKay et al., 2019; Narimani et al., 2015; Salsman, 2022; Ward-Ciesielski et al., 2020).

Dialectical Behavior Therapy aims to guide individuals toward a state of "clear mind," characterized by clarity, mindfulness, and freedom from addiction. This state is associated with self-control, open-mindedness, adaptability, and effective stress management, reflected in balanced brain activity in areas responsible for decision-making and emotional regulation (Dimeff & Linehan, 2008; Linehan, 2015; Oliani et al., 2021). Conversely, the "addictive mind" involves dependence and loss of control, marked by compulsion, anxiety, and persistent substance-seeking despite negative consequences. DBT provides tools to address emotional triggers and promote sustainable behavioral changes (Dimeff & Linehan, 2008; Linehan, 2015; Oliani et al., 2021).

According to Linehan et al. (2002), there are seven skills that can help to avoid addictive behaviors.

These include: (1) dialectical abstinence, which combines abstinence and harm reduction; (2) clear mind, which balances the addictive mind and a state of mindfulness; (3) community reinforcement, which adjusts the environment to support abstinence; (4) burning bridges, which involves cutting ties with relationships that facilitate use; (5) building new bridges, which fosters healthy environments; (6) alternative rebellion, which channels rebelliousness in less destructive ways; and (7) adaptive denial, which reinforces thoughts that promote abstinence. (Figure 1).

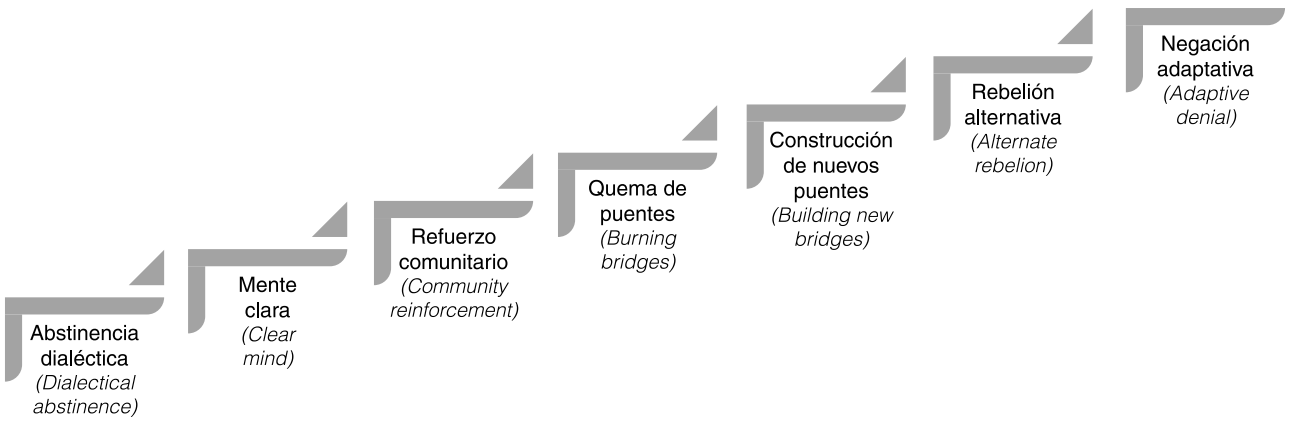
Dialectical Behavior Therapy (DBT) is particularly relevant in the treatment of substance addiction in women, as it addresses specific physiological and psychological factors that perpetuate dependency.

In the case of methamphetamine, differences in body size, structure, and hormonal cycles can increase the drug's concentration in the brain, prolonging its physical, emotional, and psychological effects (Linehan, 1993a; Linehan, 1993b; NIDA, 2019b; UNODC, 2023).

Methamphetamine use produces immediate effects such as increased wakefulness, physical activity, and accelerated vital functions, but also in-

Figure 1

Seven skills that help individuals avoid engaging in addictive behaviors, according to Linehan (2015).



duces long-term brain dysfunction with severe consequences, including weight loss, dental problems, and psychological disorders like paranoia and hallucinations. Additionally, methamphetamine use increases the likelihood of high-risk sexual behaviors in women, exposing them to infections such as human immunodeficiency virus (HIV) and hepatitis B and C (NIDA, 2019b). DBT has proven effective in treating this addiction by focusing on redirecting negative thoughts and modifying emotional contexts, helping to reduce dependency and improve overall well-being (Basereh et al., 2022; Moghadam et al., 2021; Rodríguez-Cano et al., 2016; Sahranavard & Miri, 2018; Stotts & Northrup, 2015).

DBT is particularly effective in methamphetamine addiction due to its emphasis on managing cravings, a critical factor that predisposes individuals to relapse. However, authors agree on the need to continue studying this behavioral approach to propose or implement different types of interventions aimed at achieving the rehabilitation of women with substance abuse problems (Balandeh et al., 2021; Esmaeili et al., 2017; George, 2015; NIDA, 2020b; Pubill, 2018; Sahranavard & Miri, 2018; Zargar et al., 2019).

Consequently, a literature review was conducted to evaluate the effectiveness of DBT applied to women with methamphetamine addiction.

METHOD

Design

This literature review was conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework, which provided a structured process for the collection, selection, and evaluation of relevant studies on the application of Dialectical Behavior Therapy (DBT) for women with methamphetamine addiction.

Procedure

The research question guiding this review was formulated using the PICO method (Patient, Intervention, Comparison, and Outcome): What is the effectiveness of Dialectical Behavior Therapy in women with methamphetamine addiction? Based on this question, inclusion and exclusion criteria were established following the guidelines of the Cochrane Handbook (Higgins et al., 2024) and in alignment with best practices for conducting literature reviews (Armendáriz et al., 2015).

The inclusion criteria for studies were as follows: (1) Original research articles published between 2012 and 2023; (2) Studies published in peer-reviewed journals; (3) Articles available in Spanish, English, or Portuguese; (4) Case-control studies; (5) Studies reporting methamphetamine use; (6) Adult women aged 18 to 90 years; (7) Studies involving treatment with Dialectical Behavior Therapy. Only studies that met all inclusion criteria and reported a relationship between DBT and methamphetamine addiction treatment in women were selected. Exclusion criteria included qualitative studies, systematic reviews, meta-analyses, evidence-based guidelines, literature reviews, non-human studies, expert opinions, and commentary articles.

The literature search process was documented in Table 1, which presents the keywords derived from the Health Sciences Descriptors (*DeCS*) and Medical Subject Headings (*MeSH*) terms. These keywords were combined using Boolean operators (AND, OR, NOT) to maintain a structured and systematic search across six major health and psychology-related academic databases: PubMed, EBSCO, OVID, SCOPUS, Wiley Online Library, and ScienceDirect.

The search strategy was initially tested in PubMed to evaluate its effectiveness and make any necessary adjustments. Once validated, it was replicated across the other selected databases. As detailed

Table 1
Search Strategy.

Población/ Population/ População	*Intervención/ Intervention/ Intervenção*	*Resultados/ Results/ Resultados*
DeCS		
Mujeres No niños No adolescentes	Terapia Conductual Dialéctica	Metanfetamina
MeSH		
Women NOT children NOT adolescent	Dialectical Behavior Therapy	Methamphetamine
Descrição em português		
Mulheres No criança No adolescente	Terapia do Comportamento Dialético	Metanfetamina

Note: DeCS = Descriptores de Ciencias de la Salud, *MeSH* = Medical Subject Headings.

in Table 2, keywords derived from *DeCS* and *MeSH* were used to refine and implement the search strategy through a pilot test.

The flowchart illustrating the study selection process is presented in Figure 2. From the initial search, 1,240 potentially eligible studies were identified. After removing 560 duplicate records, a total of

Table 2
Piloting in PubMed.

(("women"[All Fields]) NOT ("adolescent"[All Fields])) NOT ("children"[All Fields])	AND	("dialectical behavior therapy"[All Fields]) OR ("dialectical behavior therapy dbt"[All Fields])
	AND	((methamphetamine)OR ("methamphetamine hydrochloride"[All Fields])) OR ("methylamphetamine"[All Fields])

680 articles underwent title and abstract screening, applying the previously established inclusion and exclusion criteria. To ensure methodological rigor and minimize bias, three independent reviewers conducted this evaluation. As a result, 614 studies were excluded, leaving 66 articles for full-text review.

Subsequently, 64 studies were excluded for the following reasons: Lack of relevance to the review topic (n = 28),discrepancy in the study population (n = 11), non-compliance with the methodological design defined in the inclusion criteria (n = 15), qualitative studies or literature reviews (n = 10), ultimately, two studies were included in the final analysis.

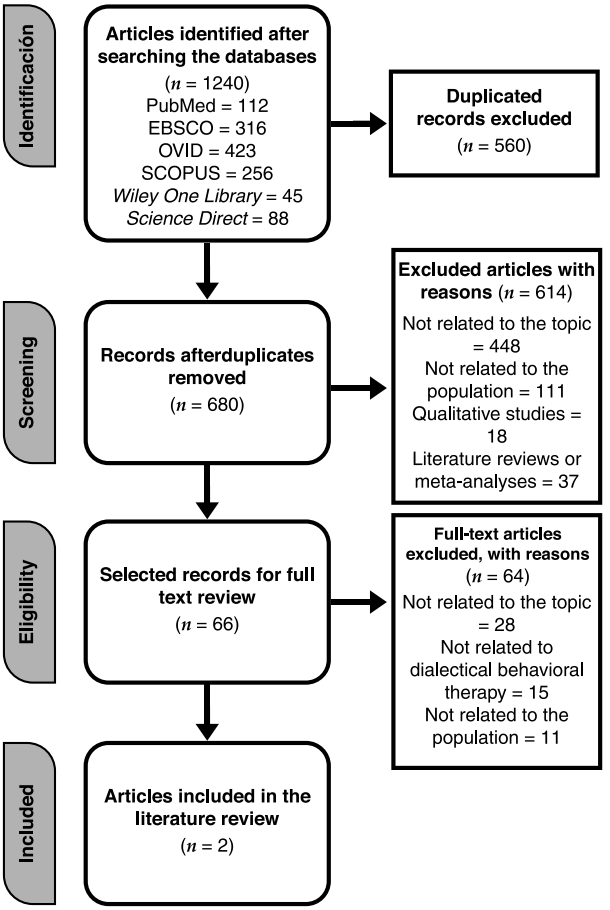
The risk of bias was assessed following the Cochrane Handbook guidelines (Higgins et al., 2024), considering factors such as selection bias, performance bias, detection bias, and reporting bias. This approach ensured that only high-quality studies were included in the review.

RESULTS

The characteristics of the selected studies are summarized in Table 3. Both articles analyzed women in case-control groups, focusing on adult participants with education beyond secondary level, white ethnicity, unemployment, and single marital status.

Participants joined the studies after completing a detoxification period. Only one study directly assessed the effectiveness of Dialectical Behavior Therapy (DBT) for methamphetamine addiction in women (Nadimi, 2016). The other study examined multiple substances, including alcohol, marijuana,

Figure 2
PRISMA flow diagram.



and other drugs or medications, in addition to methamphetamine (Nyamathi et al., 2017).

Both studies were conducted in residential treatment settings and provided detailed descriptions of DBT intervention phases, offering evidence of its effectiveness in achieving abstinence. One study (Nyamathi et al., 2017) analyzed variables such as social support, women's risk factors, mental health index, emotional well-being, emotion regulation strategies, depression, anxiety, and perceived readiness for treatment. Additionally, it included an educational component on common chronic diseases among women as part of the intervention.

The other study (Nadimi, 2016) focused on DBT intervention while also measuring impulsivity and emotional regulation. However, it did not implement any intervention in the control group and excluded participants taking anxiolytic medications or those diagnosed with severe psychotic, bipolar, or depressive disorders. Both studies reported follow-ups at six and nine months, showing that participants in

Table 3
Relevant information from studies included in this literature review.

Author, year, location	*Population*	*Design and methods*	*Empyrical Indicators*	*Intervention*	*Results*	*Follow-up*
Nyamathi et al., 2017, Los Angeles, United States	130 women on parole	Randomized, controlled controlled trial, logistic regression model	Lifestyle Criminality Screening Form (LCSF) by Walters, White & Denney (1991) Medical Outcomes Study Social Support Survey (MOS-SSS) by Sherbourne & Stewart (1991)	DBT-MC Program: Six group sessions and six individual sessions, each lasting 45 to 60 minutes.	There was no evidence of differences in sociodemographic characteristics.	At the six-month follow-up, 65.5% of DBT-CM participants and 48.3% of HP participants abstained from drug use.
	19 to 64 yearsold	Split into:	Women's Risk Needs Assessment (WRNA) by Wright et al. (2008)	HP Program: Six group sessions and six individual sessions.	Attendance was 89% for DBT-MC participants and 84% for HP participants.	The DBT-CM program remained a positive predictor of drug use abstinence at six months.
		DBT-MCGroup (n = 65)	Mental Health Index (MHI) by Stewart et al. (1988)		The DBT-MC treatment showed a greater effect on drug use abstinence (p < .05), alcohol use (p < .05), and substance use (p < .05) compared to the HP program.	
		HPGroup (n = 65)	Client Evaluation of Self and Treatment (CEST) by Joe et al. (2002)			
			Center for Epidemiological Studies Depression Scale (CESD) by Andresen et al. (1994)			
			Emotional Regulation and Coping Scale by Gratz & Roemer (2004)		Additionally, the DBT-MC program predicted abstinence at the six-month follow-up (p = .01).	
			Texas Christian University Drug History Form II (TCU) by Texas Christian University (2007)			
Nadimi, 2016, Birjand, Irán	34 women in treatment for methamphetamine addiction	Quasi-experimental, randomized sampling	Barrett Impulsiveness Scale	Experimental group: 12 group sessions of dialectical behavior therapy, each lasting 90 minutes. Control group: No intervention.	There were significant differences in impulsivity and increased emotional regulation in the experimental group (p < .001) after the intervention.	The experimental group was followed up for 9 months, showing sustained effects of the intervention.
	18 to 42 yearsold	Experimental group (n = 17) Control group (n = 17)	Difficulties in Emotion Regulation Scale (DERS)			

Note: DBT-MC = dialectical behavioral therapy-modified corrections, HP = health promotion program, n = sample, p = statistical significance.

the experimental groups maintained abstinence and demonstrated better control over drug cravings (Nadimi, 2016; Nyamathi et al., 2017).

DISCUSSION AND CONCLUSIONS

This literature review provides evidence that DBT has been used in women undergoing treatment for methamphetamine use, influencing not only behavioral changes related to consumption and abstinence but also contributing to long-term effects. Findings suggest that after six to nine months of follow-up, participants maintained abstinence, emotional regulation, and impulse control, effectively managing drug cravings.

One key aspect is the sociodemographic similarity of participants across studies. However, it is important to note that the studies were conducted in culturally distinct regions, with one taking place in the West and the other in the East. Additionally, factors such as marital status, legal issues, and unem-

ployment may be linked to methamphetamine use, as the drug's highly addictive chemical composition leads to chronic consumption and dependence. This often results in social vulnerability and segregation, causing users to lose their support networks, drop out of school, or become unemployed (Baracz & Cornish, 2016; Nadimi, 2016; Nyamathi et al., 2017; Potvin et al., 2018).

Regarding DBT interventions, Nyamathi et al. (2017) implemented a behavioral training program aimed at reducing or eliminating substance use by promoting self-awareness, managing impulses, denial, and alternative rebellion, and encouraging individuals to build meaningful lives. Their intervention incorporated mindfulness practices, therapist-assigned tasks recorded in a journal, and structured group and individual progress assessments, ensuring an organized treatment plan with clear objectives, analysis, and solutions.

Similarly, Nadimi (2016) applied 12 DBT sessions focused on emotional self-awareness, decision-making, acceptance, distraction from self-harming behaviors, identification of internal dialogue, emotional awareness, harm reduction skills, personal values, positive experiences, coping competencies, and control over negative emotions. The similarity between both interventions suggests that their shared objective was to replace maladaptive coping strategies—such as methamphetamine use—with positive coping mechanisms, including strengthening social support networks and avoiding risky behaviors.

The findings from these studies reinforce the effectiveness of DBT in helping individuals recognize triggers and avoid risky behaviors, not only to achieve abstinence but also to break the relapse cycle of use-abstinence-stressors-relapse (Linehan, 2015; Moghadam et al., 2021; Stotts & Northrup, 2015; Villarreal-Mata et al., 2020). Another key takeaway from this review is that DBT has a significant impact on cravings, anxiety, and substance-related impulses, as it enables individuals to identify physical, mental, and emotional cues that may lead to substance use (Nadimi, 2016; Narimani et al., 2015).

Additionally, the studies by Nadimi (2016), Nyamathi et al. (2017), and Sahranavard & Miri (2018) highlight depression as a common factor among substance users, reinforcing the idea that many individuals turn to drugs as a coping mechanism for psycho-emotional distress. However, substance use triggers central nervous system reactions, which although initially stimulating ultimately result in mood disturbances due to neurological dysregulation, guilt, or difficulties in obtaining the drug again.

The studies conducted by Nadimi (2016) and Nyamathi et al. (2017) indicate that DBT interventions were implemented in residential treatment settings. While both studies reported the effectiveness of DBT, it is important to note that they took place in controlled environments, where patients remained in designated areas under continuous supervision by a multidisciplinary team. This setting allowed for strict control over external stimuli that could trigger anxiety or increase drug cravings, which significantly influenced the intervention outcomes. These findings highlight the need to explore alternative treatment settings to expand DBT's applicability.

In addition to the above, Nadimi provides evidence that the use of Dialectical Behavior Therapy (DBT) is effective after the detoxification period.

The sessions were conducted in group settings and were divided into seven phases: (1) the need to learn self-awareness skills; (2) the teaching of self-knowledge and emotional self-awareness skills; (3) how to calm themselves, make decisions with a clear mind through the acceptance of judgments and labels; (4) how to redirect attention away from self-harming behaviors by engaging in various pleasurable activities that shift focus to non-harmful topics; (5) how to pay attention to the wise mind, emotional mind, and logical mind regarding emotional interpretations and responses, observe them, and describe them through self-observation exercises; (6) how to live in the present moment, use self-encouraging coping thoughts, understand the role of positive internal dialogue, and apply problem-solving skills through emotional regulation; and (7) the teaching of harm reduction skills, such as sleep planning, exercise, proper nutrition, drug use reduction, and productive time management (Nadimi, 2016).

These elements demonstrated how DBT equips women with tools for impulse control and emotional regulation, helping them not only manage negative emotional states but also adopt healthier coping mechanisms to prevent relapse. The findings reinforce the relevance of continued research into addiction from the perspective of third-wave behavioral therapies.

In the study by Nyamathi et al. (2017), the intervention included six group sessions lasting forty-five minutes each, conducted over six months, alongside individual therapy sessions. The sessions introduced participants to the goals of DBT and helped them identify positive coping strategies. They focused on increasing awareness of impulses, recognizing triggers, emotions, and reactions through structured journaling, and practicing self-observation without

judgment. The intervention also addressed adaptive denial, distress tolerance, and common coping mechanisms such as controlled relaxation. Another key aspect was helping participants break ties with individuals or environments that facilitated substance use while reinforcing personal values and emotional regulation skills. The study encouraged participants to visualize a meaningful future by creating vision boards that depicted their desired lifestyles, which they later presented to the group. The final sessions focused on eliminating substance use cues, developing interpersonal effectiveness, and understanding factors that influence interpersonal and intrapersonal relationships.

Both studies structured DBT interventions in progressive phases. At the end of the group sessions, participants were encouraged to complete their journals, review personal notes, organize treatment goals, and analyze potential solutions to reinforce the skills learned during therapy.

Regarding follow-up, the studies reviewed did not specify whether it was conducted on an outpatient basis or if participants remained in residential treatment. However, it is important to acknowledge that residential treatment programs typically last between three and six months, after which individuals transition to outpatient care. This phase includes ongoing monitoring, self-help groups, and community support services designed to reinforce social support networks and reduce the risk of relapse (De Andrés, 2017; Nadimi, 2016; Nizama-Valladolid et al., 2019; Nyamathi et al., 2017).

A critical aspect of DBT interventions is their emphasis on reinforcing positive behaviors to promote treatment adherence and long-term abstinence.

Relapse is often influenced by a complex interaction between individual and treatment-related factors, where the type of intervention can determine how different factors impact each person's recovery (De Andrés, 2017; Dehghani & Khodabakhshi-Koolaee, 2017; Nadimi, 2016; Nizama-Valladolid et al., 2019; Nyamathi et al., 2017).

The adaptation of DBT for methamphetamine addiction is a relatively new approach. It is important to note that the scientific literature reviewed so far aligns with the gold standard of cognitive-behavioral therapy interventions for addressing alcohol, drug, and psychoactive substance use disorders (Fitri & Widyastuti, 2021). While there has been a growing interest in studying DBT within the scientific community, existing evidence suggests that both therapeutic approaches can serve as effective treatment options (Sahranavard & Miri, 2018). However, most of the reviewed authors emphasize the need for further DBT-based interventions to deepen the understanding of factors, triggers, and mechanisms that contribute to behavioral change, as well as the emotional and impulse regulation processes that influence substance use behavior (Balandeh et al., 2021; Esmaeili et al., 2017; George, 2015; Moghadam et al., 2021; Pubill, 2018; Stotts & Northrup, 2015; Zargar et al., 2019).

In conclusion, the principles of acceptance and change that form the foundation of DBT which aim to manage intense emotions, enhance interpersonal skills, and reduce self-destructive behaviors contribute to significant treatment outcomes for women struggling with methamphetamine use. The therapy facilitates impulse and emotional regulation, and this behavioral improvement is sustained for at least six months following the intervention.

Additionally, scientific literature indicates that most studies on methamphetamine use have focused on male populations, as men are more likely to seek treatment and receive stronger support from their social networks, including mothers, sisters, and partners. This research gap highlights the urgent need for future studies to examine the factors and variables influencing psychoactive substance use in women, as well as their access to and adherence to treatment. Expanding knowledge in this area is essential for developing more equitable and effective intervention strategies.

There is substantial evidence supporting DBT's effectiveness in treating borderline personality disorder, self-harm, and eating disorders. The therapy has begun to yield positive results in the addiction treatment context, and it is recommended that its application be expanded beyond residential settings to include outpatient treatment programs (Bedics, 2020; McKay et al., 2019).

The study of addictions is a rapidly evolving and dynamic field, with new psychoactive substances continually emerging. Therefore, it is necessary to implement therapies that evolve alongside these developments and to continue researching substance use among women.

Limitations of the Study

It is important to acknowledge that no studies conducted in Mexico or Latin America were found that examine the use of DBT for psychoactive substance use in women. Future research should address this critical gap to enhance the understanding and application of DBT in these populations.

FUNDING

No funding was received in order to conduct this research.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

AUTHORS CONTRIBUTION

Julia Lizeth Villarreal-Mata: conception and design of the analysis, data collection, provision of data or analysis tools, conducting the analysis and writing the article.
William Alves De Oliveira: conception and design of the analysis, provision of data or analysis tools.
Annel González Vázquez: conducting the analysis.
Aurelio Martínez Banck: provision of data or analysis tools.

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