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CANNABIDIOL AS A FORM OF TREATMENT IN PATIENTS WITH POST-TRAUMATIC STRESS DISORDER OF VICTIMS OF VIOLENCE – COMPREHENSIVE REVIEW

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ABSTRACT

Introduction. Violence as a social and public health problem, with a particular focus on its consequences, such as Post-Traumatic Stress Disorder (PTSD). According to the World Health Organization, violence encompasses the intentional use of physical force or power, threatening or harming individuals, groups, or communities. Objective: To describe the effects of Cannabidiol in patients with Post-traumatic Stress due to physical and psychological violence. Methodology: This is an integrative observational and retrospective systematic review, with the following exclusion criteria: non-empirical articles, non-indexed publications, a total of 545 articles related to post-traumatic stress and cannabidiol were found and only 13 articles were selected to present the results of this study. Results and discussion: The endogenous endocannabinoid system plays a significant role in the processing and extinction of fear memory. Cannabidiol (CBD), a non-psychoactive component of Cannabis sativa, has shown potential in the treatment of anxiety disorders, including PTSD. CBD interacts with the endocannabinoid system indirectly by increasing the availability of endocannabinoids like anandamide, which acts on CB1 receptors in the brain. This activation of the endocannabinoid system can help reduce the behavioral response to aversive memories and improve fear extinction. Final Thoughts: While early research on the effects of CBD on PTSD is promising, more studies are needed to determine its efficacy and safety, particularly in victims of violence. The sources also emphasize the need for greater awareness and accessibility to cannabinoid-based treatments for those who can benefit from them.

Keywords: Physical Violence. Psychic Violence. Post-traumatic stress. Cannabidiol Therapy.

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INTRODUCTION

According to the World Health Organization The Organization defines violence as the use of physical force or power, in a threatening or practical manner, against oneself, another person, group or community. Violence can result in suffering, death, psychological damage, impaired development, and deprivation. Unfortunately, violence affects all sectors of society, being a multidetermined and extremely complex phenomenon, and brings with it damage not only to the victim, but also to the perpetrator and society. The impact of violence interferes with the economy, development and social relations of a population (De Tartari *et al*, 2006); (De Souza; Vizzoto, 2018).

The term violence, of nature, can be used in many social contexts, it can be used for physical violence, abandonment, financial abuse, emotional, verbal and psychological abuse, among others. In many cases, it can become fatal for the victim or leave irreversible sequelae. In the various life cycles we find violence present, the most common, perhaps because it is more notified, is that practiced against women, in most cases subjecting women to sexual practices against their will; mistreatment – physical abuse, social isolation; by prohibiting the use of the media; access to health care; intimidation (Gomes, 2012); (Dias et al, 2018).

When discussing violence, we can cite Minayo (2004) who reports that violence is a social issue and due to this it is not the object of any specific sector, the author states that the theme of violence becomes a theme more linked to health because it is associated with quality of life; by the physical, psychic and moral injuries it entails and by the demands of attention and care of the medical-hospital services, and by the expanded conception of the concept of health (Minayo, 2004); (Johnson, 2008).

Brazil is within a historical context, it is considered one of the most violent countries in the world. According to data from the Institute of Applied Economic Research (IPEA), homicide rates have remained one of the causes of deaths above 20 per 100 thousand inhabitants since the 1990s, reaching the highest level in 2017, and with a considerable increase during the COVID-19 Pandemic, as if the command "stay at home" was a trigger factor for the practice of violence. Until 2017, the homicide rate was approximately 31.6%. If we consider the global average rate, this same year in the world was 6.1 homicides per 100 thousand inhabitants, the Brazilian statistics are presented and remain well above the world average. According to the report "Citizen Security in Latin America" (Muggahe Tobon, 2018) Many Latin American countries, states and cities are facing a chronic public security crisis. Despite a modest economic growth rate, crime and victimization rates are increasing, every day However, information from 2017 shows some signs of improvement. Criminal violence

is routinely pointed out as one of the main concerns in South America. And there are warning signs that the region's high rates of criminal violence and victimization will continue to rise if nothing is done (Muggahe Tobon, 2018); (Abude, 2021.

Homicides in Brazil accounted for 13% of the world total in 2016, however homicide rates did not occur equally in Brazil. What can be observed is that violence, homicide being its cruelest form, has been suffering a worrying increase in several Brazilian municipalities, especially those with less than 100 thousand inhabitants (et al., 2019), in the last two decades there has been a sharp growth in homicide rates in small municipalities (below 100 thousand inhabitants), where rates grew 113% between 1997 and 2017, on the other hand, medium-sized municipalities (between 100 and 500 thousand inhabitants) had an increase of 12.5% and in large municipalities (above 500 thousand) a reduction of 4.5% was observed (Cerqueira *et al* , 2019); (Cerqueira *et al*, 2020); (Motini; Mountain; Becker, 2021); (Cerqueira *et al*, 2021).

However, when violence does not evolve into death, it can leave both physical and psychological sequelae in the victims, in any life cycle. In this premise, the post-violence period is challenging for the victim, as there may be a loss of continuity of violence or even the denial of violence and thus not seek help, which can expose the victim to high rates of adverse events, such as medication errors, lack of follow-up of test results (in cases of sexual violence. However, the post-violence period is an especially vulnerable time for these victims, as they return physically and psychologically injured to the same environment in which the violence was perpetrated (De Tartari *et al*, 2006).

In the fight against violence, there have been some advances in relation to it, as it is the recognition of it as a public health problem and not just a domestic one, despite the fact that cases of domestic violence are usually caused by family members or intimate partners and often within the home. (De Souza; Vizzoto, 2018).

Unfortunately, one of the most common consequences of violence, when it does not evolve to death, includes psychiatric disorders, including substance abuse, illicit drugs, depression, anxiety, and post-traumatic stress disorder (PTSD), according to scientific reports stating that aggression has a strong association with the occurrence of psychic and physical impairments (De Souza; Vizzoto, 2018).

An article conducted in 1997 reported that the strongest risk factor for the identification of battered women in one of the primary care settings was depressive symptoms (Campbell; Lewandowski, 1997)

Exposure to traumatic events can be frequent throughout life, and can affect 90% of the general population, especially men5 . However, the development of PTSD is not linear

and can vary according to individual characteristics of the victim, reaching the level of approximately 7% throughout life in the United States, its occurrence may depend on social, individual and genetic factors such as: age, education, religion, personality, in addition to individual factors and how each individual deals with problems and feelings and previous history of mental disorders (Astur *et al*, 2006); (Wofford; Hertzberg; Vacchiano, 2012); (Johansen, 2007); (Cervantes *et al*, 2013).

For the treatment of PTE, three types of drugs are currently being used, including selective serotonin norepinephrine reuptake inhibitors and atypical antipsychotics, although the results have been limited. However, pharmacological therapeutic alternatives are needed (Hoskins *et al),* including cannabidiol (CBD), a component of the *Cannabis sativa* plant that does not produce hallucinogenic effects and has presented numerous therapeutic possibilities used with good results in cases of epilepsy and pain, in addition to its anxiolytic and antipsychotic effects. The anxiolytic effect of CBD has been used in humans in controlled experimental situations, using a single dose in healthy volunteers and patients with social anxiety disorder. CBD is believed to have a neuroprotective role and against acute excitability, indirectly activating CB1, reducing excessive glutamate (GLU) transmission, pointed out as a factor that causes excitement toxicity and seizures (APA, 2013); (Bayer *et al*, 2023); (Bolsoni *et al*, 2020); (Elms et al, 2023); (Guimarães *et al*, 2023); (LI, Han *et al*, 2023)

Thus, this study aims through an integrative review, to describe the effects of Cannabidiol in patients with Post-traumatic Stress due to physical and psychic violence.

METHODOLOGY

The integrative systematic review is characterized by an observational and retrospective research design, which synthesizes the results of multiple primary investigations. This type of study seeks to perform content analysis consistent with a research technique for the objective, systematic and quantitative description of the manifest content related to a specific theme, in the study in question, the authors established subcategories based on pre-established variables with which the data searches were directed (Beltran, 2016); (Berelson *et al*, 2017).

Information was collected from the national and international literature. Subsequently, a synthesis of the distribution of the subcategories in quantitative techniques was made. In a first phase, the search and individualized follow-up of terms related to violence, post-traumatic stress and therapy with Cannabidiol as a form of treatment were carried out. For this we used the following descriptors "Physical Violence" and "Psychic Violence" and

"Post-Traumatic Stress" and "Cannabidiol Therapy". The bibliographic search included the following databases: Web of Science, Medline, PubMed, Scielo and Scopus. The inclusion criteria were: empirical studies that refer to the treatment of victims of violence with post-traumatic stress with cannabidiol over a period of 15 years. As an exclusion criterion: articles that were not related to the theme, non-indexed publications were excluded. Thus, a total of 545 articles related to post-traumatic stress and cannabidiol were found and only 13 articles were selected to present the results of this study.

Due to the high methodological/clinical heterogeneity of the studies and the limited data available, we did not attribute ratings of strength of evidence or affirming studies related to phytocabinoid therapy in victims of violence who developed Post-Traumatic Stress, which may associate the use of cannabidiol and post-traumatic stress sufferers due to several factors.

RESULTS AND DISCUSSION

Due to the scarcity of studies found in the literature on the subject, we used the use of cannabidiol in the treatment of Post-traumatic Stress, including as a common complication in victims of violence, according to several studies, as observed in CHART 1 ((Vila-Verde, 2019);(Palladini, 2023).

Chart 1 - Articles used in the study. São Paulo - 2024

Author(s)	Title – Year/Journal	Synthesis
PALLADINI, M.C.	Indication of the use of cannabinoids. BrJP, v. 6, p. 142-145, 2023.	This review article explores the use of cannabinoids in the treatment of chronic pain, focusing on both natural and synthetic cannabinoids. The research analyzes the action of cannabinoids on CB1 and CB2 receptors and their effects on the body. The article discusses in detail the effects of various cannabinoids, such as CBD, THC, and CBN, and terpenes, highlighting their properties and potential medical applications. Finally, the study emphasizes the importance of additional research to better understand the benefits and risks of cannabinoid use in the treatment of chronic pain.
FERRO, L. *et al.*	Efficacy of cannabidiol use in the treatment of post-traumatic stress disorder: a systematic review. Brazilian Journal of Implantology and Health Sciences, v. 5, n. 3, p. 707-717, 2023.	In this article, the authors analyze the therapeutic potential of cannabidiol (CBD) in the treatment of anxiety, focusing on a narrative review of the scientific literature. The article highlights the growing importance of global mental health

		and the search for effective treatments for disorders such as anxiety and depression. CBD, derived from the Cannabis sativa plant, emerges as a promising alternative due to its anxiolytic properties and wide molecular interaction with the central nervous system. The reviewed research consistently indicates the positive effects of CBD in reducing anxiety in a variety of conditions, including post-traumatic stress disorder (PTSD) and social anxiety disorder. However, the complex relationship between CBD's plasma concentration and its therapeutic effects, along with the lack of detailed data on its pharmacokinetics, underscore the need for further clinical studies to validate its efficacy and safety in various psychiatric conditions. In this study, the broad therapeutic potential of CBD in other areas, such as schizophrenia and Parkinson's disease, as well as its role in modulating brain activity in areas related to anxiety and psychosis, is discussed.
BOLSONI, L.M.	Effects of Cannabidiol on anxiety induced by the recollection of the traumatic event in patients diagnosed with post-traumatic stress disorder. 2020. Doctoral Thesis. University of São Paulo.	It is a thesis where the author investigates the effects of cannabidiol (CBD) on anxiety induced by the recollection of traumatic events in patients with Post-Traumatic Stress Disorder (PTSD). The study analyzes the effectiveness of CBD in mitigating anxiety and cognitive impairments related to the remembrance of trauma, in addition to evaluating the influence of CBD on the reconsolidation of traumatic memory. The research uses an experimental protocol with two groups (CBD and Placebo), with participants diagnosed with PTSD, and collects data on anxiety, mood and physiological responses through scales and physiological measures before and after the recollection of the trauma. The author concludes that, although the results did not demonstrate a significant anxiolytic effect of CBD in the dosage used (300mg), the research brought to light important findings that deserve attention and complementary studies. One of the highlights of the research lies in the finding that CBD attenuated the "cognitive impairment" experienced by patients

		during trauma recall. This effect, which persisted even after a week of CBD administration, suggests a possible interference with the mechanisms of reconsolidation of aversive memory. The study offers an in-depth look at CBD's potential in treating PTSD, demonstrating the need for additional research to determine effective doses and specific application conditions. The research sets an important precedent for the development of new therapies for PTSD by exploring the mechanisms of action of CBD in the human mind and body.
SCHIER, A. R. de M. *et al*.	Cannabidiol, a component of Cannabis sativa, as an anxiolytic. Brazilian Journal of Psychiatry, v. 34, p. 104-110, 2012.	This study addresses the effects of Cannabidiol, a component of Cannabis sativa, as an anxiolytic", reviews the scientific literature on the anxiolytic properties of cannabidiol (CBD), a non-psychoactive compound present in the Cannabis sativa plant. The authors analyze animal and human studies, showing that CBD has anxiolytic effects, similar to medications used to treat anxiety. The article highlights that CBD acts on the serotonergic system, especially 5-HT1A receptors, and that additional studies are needed to determine the optimal therapeutic range for CBD and elucidate the exact mechanisms involved in its anxiolytic action. According to the authors, future studies should test clinical trials involving patients with different anxiety disorders, especially panic, obsessive-compulsive, social anxiety and post-traumatic disorders. In addition, since the actions of CBD are biphasic, the appropriate therapeutic window for each anxiety disorder has yet to be determined
RIBEIRO, G. R. *et al.*	Potential therapeutic use of cannabinoid–cannabidiol and delta-9-tetrahydrocannabinol compounds. Research, Society and Development, v. 10, n. 4, p. e25310413844-e25310413844, 2021.	This study investigates the therapeutic potential of the cannabinoid compounds, cannabidiol (CBD) and delta-9-tetrahydrocannabinol (THC), derived from *Cannabis sativa*. Through an integrative literature review, the authors examine the available research on the pharmacological effects of these compounds in various areas of health, including neuropsychic effects, relief for symptoms such as pain, inflammation, anxiety, and seizures. The article argues that, despite scientific advances demonstrating

		the benefits of using cannabinoid compounds, there is still a need for more studies to prove their effectiveness and safety.
VIANA, F. G. Al. *et al.*	Medical cannabis as a therapeutic conduct: an integrative review. Electronic Journal Medical Collection, v. 5, p. e10059-e10059, 2022.	This scientific article is an integrative review that analyzes the prescription pattern of cannabis compounds for different diagnoses. The authors conducted a literature search covering clinical trial articles, case-control studies, and cohort studies published between 2017 and 2022. The results show that medical cannabis is prescribed for a variety of conditions, including fibromyalgia, post-traumatic stress disorder, chronic insomnia, Crohn's disease, ulcerative colitis, chronic pain, and epilepsy, among others. The article highlights the use of tetrahydrocannabinol (THC) and cannabidiol (CBD) compounds as therapeutic agents, discussing their mechanisms of action and potential benefits, as well as their adverse effects and controversies surrounding their use. They conclude that The combination of tetrahydrocannabinol (THC) and cannabidiol (CBD) was the most prescribed in the studies analyzed. THC is the main psychoactive component of Cannabis, whereas CBD has therapeutic properties without causing the psychoactive effects. They emphasize that the dosage and type of Cannabis compound must be individualized for each patient, considering their medical history and the condition to be treated.
VILA-VERDE C. - 2019.	Effects of cannabidiol and 7-Nitroindazole on the contextual conditioned fear response after exposure of rats to intense stress: involvement of the nitrergic, serotonergic and cannabinoid systems. 2019. Doctoral Thesis. University of São Paulo.	This is a study that analyzes the impact of severe stress on rats and investigates the potential of cannabidiol (CBD) and Nitroindazole (7-NI) to attenuate the behavioral and molecular changes associated with post-traumatic stress disorder (PTSD). The method used was the experimental one where the effects of CBD using Wister rats weighing between 260 and 330 grams, the rats were exposed to stressful situations for a long period and after using CBD the researcher observed pain relief, anticonvulsant effects, antineoplastic potential, nausea relief, appetite stimulation, muscle relaxation, reduction of anxiety and induction of sleep. In addition to these benefits, it has also been shown to have a protective effect on neuroplasticity, which makes it

		valuable in the treatment of neuropathic pain. The study utilizes the unique prolonged stress model (SPS) to induce PTSD-like symptoms in rats, and examines the role of the nitrergic, serotonergic, and cannabinoid systems in modulating fear responses. The research concludes that both CBD and 7-NI show promising effects in preventing and reversing PTSD-related behaviors in rats, suggesting their therapeutic potential for the treatment of this condition.
COHEN-LOUCK, K.; Z.V.I, L.	A model for predicting post-traumatic stress disorder due to exposure to chronic political violence: big five personality traits, ego-resiliency, and coping. Journal of interpersonal violence, v. 37, n. 23-24, p. NP23241-NP23261, 2022.	This study examines the relationship between the Big Five Personality Traits (neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness), ego resilience, coping styles, and post-traumatic stress disorder (PTSD) symptoms in Israeli civilians exposed to chronic political violence. The authors argue that ego resilience and emotion-centered coping mediate the relationship between personality traits and stress symptoms. It was found that people with high levels of neuroticism were more vulnerable to PTSD due to low levels of ego resilience and a preference for emotion-centered coping strategies. The study also found that extraversion and openness to experience were positively associated with ego resilience, which was negatively associated with PTSD symptoms. These results suggest that ego resilience may play a protective role in the traumatic stress response.
BONACCORSO, S. *et al*.	Cannabidiol (CBD) use in psychiatric disorders: A systematic review. Neurotoxicology, v. 74, p. 282-298, 2019.	This article analyzes the efficacy and safety of using cannabidiol (CBD) in the treatment of psychiatric disorders, both as monotherapy and in combination with other treatments. The methodology used was the systematic review that is based on placebo-controlled clinical trials (RCTs) that evaluated the effect of CBD on a variety of psychopathological conditions, such as substance use, psychosis, anxiety, mood disorders, and other psychiatric disorders. The authors conclude that despite some studies indicating potential therapeutic effects for specific conditions, such as substance use disorders, chronic psychosis, and anxiety, solid evidence on the safety and efficacy of CBD for the treatment of

		psychiatric disorders is limited. They advocate the need for large-scale clinical trials to better evaluate the effectiveness of CBD in acute and chronic diseases, special categories, and to exclude any possible risk of abuse or adverse effects.
BERARDI, A.; SCHELLING, G.; CAMPOLONGO, P.	The endocannabinoid system and Post Traumatic Stress Disorder (PTSD): From preclinical findings to innovative therapeutic approaches in clinical settings. Pharmacological research, v. 111, p. 668-678, 2016.	This article looks at the impact of cannabinoids on the treatment of post-traumatic stress disorder (PTSD), exploring their influence on different phases of memory processing, from consolidation to traumatic memory retrieval and extinction. The authors examine animal and human studies, showing that cannabinoids can modulate the intensity of fearful memories and reactions, as well as potentiate the effectiveness of exposure therapy. The review discusses the potential clinical applications of cannabinoids in PTSD, focusing on the short- and long-term effects on different stages of traumatic memory. The article also mentions the ethical issues and the need for additional research to determine the safety and efficacy of cannabinoids in the treatment of PTSD.
BLESSING, E. M. *et al*.	Cannabidiol is a potential treatment for anxiety disorders. Neurotherapeutics, v. 12, n. 4, p. 825-836, 2015.	The article looks at the potential of cannabidiol (CBD), a component of Cannabis sativa, as a treatment for anxiety disorders. The authors examine evidence from preclinical, experimental human studies, clinical studies, and epidemiological studies. They conclude that CBD shows promise as a treatment for a variety of anxiety disorders, including generalized anxiety disorder, panic disorder, social anxiety disorder, obsessive-compulsive disorder, and post-traumatic stress disorder, particularly in acute doses.
ZUARDI, W. *et al.*	The anxiolytic effects of Cannabidiol (CBD). In: Handbook of cannabis and related pathologies. Academic Press, 2017. p. E131-E139.	This is a comprehensive review of the anxiolytic effects of cannabidiol (CBD), a non-psychoactive compound found in the Cannabis sativa plant. The article highlights studies conducted on animals and humans, demonstrating that CBD has anxiolytic properties in different models of anxiety, including conditioned fear, elevated maze, and social anxiety. The review discusses the potential pharmacological mechanisms by which CBD exerts its anxiolytic effects, including interaction with serotonin receptors (5-HT1A) and

		the endocannabinoid system. The article concludes that CBD shows great promise as a potential treatment for anxiety disorders.
MORINA, N. *et al*.	Psychological interventions for post-traumatic stress disorder and depression in young survivors of mass violence in low-and middle-income countries: meta-analysis. The British Journal of Psychiatry, v. 210, n. 4, p. 247-254, 2017.	This study looks at the effectiveness of psychological interventions to treat post-traumatic stress disorder (PTSD) and depression in children and adolescents who have survived mass violence in low- and middle-income countries. A meta-analysis was conducted using randomized controlled trials (RCTs) published up to July 2016.45 The study included participants under the age of 19, residents of shelters subject to mass violence, and who received psychological interventions for PTSD and/or depression. The data They were collected from a database such as PsycINFO, Medline and PILOTS, in addition to the analysis of reference lists. The quality of the studies was assessed using the Cochrane Collaboration tool to assess risk of bias. The data were analyzed using the random effects model to calculate the effect sizes (Hedges' g) The authors conduct a meta-analysis of 21 randomized controlled trials, finding that psychological interventions can be effective in the treatment of PTSD, The authors discuss the implications of their results for the implementation of mental health interventions in low- and middle-income countries, highlighting the need for low- and cost-effective interventions.

Source: Authors

Post-traumatic stress disorder (PTSD) is a common psychiatric condition in some cases, including victims of violence with a lifetime prevalence of 6.1% in the United States (Ferro *et al*, 2023); (Gomes, 2012).

PTSD is often characterized by a group of symptoms, including reliving traumatic events through intrusive memories and nightmares, avoidance of certain distressing factors, and changes in mood, arousal level, and cognition. Psychotherapy is the established first-line treatment (gold standard) for PTSD, however several medications have been used in psychiatry. Unfortunately, in victims of violence, this is a common consequence found in

especially individuals and situations of vulnerability (Karatas; Altinoz; Essizoglu, 2020); (Cohen-Louck, 2022); (Ribeiro *et al*, 2022).

The development of additional treatment agents is of critical importance, as current medications, including selective serotonin reuptake inhibitors, serotonin/norepinephrine reuptake inhibitors, antiadrenergic agents, and second-generation antipsychotics, have questionable efficacy and often have significant undesirable side effect profiles. Although the pathophysiology of PTSD has not yet been robustly described, several factors are suspected to contribute to the development of this disorder. One hypothesis relates PTSD to dysregulated memory retrieval through the process of reconsolidation and impaired extinction of aversive memories. Recent studies report that the endogenous cannabinoid system has been shown to play an important role in the process of aversive memory extinction through the activity of central CB1 receptors. We have 2 cannabinoid receptors in our body that are CB1 and CB2 receptors. CB1 receptors are mainly found in the brain and controlling the release of neurotransmitters in order to prevent excessive neuronal activity, calming and decreasing anxiety. CB1 receptors also play a role in reducing pain, inflammation, regulating movement, and controlling posture the CB1 receptor is located in several brain regions, such as the hippocampus, cortex, and cerebellum (Zanelati, 2010); (Schier *et al*, 2012).

This receptor is linked to inhibitory G protein, which, when activated, blocks adenylate cyclase, reduces cAMP (cyclic adenosine monophosphate) levels, and therefore inhibits calcium channels. These have essential activity for the process of neurotransmitter release, when activated, and their inhibition reduces GABAergic and glutamatergic release, in addition to leading to the process of attenuation of neuronal activity regulation of sensory perception, memory and cognitive function. CB2 receptors, on the other hand, when activated, produce anti-inflammatory effects in different experimental models of inflammation, including in processes of infectious origin. found mainly in the peripheral nervous system and immune cells, as its action is fundamental to control the immune system, modulation of inflammation, contraction and pain However, there are still no studies describing the effect of activation of this receptor on the inflammatory reaction induced by mycobacteria (Ibeas *et al*, 2015); (Vila-Verde, 2019).

Cannabidiol (CBD) has several physiological mechanisms of action, including serotonergic 5-HT1A agonism, adenosine and opioid receptor modulation, activation of the endogenous endocannabinoid system, antagonism at GPR55 receptors, and activation of transient receptor potential channels. CBD's action on 5-HT1A receptors may lead to neuroprotective, antidepressant, and anxiolytic benefits, although the mechanism of action

by which CBD decreases anxiety is still under study. CBD has been shown to improve anxiety alleviation through a sham public speaking test at doses of 300–600 mg in single-dose studies. Other authors suggest that lower doses of 10 mg/kg have a more anxiolytic effect than higher doses of 100 mg/kg in rats. Of particular interest for this study is the effect of CBD on the endogenous cannabinoid system. CBD has minimal affinity for CB1 and CB2 receptors, but indirectly causes activation of CB1 receptors by increasing the availability of endogenous endocannabinoids. Anandamide, on the other hand, is considered an endogenous cannabinoid that acts as a partial agonist at CB1 receptors. It can be deactivated by the enzyme fatty acid amide hydrolase (FAAH). CBD according to studies has shown important action on FAAH, thus increasing the availability of anandamide and causing activation of the endocannabinoid system (Zanelati, 2010); (Schier *et al*, 2012); (Elms *et al*, 2018).

Studies in rodent models have shown that pharmacological activation of the endocannabinoid system via CB1 receptor agonist agents leads to decreased behavioral response to aversive memories in rodent models through inhibition of memory reconsolidation and enhanced extinction. Studies suggest that agents such as CBD cause indirect activation of the endocannabinoid system and may be useful in the treatment of PTSD resulting from various events, including violence (Berardi.; Schelling; Campolongo, 2016); (Morino *et al*, 2016) (Vila-Verde, 2019); (Palladini, 2023).

Among the many cannabinoids in Cannabis sativa, CBD stands out for its effectiveness, at first as a treatment for epilepsy, and later as a treatment for chronic pain, being the most prescribed and with which the medical population is most familiar. CBD acts on CB1 receptors in different ways, as neutral antagonists, that is, they do not activate the receptor itself, but block the action of the agonist, preventing binding to the receptor. This is why CBD modulates the potentially toxic effects of THC. CBD also acts as an allosteric modulator, modulating the effects of the agonist on the CB1 receptor up or down. It induces a conformational change in the structure of the CB1 receptor that increases or decreases the activation of the receptor by the agonist. In this way, the potentially toxic effects of THC are modulated and therapeutic effects enhanced. (Zuardi *et al*, 2017); (Blessing *et al*, 2015); (Bolsoni *et al*, 2020); (Cohen-Louck, 2022); (Viana *et al,* 2022).

Among the effects of one of the components of Cannabis we have an action that is associated with improving sleep induction in patients who have difficulty sleeping, which occurs in many victims of violence who develop Post-Traumatic Stress. Its affinity for the CB1 receptor is weak, its psychoactive effect is negligible when compared to THC (25%) and it has an anxiolytic effect. Phytocannabinoids can contribute to the treatment of

numerous disease states. (Blessing *et al,* 2015): (Bolsoni *et al*, 2020). The therapeutic effects of medical cannabis were unfortunately only recognized in 2014, by the Federal Council of Medicine (CFM) authorized the use of medicines produced from CBD, but unfortunately in Brazil the costs are very expensive and not available to the majority of the population that needs it.

FINAL CONSIDERATIONS

We can conclude with this study that phytocannabinoids can contribute to the treatment of numerous pathological states, helping to rebalance the ECS - endocannabinoid system - where its receptors and its functions in maintaining human homeostasis have been allowing its use in various diseases and in recent years, with good results, especially in the treatment of Post-Traumatic Stress, in the case of this study, victims of violence. In this study, an important characteristic was observed; lack of scientific production related to the use of CBD in the treatment of victims of violence in a state of Post-Traumatic Stress, another question found is the concern of researchers in controlling the use and the correct way to use this therapy with a focus on the patient, taking care of the cannabinoid of choice based on the clinical condition, in addition to being a requirement for the Certificate of Laboratory Analysis of Cannabis-based products, as a way to ensure the correct substance for the patient and control of side effects and that the treatment based on phytocabinoids achieves the purpose indicated for its use. In short, cannabidiol has satisfactory effects on symptoms of post-traumatic stress, a common complication in victims of violence, especially in symptoms of anxiety, fear, pain and aversive memory.

Studies need to be done, in this area, few report the use of CBD in situations of Post-Traumatic Stress and none have found its indication in the physical and mental treatment of victims of violence. The authors suggest experimental studies be carried out in order to understand the effects of phytocabinoids in victims of violence who developed post-traumatic stress, due to their efficacy in situations of anxiety, sleep induction and pain.

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