EFFECT OF MINDFULNESS MEDITATION AS SELF-REGULATION IN PATIENTS WITH BORDERLINE PERSONALITY DISORDER

# ABSTRACT

Borderline Personality Disorder (BPD) is a complex diagnosis in which the patient presents important symptoms related to impulsivity, mood swings and emotional instability, leading to psychological distress and significant interpersonal conflicts. Although the diagnostic criteria have existed for some time and are discussed in the literature, its treatment and symptoms still require revisions and literary development to assist in the clinical improvement of these patients. Among the possible therapeutic approaches, the benefits of Mindfulness for self-regulation of patients with BPD have been studied with greater frequently, being one of the skills employed in Dialectical Behavioral Therapy (DBT) and its objective is full attention (concentration in the present moment, intentionally and without judgments). For this reason, the objective of the study is to conduct an integrative literature review to analyze the relationship between mindfulness, specifically mindfulness-based interventions, and BPD. The search was conducted by evaluating studies found in the PubMed and BVS (SciELO and Lilacs, Psychinfo) databases, with 26 articles included in this review. Thus, the study helps to clarify the therapeutic benefits of Mindfulness for patients with BPD and offers the possibility of theoretical reflection on the literature presented on the subject.

**Keywords:** Borderline Personality Disorder (BPD); Mindfulness; Therapeutic Intervention; Integrative review.

# INTRODUCTION

Borderline Personality Disorder (BPD) is defined by the DSM-V as a pervasive pattern of instability in interpersonal relationships, self-image, and affects and, not least, a dysfunction in emotional regulation. These symptoms emerge in early adulthood, with a prevalence ranging from 0.7% to 5.9% of the general population. These behavioral tendencies are associated with various risk behaviors, especially in stressful situations, justifying a possible interrelationship between this condition and dysfunctions in emotional regulation mechanisms.

Additionally, the intense fear of rejection and abandonment—whether in real or imagined situations—also reported as a striking experience in individuals with BPD, determines a pattern of mood reactivity, which may manifest through irritability, anxiety, or even inappropriate anger, with physical altercations not being uncommon. These behavioral tendencies often result in greater vulnerability to risky situations such as substance abuse, reckless driving, inappropriate spending, and self-harm (APA, 2014; KRAUSE-UTZ et al., 2019; PENG et al., 2020; MELO et al., 2021).

This recurring pattern of significant instability in interpersonal relationships, self-image, emotions, and impulsivity, which begins in early adulthood and is present in various contexts, may present as (DSM-V):

1. Frantic efforts to avoid real or imagined abandonment.
2. A pattern of unstable and intense interpersonal relationships.
3. Identity disturbance: markedly and persistently unstable self-image or sense of self.
4. Impulsivity in at least two areas that are potentially self-damaging (e.g., spending, sex, substance abuse, reckless driving, binge eating).
5. Recurrent suicidal behavior, gestures, or threats, or self-mutilating behavior.
6. Affective instability due to a marked reactivity of mood (e.g., intense episodic dysphoria, irritability, or anxiety usually lasting a few hours and only rarely more than a few days).
7. Chronic feelings of emptiness.
8. Inappropriate, intense anger or difficulty controlling anger (e.g., frequent displays of temper, constant anger, recurrent physical fights).
9. Transient, stress-related paranoid ideation or severe dissociative symptoms.

Despite the growing volume of research on BPD, the full understanding of its psychopathology and all risk factors involved remains incomplete. Studies aiming to deepen the understanding of neurological and physiological mechanisms have examined the hypothesis of a prefrontal cortex lesion (Blair & Cipolott, 2000). According to this hypothesis, individuals with BPD showed poorer performance in tasks designed to evaluate prefrontal function (Völlm et al., 2004). Volumetric studies using imaging techniques have found smaller frontal lobes in people with BPD (Lyoo, Han & Cho, 1998). Imaging exams have identified abnormalities in limbic structures involved in emotional regulation, such as smaller volumes of the amygdala-hippocampal complex (Tebartz van Elst et al., 2003). These volumetric reductions, especially in the hippocampus, have been associated with the excessive stress experienced by patients with BPD (Schmahl, Vermetten, Elzinga & Brenner, 2003). Since the hippocampus and amygdala are involved in processing and responding to emotional stimuli (Anderson & Phelps, 2000; Nolte, 1993), the result of such volumetric reductions may be linked to difficulty in emotional regulation. Other neurophysiological systems related to processes involving emotional regulation, impulsivity, and aggressive behavior have also been studied, such as serotonin dysfunction (Coccaro & Siever, 2000; Paris et al., 2004), and BPD may be associated with a hyperresponsiveness of the hypothalamic-pituitary-adrenal (HPA) axis (Rinne et al., 2002)—a system related to stress response, anxiety, and emotional reactivity. However, these findings do not provide consistent evidence of dysfunction in the systems involved in the regulation of emotional reactivity in BPD.

It is known that there is a strong correlation between traumatic childhood experiences and the development of the disorder (Weaver & Clum, 1993; Freire et al., 2023), especially past sexual abuse and family dysfunction. Adverse events such as abandonment or fear of abandonment, or a lack of significant emotional bonding with a caregiver, are observed in patients with BPD (Benjamin, 1996; Gunderson, 1996).

Linehan, an American psychologist, presents in her extensive work the “Biosocial Theory” (1993), which posits that individuals have biological predispositions to greater or lesser emotional instability, and that the environment in which the individual is raised plays a challenging role in the development of psychiatric disorders.

Linehan describes three characteristics contributing to a person’s vulnerability, defined as biological predispositions: 1°) A tendency toward emotional dysregulation and immediate reactivity, with high sensitivity to emotional stimuli; 2°) Intense feelings and emotional expressions, where the intensity also disrupts cognitive processes; 3°) Difficulty in returning to a baseline state. According to Linehan's Biosocial Theory (1993), emotional dysregulation—understood as emotional vulnerability coupled with the inability to regulate emotions—results from a biological predisposition and the individual-environment interaction. Thus, problems tend to emerge when a biologically vulnerable person grows up in an invalidating environment (RODRIGUES, 2017).

The American psychologist also discusses Attachment Theory, developed by British psychologist and psychiatrist John Bowlby, to better understand the emotional difficulties of individuals with BPD. According to her view, patients who exhibit disorganized or insecure attachment patterns become more vulnerable to stress and face interpersonal difficulties in adulthood, resulting in fear of abandonment and an intense need for validation. Bowlby argues that attachment is a type of bond in which an individual’s sense of security is closely linked to the attachment figure. The safety and comfort experienced in their presence allows this figure to serve as a “secure base” from which the individual can explore the world. The author distinguished two types of factors that may influence the activation of the attachment behavior system: those related to the child’s physical and temperamental conditions, and those related to environmental conditions.

Later, types of attachment were described by Mary Ainsworth, an American psychologist, based on the ideas proposed by J. Bowlby, and classified as follows:

1. Secure attachment: Built on trust in a secure base between the child and caregiver, facilitating development. In these cases, the child cries when the caregiver leaves but is easily soothed upon their return.
2. Insecure-avoidant attachment: Marked by minimization of emotional needs, as the child perceives the caregiver as inconsistently available, leading to indifference—little reaction to the caregiver’s departure or return.
3. Insecure-ambivalent/anxious attachment: Characterized by anxiety and insecurity due to inconsistent caregiver availability. The child is distressed when the caregiver leaves, and their return does not easily calm or comfort the child, often resulting in anger.
4. Disorganized attachment: In this case, the child does not develop a clear bonding strategy, as the caregiver is both a source of comfort and fear. Consequently, the child displays confused and contradictory behaviors.

The interrelationship between early adversity, insecure attachment, and failures in mentalization (the capacity to understand and interpret one's own mental states), deeply rooted in attachment theory, plays a significant role in psychological development (Fonagy, 2016). Fonagy and Luyten’s proposal distinguishes between distal and proximal causes of BPD symptoms, suggesting that adverse experiences can disrupt the attachment system, hindering the differentiation between self and others and impairing mentalization. Secure attachment, on the other hand, facilitates emotional development and the formation of healthy relationships (Rivacy, 2023).

Emotional regulation is a central aspect for both understanding and treating BPD. According to Linehan’s biosocial theory, BPD is characterized by difficulties in adaptively managing intense emotions, which aligns with the mentalization deficits described by Fonagy and Luyten. Insecure attachment and adverse childhood experiences exacerbate this difficulty, making emotional regulation a critical target for therapeutic interventions (Mehlum, 2021).

Borderline Personality Disorder presents a range of therapeutic possibilities. Among the non-pharmacological interventions, mindfulness meditation (MM) stands out. MM refers to the process that leads to a mental state characterized by awareness of the present moment, without judgment, including sensations, thoughts, bodily states, and attention to the surrounding environment, while fostering openness, curiosity, and acceptance (Bishop et al., 2004; Kabat-Zinn, 2003). Mindfulness is commonly defined as the awareness that arises from paying attention to the present moment, non-reactively and non-judgmentally (Kabat-Zinn, 1990). The terms \*meditation\* and \*mindfulness\*

are often confused. Meditation is the practice of self-regulating the body and mind through techniques involving a specific focus of attention (Cohn & Polish, 2006). In MM, the practice involves paying attention to the present-moment experience (mindful awareness).There is a growing body of evidence suggesting that mindfulness-based interventions (MBIs) are effective in reducing health-related harm. Promoting health-protective behaviors has become an increasing trend. Studies show that regular meditators are happier and more satisfied than the general population, which has important health implications, as positive emotions are associated with a healthier life.

The practice of mindfulness meditation leads to improvements in anxiety, depression, and irritability (Baer et al., 2006), as well as in memory (Jha, Krompinger & Baime, 2007). Reaction times become faster, and both mental and physical vigor increase. Meditation practice reduces key indicators of chronic stress, including hypertension (Ver Low, Stanton & Bower, 2008), and also decreases the impact of serious illnesses such as chronic pain and cancer. It may even help in the treatment of drug and alcohol addiction (Bowen et al., 2006).

The aim of this study is to conduct an integrative literature review to explore the relationship between mindfulness—specifically mindfulness-based interventions—and BPD. It also seeks to define mindfulness and describe its role within the context of MBIs, understand the process of self-regulation and its neurobiological basis, and synthesize research that presents evidence for the relationship between MM and BPD.

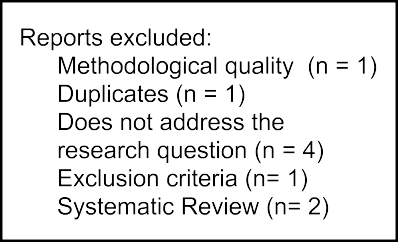
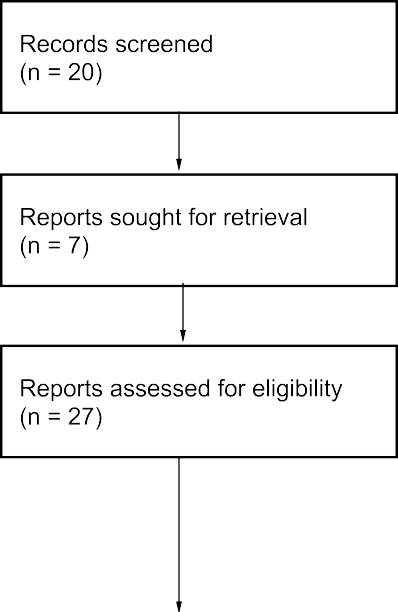
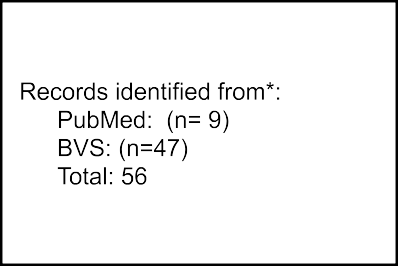
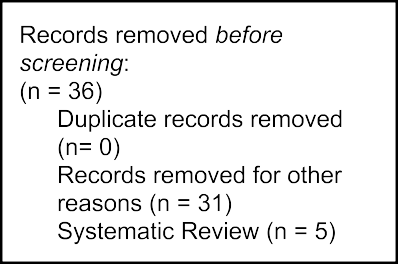
# METHODOLOGY

This study is an integrative literature review aimed at selecting, evaluating, and analyzing the relationship between Borderline Personality Disorder (BPD) and Mindfulness. The study follows the structured steps described for integrative reviews, as outlined by (WHITTEMORE E KNAFL, 2005; RUSSEL, 2005): theme formulation, literature search, data evaluation, data analysis, and interpretation and presentation of results.

Searches will be conducted in the PubMed and BVS databases (SciELO, Lilacs, and PsychInfo) using the descriptors: “Borderline Personality Disorder" AND "Mindfulness”.

Article published in scientific journals will be included if they meet the following inclusion criteria: full-text articles addressing the relationship between BPD and mindfulness meditation, published in Portuguese, Spanish, or English language between 2013 and 2023 - last ten years. Review studies and case reports will be excluded. Additionally, a manual search will be conducted in the reference lists of the selected articles to identify relevant studies not retrieved in the initial search.

Figura 1- PRISMA 2020 flow diagram





Fonte: Autores, 2024

# RESULT AND DISCUSSION

The synthesis of the studies included and evaluated in this review was organized as outlined in Table 1. It elaborates on the aspects of the cited studies based on the theme, including author, year, study nationality, database, diagnostic criteria and scales, applied methodology, objective, obtained results, and conclusion.

**Table 1 - Description of the articles included in the study.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **AUTHOR / YEAR / NATIONALITY** | **DATABAS E** | **DIAGNOSTIC CRITERIA / DIAGNOSTIC SCALES** | **METHODOLO GY / SAMPLE SIZE** | **OBJECTIVE** | **RESULTS** | **CONCLUSION** |
| Elices, M. 2016, | MEDLINE | ¹ DSM-IV-TR | Randomized trial | To investigate the | Improvement in the BSL-23 | Mindfulness |
| Espanha. |  | ² BSL-23 | N= 64. | improvement of | scale (p = 0.0004), as well as | training is an |
|  |  | ³FFMQ |  | BPD symptoms | a significant pre- and | effective treatment |
|  |  | ⁴ EQ |  | and | post-difference in the | for reducing |
|  |  | ⁵ BAI |  | mindfulness-relat | mindfulness group [t (18) = | borderline |
|  |  | ⁶ Acceptance and |  | ed capacity after a | -6.60, p = 0.000003]. In the | symptoms. |
|  |  | Action |  | 10-week program. | M group, 12 participants | Moreover, it also |
|  |  | Questionnaire-II |  |  | showed response rates after | enhances |
|  |  |  |  |  | the treatment, with 5 (42%) | components related |
|  |  |  |  |  | achieving significant changes | to mindfulness. |
| Elices, M. *et al.* 2015, | MEDLINE | ¹ CTQ-SF | Cross-sectional | To evaluate the | Associations were found | Mindfulness-based |
| Britânico. |  | ² ZKPQ | study. | relationship | between sexual abuse and | interventions can |
|  |  | ³FFMQ | N = 100. | between | acting with awareness. | treat emotionally |
|  |  |  |  | temperamental | Regression analyses included | dysregulated |
|  |  |  |  | traits and | only the CTQ-SF and ZKPQ | individuals with a |
|  |  |  |  | childhood | subscales, which showed | history of trauma, |
|  |  |  |  | maltreatment with | significant simultaneous | being useful for |
|  |  |  |  | mindfulness in | Pearson correlations (p < | increasing |
|  |  |  |  | BPD. | 0.05) with mindfulness. | awareness while |
|  |  |  |  |  |  | reducing avoidance |
|  |  |  |  |  |  | symptoms. |
| Farrés, C.C. *et al.* | MEDLINE | ¹ DSM-IV | Empirical study | To examine the | A decrease in the BIS-11 | The mindfulness |
| 2018, Britânico. |  | ² DERS | N = 70. | impact of | score was observed [t(20) = | module improves |
|  |  | ³ BSL-23 |  | mindfulness | 5.15, p < 0.001] and in the | emotional regulation |
|  |  | ⁴ BIS-11 |  | training on | non-planning subscale [t(20) | and impulsivity. |
|  |  |  |  | emotional | = 2.58, p = 0.02] in the |  |
|  |  |  |  | dysregulation and | DBT-M group. In terms of |  |
|  |  |  |  | impulsivity after | general psychopathology, |  |
|  |  |  |  | 10 weeks. | regardless of the group, an |  |
|  |  |  |  |  | overall improvement in BPD |  |
|  |  |  |  |  | symptoms was observed, |  |
|  |  |  |  |  | which was significant in the |  |
|  |  |  |  |  | DBT-M group. |  |
| Farrés, C.C. *et al.* | MEDLINE | ¹ DSM-IV | Randomized pilot | To examine the | "A decrease in borderline and | The clinical |
| 2019. Espanha |  | ² BSL‐23 | Study | effect of | depressive symptomatology | improvements |
|  |  | ³ Beck Depression | N = 72. | mindfulness | was observed, as well as a | observed after the |
|  |  | Inventory |  | training on BPD | reduction in trait anxiety and | specific DBT |
|  |  | ⁴ State‐Trait |  | symptomatology | state anxiety. Different levels | module were not |
|  |  | Anxiety Inventory |  | and the activity of | of deactivation were | associated with |
|  |  | ⁵ Five Facet |  | network | observed, with the DBT-M | changes in DMN |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Mindfulness Questionnaire. |  | dysfunctions in default mode during the performance of a working memory task. | group showing greater deactivation in a cluster in the medial occipital location, extending bilaterally from the calcarine and cuneus to the superior occipital gyri (p < 0.001). | activations or deactivations during the performance of a cognitive task. |
| Feliu-Soler, A. *et al*. | PUBMED | ¹ HDRS | Preliminary study | To evaluate | Post-intervention, | There is a |
| 2014, Americana. |  | ² BPRS | N = 35. | whether 10 weeks | improvement was observed | relationship between |
|  |  | ³ EQ |  | of | in both groups; however, a | the improvement of |
|  |  | ⁴ SAM |  | DBT-mindfulness | significantly greater | clinical |
|  |  | ⁵ Autoavaliação |  | training can | improvement was seen in the | symptomatology |
|  |  |  |  | reduce emotional | DBT-M group (F(2,32) = | and the average time |
|  |  |  |  | reactivity in | 6.74, p = 0.004). Regarding | of formal practice |
|  |  |  |  | patients with | associations with clinical | and emotional |
|  |  |  |  | BPD. | variables, a strong correlation | regulation. |
|  |  |  |  |  | was observed between the |  |
|  |  |  |  |  | improvement in HDRS |  |
|  |  |  |  |  | scores and the average |  |
|  |  |  |  |  | duration of daily mindfulness |  |
|  |  |  |  |  | practice (r = 0.68, p = 0.015). |  |
| Fitzpatrick, S.; Kuo, | MEDLINE | ¹ DSM-IV | Quantitative | To examine | No differences were observed | Emotional reactivity |
| J.R. 2022, Canadense. |  |  | empirical study | emotional | in any mindfulness or | in determining |
|  |  |  | N = 120. | reactivity to | distraction condition. | which emotional |
|  |  |  |  | emotional stimuli | However, statistically | regulation strategies |
|  |  |  |  | with the aim of | significant differences were | are most effective |
|  |  |  |  | predicting the | found between time and | for individuals with |
|  |  |  |  | effectiveness of | reactivity, meaning that | BPD. |
|  |  |  |  | emotional | higher emotional reactivity |  |
|  |  |  |  | engagement and | was associated with greater |  |
|  |  |  |  | regulation. | reduction in negative |  |
|  |  |  |  |  | emotions during the |  |
|  |  |  |  |  | emotional regulation phase. |  |
| Jiménez, S. *et al*. | MEDLINE | ¹ DSM-IV | Retrospective | To evaluate | DBT reduces the severity and | DBT reduces the |
| 2022, Americana. |  | ² DFMNP | Study | baseline | impulsivity of BPD when | severity and |
|  |  |  | N = 125. | predictors of | comparing pre- and | impulsivity of BPD |
|  |  |  |  | clinical change in | post-treatment periods. | when comparing |
|  |  |  |  | patients with | Furthermore, several | pre- and |
|  |  |  |  | BPD using | characteristics associated | post-treatment |
|  |  |  |  | machine learning | with clinical changes | periods. |
|  |  |  |  | techniques. | following Dialectical | Furthermore, several |
|  |  |  |  |  | Behavior Therapy were | characteristics |
|  |  |  |  |  | identified. | associated with |
|  |  |  |  |  |  | clinical changes |
|  |  |  |  |  |  | following |
|  |  |  |  |  |  | Dialectical Behavior |
|  |  |  |  |  |  | Therapy were |
|  |  |  |  |  |  | identified. |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Keng, S; Tan, | | | | J.X. | MEDLINE | ¹ PAI-BOR | | Experimental | To compare the | Mindfulness may be a | There is |
| 2017. Holanda | | | |  |  | ² MEPS | | Study | effects of a brief | promising approach to | effectiveness of |
|  | | | |  |  | ³ VAS | | N = 88. | mindfulness | improve the negative | mindfulness as a |
|  | | | |  |  | ⁴ DASS-21 | |  | induction versus | emotional effects of social | strategy to regulate |
|  | | | |  |  | ⁵ Inventory of | |  | loving-kindness | rejection, and the practice is | shame among |
|  | | | |  |  | Depressive | |  | meditation | also associated with a | individuals with |
|  | | | |  |  | Symptomatology. | |  | (LKM) on shame | reduction in aggressive | BPD traits. |
|  | | | |  |  |  | |  | skills and social | behavior. |  |
|  | | | |  |  |  | |  | problem-solving |  |  |
|  | | | |  |  |  | |  | skills (SPS). |  |  |
| Keng, S. *et al.* 2021, | | | | | PUBMED | ¹ PAI-BOR | | Applied research | To evaluate the | Improvements were observed | DBT skills training |
| Britânico. | | | | |  | ² DSHI | | N = 20. | feasibility, | in depressive, anxious, | is feasible and |
|  | | | | |  | ³ PHQ-9 | |  | acceptability, and | stress-related, impulsive | acceptable in a |
|  | | | | |  | ⁴ DASS-21 | |  | clinical outcomes | symptoms, and difficulties | clinical setting, |
|  | | | | |  | ⁵ DERS-SF | |  | of a 14-week | with emotional regulation, | promising better |
|  | | | | |  | ⁶ SCS | |  | abbreviated | which were negatively | clinical outcomes in |
|  | | | | |  | ⁷ PWI | |  | program. | associated with | patients with BPD. |
|  | | | | |  | ⁸ SCID-II | |  |  | self-compassion and personal |  |
|  | | | | |  | ⁸ C-SSRS | |  |  | well-being (p < 0.005). There |  |
|  | | | | |  |  | |  |  | was a trend towards |  |
|  | | | | |  |  | |  |  | reductions in the frequency of |  |
|  | | | | |  |  | |  |  | self-harming behaviors and |  |
|  | | | | |  |  | |  |  | suicidal ideation (p values |  |
|  | | | | |  |  | |  |  | ranging from 0.019 to 0.088). |  |
| Kramer, | U. | *et* | | *al.* | MEDLINE | ¹ DSM-IV | | Randomized | To investigate | An effect was observed on | The distinction |
| 2016. Americana. | | | |  |  | ² SCID-II | | controlled clinical | whether assertive | the mean frequency of late | between assertive |
|  | | | |  |  | ³ | Outcome | Trial | anger mediates | assertive anger (F(1, 30) = | anger and rejection |
|  | | | |  |  | Questionnaire | | N = 41. | the effects of | 1.01, p = 0.02, d = 0.78). It | has clinical |
|  | | | |  |  |  | |  | DBT-informed | was observed that the change | implications and |
|  | | | |  |  |  | |  | skills training in | in assertive anger mediated | should be explored |
|  | | | |  |  |  | |  | patients | the link between group | further in relation to |
|  | | | |  |  |  | |  | diagnosed with | assignment and the reduction | the processes of |
|  | | | |  |  |  | |  | BPD. | of social role-related | change in DBT. |
|  | | | |  |  |  | |  |  | problems. |  |
| Krantz, |  |  | L.H; | | MEDLINE | ¹ | International | Randomized | To evaluate | It is believed that | The findings suggest |
| McMain, S; Kuo, J.R. | | | | |  | Personality | | controlled study | whether the four | non-judgmental acceptance | that the dimension |
| 2018, Americana. | | | | |  | Disorder Exame | | N = 84. | dimensions of | predicts the frequency of | of non-judgmental |
|  | | | | |  | ² BSL-23 | |  | mindfulness | NSSI, while other dimensions | acceptance has a |
|  | | | | |  | ³ L-SASII | |  | predicted the | of mindfulness do not. | significant impact |
|  | | | | |  |  | |  | frequency of | Patients in DBT-ST had | on reducing |
|  | | | | |  |  | |  | non-suicidal | lower rates of NSSI | involvement in |
|  | | | | |  |  | |  | self-injury (NSSI) | post-treatment (𝛽 = 3.83, t = | NSSI, making it an |
|  | | | | |  |  | |  | after a 20-week | 2.28, p = 0.03). | important facet in |
|  | | | | |  |  | |  | training. |  | the approach to |
|  | | | | |  |  | |  |  |  | patients with BPD. |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Linehan, M.M. *et al.* | PUBMED | ¹ DSM-IV | | Randomized | To evaluate the | No significant difference was | Interventions that |
| 2015, Americana. |  | ² Suicidal | | clinical trial | importance of | found between suicide | include DBT skills |
|  |  | Behaviors | | N = 99. | DBT skills | attempts during the study, | training are more |
|  |  | Questionnaire | |  | training compared | and the survival analysis did | effective, being |
|  |  | ³ M.M.L | |  | to other | not indicate a difference | effective in reducing |
|  |  | ⁴ Hamilton Rating | |  | components of | between the groups. A | the risk of suicide |
|  |  | Scale | |  | DBT. | difference was observed | attempts and |
|  |  |  | |  |  | between the groups in | episodes of |
|  |  |  | |  |  | non-suicidal self-injury, with | non-suicidal |
|  |  |  | |  |  | significantly higher rates in | self-injury. |
|  |  |  | |  |  | DBT-I compared to standard |  |
|  |  |  | |  |  | DBT. |  |
| Mitchell, R; Robertes, | MEDLINE | ¹ FFMQ | | Longitudinal | To examine the | Increases were observed in | Mindfulness is |
| R; Bartsch, D; |  | ² BSL-23 | | Study | relationship | all facets of mindfulness from | associated with |
| Sullivan, T. 2018. |  | ³ BASIS‐32 | | N = 35. | between the | pre-treatment to | greater treatment |
| Americana. |  | ⁴ K10 | |  | acquisition of | post-treatment, along with a | gains and |
|  |  | ⁵ Inventory of | |  | mindfulness skills | reduction in anxious, | contributes to the |
|  |  | Depressive | |  | and the reduction | depressive, and distress | reduction of |
|  |  | Symptomatology. | |  | of BPD | symptoms. An increase in | symptoms. |
|  |  |  | |  | symptoms in a | mindfulness and |  |
|  |  |  | |  | 20-week program. | improvements in functioning |  |
|  |  |  | |  |  | were also observed. |  |
| Schmidt, C. *et al*. | PUBMED | ¹ Diagnóstico | | Quantitative | To compare the | DBT-M was more effective | Mindfulness-based |
| 2021. Espanha. |  | clínico baseado em | | empirical study | effectiveness of | than DBT-IE in reducing | DBT plays a key |
|  |  | duas entrevistas | | N = 102. | mindfulness-base | BPD symptoms, although | role in decentering, |
|  |  | semiestruturadas. | |  | d DBT skills | both interventions were | suggesting that this |
|  |  | ² DSM IV | |  | training with | effective in reducing | skill is a main |
|  |  | ³ Entrevista | |  | interpersonal | emotional dysregulation. A | component in the |
|  |  | diagnóstica para | |  | effectiveness-base | reduction in symptoms was | treatment of BPD. |
|  |  | Borderlines. | |  | d DBT training in | observed, along with an |  |
|  |  |  | |  | reducing BPD | increase in the ability to |  |
|  |  |  | |  | symptoms. | decenter, which in turn |  |
|  |  |  | |  |  | reduced emotional |  |
|  |  |  | |  |  | dysregulation. |  |
| Seow, L.L; Page, | PUBMED | ¹ BSL-23 | | Randomized | To analyze the | DBT skills lead to reductions | The use of |
| A.C; Hooke, G.F. |  | ² WHO-5 | | clinical trial | relationship | in psychological distress after | mindfulness over |
| 2020, Alemã. |  | ³ DI-5 | | N = 102. | between the use | 12 sessions (𝛽 = 26 [-20, | the weeks showed |
|  |  | ⁴ HoNOS | |  | of DBT skills and | -26]). For patients with | improvements in |
|  |  | ⁵ DASS-21 | |  | the improvement | moderate to high symptom | psychological |
|  |  | ⁶ DBT Progress | |  | in the severity of | levels, the use of skills and | distress, emotional |
|  |  | Questionnaire. | |  | BPD symptoms | positive attitudes were | regulation, distress |
|  |  |  | |  | over a 12-week | favorable for reducing | tolerance, and |
|  |  |  | |  | program. | psychological distress in the | personal |
|  |  |  | |  |  | post-treatment phase (𝛽 = | effectiveness skills. |
|  |  |  | |  |  | -0.31 and 𝛽 = -0.54, p = |  |
|  |  |  | |  |  | 0.001). |  |
| Southward, M.W.; | PUBMED | ¹Personality |  | Longitudinal | To compare the | A reduction in the frequency | It is concluded that |
| Howard, K.P.; |  | Assessment |  | Study | relative | of maladaptive behaviors was | the reduction of |
| Cheavens, J.S. 2023, |  | Inventory | – | N = 87. | contributions of | observed among patients | maladaptive |
| Holandesa. |  | Borderline |  |  | maladaptive and | throughout DBT treatment (p | strategies (self-harm |
|  |  | Subscale. |  |  | adaptive | < 0.01, 95% CI), along with | or emotional |
|  |  | ² DSM-IV-TR |  |  | frequency to the | improvement in BPD | dysregulation) is |
|  |  |  |  |  | outcomes of | symptoms, including | more effective for |
|  |  |  |  |  | Dialectical | decreased emotional | DBT outcomes. |
|  |  |  |  |  | Behavior | instability, self-destructive |  |
|  |  |  |  |  | Therapy. | behaviors, and interpersonal |  |
|  |  |  |  |  |  | difficulties. |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Stratton, N. *et* | *al.* | PUBMED | ¹ DSM-IV | Observational | To identify | "The dropout rate was 30.9% | Patients diagnosed |
| 2018, Americana. |  |  | ² L-SASI | Study | predictors of | (n = 13 participants), a | with BPD benefited |
|  |  |  | ³ BIS-11 | N = 42. | treatment dropout | situation associated with | from an approach |
|  |  |  | ⁴ DBT-WCCL |  | among the | mindfulness, impulsivity, | that prioritizes |
|  |  |  | ⁵ STAXI |  | population with | anger, and depression (p < | mindfulness to |
|  |  |  | ⁶ BDI-II |  | suicidal behavior | 0.5). Therefore, participants | reduce the |
|  |  |  | ⁷ GSRS |  | and a BPD | who developed mindfulness | likelihood of |
|  |  |  | ⁸ KIMS |  | diagnosis. | skills were significantly less | treatment dropout. |
|  |  |  |  |  |  | likely to drop out of |  |
|  |  |  |  |  |  | treatment (VIF = 1.25). |  |
| Zeifman, R J. *et al*. | | MEDLINE | ¹ BSL-23 | Randomized | To test whether | "Mindfulness and distress | Improvements in |
| 2020, Americana. | |  | ² SCL-90 –R | controlled trial | improvements in | tolerance play important and | mindfulness and |
|  | |  | ³ SAS-SR | N = 84. | mindfulness and | independent roles in | distress tolerance |
|  | |  | ⁴ KIMS |  | distress tolerance | improving outcomes, with the | are critical |
|  | |  | ⁵ DTS |  | affect DBT skills | KIMS and DTS models | components of |
|  | |  |  |  | training and | significantly increasing over | effective treatment |
|  | |  |  |  | clinical outcomes. | the 20 weeks of DBT-S. | for BPD, and as |
|  | |  |  |  |  |  | such, they are |
|  | |  |  |  |  |  | factors that can help |
|  | |  |  |  |  |  | refine clinical |
|  | |  |  |  |  |  | outcomes for BPD. |

Borderline Symptoms List-23 (BSL23); Five Facet Mindfulness Questionnaire (FFMQ);Experience Questionnaire (EQ); Beck Anxiety Inventory (BAI); Emotion Regulation Scale (DERS); Barratt Impulsivity Scale-11 (BIS-11); Hamilton Depression Rating Scale (HDRS); Brief Psychiatric Rating Scale (BPRS); Manikin questionnaire (SAM); Diagnostic confirmation by mental health professinonals at the Fuente Muniz National Institute of Psychiatry (DFMNP); Personality Assessment Inventory e Borderline Features (PAI-BOR); Means-ends Problem Solving Task (MEPS); Eleven Visual Analogue Scales (VAS); Depression, Anxiety and Stress Scale-21 (DASS-21); Deliberate self-harm inventory (DSHI); Patient health Questionnaire-9 (PHQ-9); Difficulties with emotion regulation scale- short form (DERS-SF); Self-compassion scale (SCS); Personal well-being index (PWI); BPD module of the structured clinical interview for Axis II personality disorders (SCID-II); Columbia suicide severity rating scale (C-SSRS); Behaviour and Symptom Identification Scale (BASIS‐32); Kessler Psychological Distress Scale 10 (K10); World Health Organization’s Wellbeing Index (WHO-5); Five Item Daily Index (DI-5); Health of a Nation Outcome Scale (HoNOS); 21-Item Depression, Anxiety and Stress Scale (DASS-21); Lifetime Suicide Attempt and Self-Injury Interview (L-SASI); DBT Ways of Coping Check- list (DBT-WCCL); Anger Expression subscale of the State-Trait Anger Expression Inventory (STAXI); The Beck Depression Inventory-II (BDI-II); Group Session Rating Scale (GSRS); Kentucky Inventory of Mindfulness Scale (KIMS); Severity Index of the Symptom Checklist-90 –Revised (SCL-90 –R); Behavioral and emotional social adjustment was assessed using the Social Adjustment Scale–Self-Report (SAS-SR); Distress Tolerance Scale (DTS); Childhood Trauma Questionnaire (CTQ-SF); Zuckerman-Khulman Personality Questionnaire (ZKPQ) .

FONTE: Autores, 2024.

Mindfulness meditation practices have a direct impact on the biological and psychological levels of individuals diagnosed with Borderline Personality Disorder, aiding in emotional regulation and reducing symptoms such as depression, anxiety, and impulsivity (Chafos et al., 2014; Elices et al., 2015; Kang et al., 2017). Furthermore, studies show that the integration of mindfulness as an adjunct therapy in the treatment of borderline personality disorder (BPD) can lead to reductions in stress symptoms and improvements in the quality of life of patients (Jiménez et al., 2021; Keng et al., 2021; Seow et al., 2020), as the practice of this meditation model empowers patients to develop more adaptive strategies for regulating their emotions. The results are promising and encouraging, showing reductions in BPD symptoms, depressive

symptoms, and stress, even in a short period of time (Kang et al., 2017). Supporting these results, Seow (2020) elaborates on better symptom outcomes in patients after 12 sessions.

Breathing as a tool for self-regulation (as used in mindfulness) can systematically enhance the influence of the vagus nerve over the heart (Porges et al., 2017). Slow breathing increases vagal activation and parasympathetic tone, leading to improved physical and psychological well-being (Mason et al., 2013). Slowing down and deepening the breath during moments of distress restores vagal control and improves the state of suffering (Jereath et al., 2015).

The research conducted by Remskar et al. (2024) represents a significant advancement in understanding the mechanisms of action of MBIs. The study highlights the potential of this practice as an effective tool for promoting well-being, revealing substantial improvements across various aspects of mental and behavioral health. The results demonstrate that mindfulness can induce gradual changes in motivation for self-care, enhancing positive attitudes towards health and strengthening behavioral intentions to maintain it.

Researchers identified significant impacts, such as improvements in psychological well-being, reduction of symptoms of depression and anxiety, and potential long-term benefits for sleep quality. The intervention was shown to promote greater autonomic self-regulation, a complex process that involves emotional evaluation, attentional control, and self-referential cognitions. Although the study focused on general constructions related to health behavior, the authors suggest that future research may explore more specific and objective measures of health behaviors.

This investigation represents an important step towards understanding how mindfulness practices can be utilized in clinical and health promotion contexts, offering an accessible and promising intervention for the development of healthier behaviors and attitudes.

Studies on Dialectical Behavior Therapy (DBT) demonstrate that improvement in emotional regulation is directly related to the reduction of symptoms of Borderline Personality Disorder (BPD) and the control of impulsive behaviors. Interventions such as mindfulness, which promote the acceptance of emotions, combined with neuroplasticity, can reorganize brain connections and enhance self-regulation, facilitating more adaptive responses to challenging situations (Kramer, 2016). DBT,

which includes mindfulness skills training, may be even more effective when these practices are reinforced (Zeifman et al., 2020).

Househam's research (2023) highlights the significance of epigenetic regulation through mindfulness practices, considering that these practices generally rely on brain-based strategies, such as focused attention, awareness of thought processes, and somatic awareness. Epigenetics is a field of science that focuses on how external factors, such as experiences, lifestyle, and environment, influence gene activity without directly altering the DNA sequence. These factors can activate or silence specific genes, shaping cellular function and, consequently, physical and mental health over time. This concept is supported by studies such as those by Elizabeth Blackburn (2004) and Francis et al., which emphasize the relationship between life experiences and genetic regulation.

A fundamental aspect of epigenetics, as described in the study, particularly during gestation, is the role of maternal estrogen **(SZYF et al, 2005).** This hormone plays a crucial role in fetal development, influencing epigenetic processes that affect gene expression in the developing infant. Adequate levels of estrogen during pregnancy are essential for the healthy development of the fetal brain and nervous system, in addition to contributing to the formation of mechanisms that regulate stress response and mental health throughout life (Champagne et al, 2006). Changes in maternal hormonal balance, including suboptimal levels of estrogen, may be associated with an increased risk of mental disorders, such as anxiety and depression, in the child's future.

The practice of mindfulness can contribute to balancing the endocrine system and hormonal regulation, reducing stress, and promoting future mental health. It is important to note that regular mindfulness practice after childbirth can strengthen mother-child bonds, fostering positive interactions that also influence the child's epigenetics, contributing to neuroplasticity and overall well-being. Today, there is evidence that mindfulness influences inflammatory and epigenetic mechanisms, which are relevant in mood and stress disorders. Individuals who engage in mindfulness exhibit a lower inflammatory response following stress, as evidenced by the production of interleukin-6 (a mediator of the inflammatory response) (Rosenkranz et al 2013).

The initial studies on how mindfulness practice and meditation alter gene expression **occurred** in immune system cells, with special focus on inflammatory markers related to stress and the associated biological pathways. Several studies observed a significant reduction in the activity of the pro-inflammatory transcription

factor, in addition to which other anti-inflammatory biomarkers showed an increase in their activity following a mindfulness intervention. The development of concentration, attention, and moment-to-moment acceptance alters brain patterns and modulates epigenetic information, translating into an anti-inflammatory state with a positive impact on the individual's quality of life. (BOTTONI, 2020).

Thus, mindfulness, when incorporated into the lives of patients with borderline personality disorder, can have a significant impact on epigenetic modulation, promoting a reconfiguration of stress response patterns and improving emotional regulation. Studies suggest that practices such as meditation and mindfulness can reduce the activation of genes related to inflammation and stress, areas that are often dysregulated in individuals with emotional disorders (Hölzel et al., 2011). By stimulating the autonomic nervous system and enhancing the mind-body connection, mindfulness aids in reducing impulsive reactions and increasing awareness of one’s own emotions, creating a space for patients to modify their behavioral and emotional responses (Kabat-Zinn, 2003). Thus, the regularity of practice may contribute to lasting changes in the genetic expression associated with stress resilience, thereby improving the mental health and quality of life of patients in the long term (Davidson & Kabat-Zinn, 2004).

Moreover, mindfulness can be particularly beneficial for patients with a history of trauma, such as sexual abuse (SA). There is consensus with Freire et al. (2024) regarding the relationship between childhood trauma and the diagnosis of borderline personality disorder (BPD) in adulthood. In this research, the authors concluded that childhood trauma can be viewed as a risk factor for the diagnosis of BPD, as well as being associated with greater symptom severity and poorer prognosis, especially concerning SA, whose impact, both in childhood and adulthood, correlates with greater severity of BPD. Mindfulness-based interventions may address emotionally dysregulated individuals with a history of trauma, serving as an important approach for reducing avoidance symptoms (Elices, 2015).

The practice of mindfulness provides a favorable approach in improving the quality of life and symptoms of patients with Borderline Personality Disorder (BPD). This aligns with Stratton (2018) regarding the improvements observed during the study and the reduction in treatment dropout over the sessions.

# CONCLUSION

This study aimed to present a review of the benefits of mindfulness as a therapeutic approach for patients with Borderline Personality Disorder (BPD). According to the findings, the incorporation of mindfulness into BPD treatment shows a significant impact on patients' self-regulation, demonstrating improvements primarily in emotional dysregulation, impulsivity, anger control, reduction of comorbid disorder symptoms (e.g., anxiety and depression), and self-harming and suicidal behaviors. Furthermore, there is a lower rate of treatment evasion, resulting in satisfactory clinical responses.

We highlight that future studies with larger samples will be essential to reaffirm the effectiveness of mindfulness practice in treating emotionally dysregulated individuals.

Finally, given the therapeutic potential **of the association** between mindfulness and BPD, it is crucial that more research includes this patient group, as investing in this intervention could expand access to treatment for a large number of patients who do not respond to other recommended therapies. Further research in Brazil is necessary, as future studies may benefit from a deeper understanding of the complementarity of this approach.

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