Review

Application of *Cannabis Sativa L.* as a Therapeutic Alternative for Analgesia in Dental Treatments: An Integrative Literature Review

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Abstract: *Cannabis* has a medicinal tradition and is recognized for its potential in relieving pain, especially in dental contexts. This study investigates the analgesic properties of the plant, focusing on identifying the benefits and harms associated with its use. The objective is to evaluate the effectiveness of *Cannabis* compounds, particularly cannabinoids, in managing orofacial pain and dental conditions. An integrative literature review was conducted with a critical analysis of selected studies from the PubMed, BVS, and Google Scholar (gray literature) databases. The results indicate that both cannabidiol (CBD) and tetrahydrocannabinol (THC) have analgesic effects, showing improvements in dental pain, oral ulcers, and temporomandibular disorders, positioning themselves as a viable alternative to traditional analgesics. The use of cannabinoids may offer relief for orofacial pain and highlights their potential as a therapeutic resource in dentistry. Furthermore, the analgesic and anti-inflammatory effects of Cannabis open new possibilities for more effective and less invasive dental treatments, suggesting a promising alternative to conventional painkillers. However, more clinical studies and regulatory adjustments in Brazil are still necessary for the safe and accessible implementation of medical Cannabis use.

Keywords: *Cannabis*; Cannabinoids; Analgesia; Chronic pain; Facial pain.

1. Introduction

Cannabis sativa is a fast-growing plant from the Cannabaceae family, characterized as a flowering shrub. Also known as Cannabis or marijuana, it originates from Central Asia and is found in many tropical regions around the world [1]. More than 500 compounds have been isolated from the plant, of which approximately 100 are known as cannabinoids. These are described by a base structure of 21 carbon atoms composed of three rings: a cyclohexane (ring A), a tetrahydropyran (ring B), and a benzene ring (ring C) [2]. It is a widely discussed and influential plant, traditionally used for medicinal, industrial, and recreational purposes, classified as a single species—*Cannabis sativa*—with two subspecies: *C. sativa subsp. sativa* and *C. sativa subsp. indica* [3]. Additionally, the species *Cannabis ruderalis* should be mentioned [2]. The plant displays various features such as leaf shape, size, cannabinoid content, and flowering period. Plants with low cannabinoid content are referred to as hemp and are used to produce fiber and seed oil, while the therapeutic group is specific, with high cannabinoid concentrations [3].

Throughout history, Cannabis has been explored for its therapeutic properties. In 2014, the Brazilian Federal Council of Medicine (CFM), through Resolution No.

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2,113, authorized the use of cannabidiol for treating drug-resistant epilepsy in children and adolescents, assigning responsibility to legal guardians and prescribing physicians. In 2019, the CFM developed a guide categorizing therapeutic evidence as conclusive, moderate, or limited, addressing the indications for Cannabis use. Conclusive evidence includes chronic pain in adults, multiple sclerosis-related spasticity, and chemotherapy-induced nausea and vomiting; moderate evidence includes fibromyalgia, sleep disorders, and obstructive apnea; limited evidence applies to HIV-related appetite loss or weight loss, intracranial hemorrhage, and post-traumatic brain injury anxiety [4]. However, on October 11, 2022, a new resolution imposed stricter regulations on prescribing cannabidiol (CBD) for therapeutic purposes. Despite the risk of facing ethical implications from regional medical boards for off-label CBD prescriptions, physicians have been prescribing CBD-based medications to treat a variety of medical conditions such as Parkinson's disease, autism, chronic pain, Alzheimer's disease, and anxiety [5].

In 2022, the Brazilian Health Regulatory Agency (ANVISA) authorized healthcare professionals, including dentists, to prescribe medical Cannabis as an alternative for patients who consume a large number of medications or suffer from liver conditions that require low-toxicity drugs. Although Cannabis use is associated with stigma and psychoactive effects, its benefits cannot be overlooked [6,7]. In traditional medicine, chronic pain management is primarily carried out using analgesics, especially opioids. However, long-term use of these medications can lead to various health issues, including dependence, withdrawal syndrome, and tolerance development. Therefore, alternative therapies are being investigated as adjuvants to reduce opioid use and provide greater comfort and safety to patients [8].

According to Machado, Assis, and Rodrigues [9], CBD has the ability to interact with several endogenous receptors (endocannabinoids), actively participating in the pain treatment cascade [9]. Thus, CBD produces an analgesic effect by reducing neuronal excitability, making it a potential alternative for chronic pain relief. Based on this, the present study is motivated by the aim of investigating, through a literature review, the therapeutic use of Cannabis as an adjuvant in pain management and its indications in dentistry.

2. Materials and Methods

2.1 Study Design

This is an integrative literature review configured as a qualitative, exploratory study, preceded by a bibliographic search. It aims to establish knowledge on a specific topic by identifying, analyzing, and synthesizing the results of independent studies on the same subject. The integrative review allows the inclusion of studies with different designs, which makes it difficult to standardize a single critical evaluation tool. Nevertheless, efforts were made to ensure the methodological quality of the selected studies through the analysis of elements such as clarity of objectives, methodological adequacy, sample description, analyzed outcomes, and consistency of results with the study's proposal.

This approach aligns with the methodological principles of Souza, Silva, and Carvalho [10], who emphasize the flexibility of the integrative review compared to other types of reviews [10]. The research also follows a qualitative, descriptive approach. Furthermore, qualitative research manifests through the development of concepts based on facts, ideas, or opinions, and through the inductive and interpretive understanding attributed to the discovered data, in connection with the research problem [11].

2.2 Structure of the Integrative Literature Review

2.2.1 First Stage: Topic Identification and Selection of the Research Question

This phase plays a fundamental guiding role in the development of the study, constituting the crucial stage of the review. In this step, a research question is formulated, which must be clear and well-defined [10]. The guiding question formulated was: "What are the benefits and limitations of using cannabinoids derived from Cannabis sativa L., in comparison to conventional analgesics, for pain relief in dental conditions such as acute dental pain, temporomandibular disorder, and oral ulcers?"

2.2.2 Second Stage: Establishment of Inclusion and Exclusion Criteria

The databases used to construct the integrative review were: PubMed, Virtual Health Library (VHL), and gray literature via Google Scholar. Articles published from 2019 to 2024 in English, Spanish, and Portuguese were considered, provided they were available in full text for free. The following descriptors were used: "Cannabis," "Cannabinoids," "Medical marijuana," "Analgesia," "Chronic pain," "Facial pain," "Dentistry," and "Toothache," using the Boolean operators "AND" and "OR" for the search strategy.

The time frame from 2019 to 2024 was chosen due to the scientific and clinical advancements related to the medical use of Cannabis, particularly in dentistry, which intensified during this period. These include higher methodological rigor, product approvals by the FDA and ANVISA, and a greater number of randomized clinical trials. Older studies were excluded as they reflect regulatory and technological contexts inconsistent with current practice.

Specific inclusion criteria were defined, considering case reports and clinical trials involving patients with conditions such as orofacial pain, trigeminal neuralgia, temporomandibular disorder (TMD), chronic pain, dental pain, and other dental conditions. Studies involving pediatric patients and those in which cannabinoid therapy was not intended for analgesia or dental disorders, as well as duplicate articles, were excluded. Recognizing the particularities of each database, distinct search strategies were developed for each. These strategies were organized into Table 1 to improve the clarity and organization of the study selection process.

Table 1: Search strategy for the studies in the databases.

Pubmed	(Medical marijuana OR cannabinoids) AND Dentistry
BVS	(Cannabis OR cannabinoids) AND Dentistry
Google Scholar	(Cannabis OR cannabinoids) AND analgesia AND (chronic pain OR facial pain) AND Dentistry AND toothache

2.2.3 Third Stage: Data Collection

At this stage, a detailed analysis of the titles, abstracts, and keywords of each retrieved article was performed to identify the most relevant and appropriate studies for the development of the work. In cases where this information was insufficient, accessing the full text for a more in-depth reading was recommended [12]. Each analyzed study provided information such as participant definitions, adopted methodology, sample size, methods of variable measurement, analysis techniques, and theoretical frameworks used [11]. After this stage, a flowchart was created showing the studies selected for the integrative review (Figure 1).

Figure 1: Flowchart of article selection.
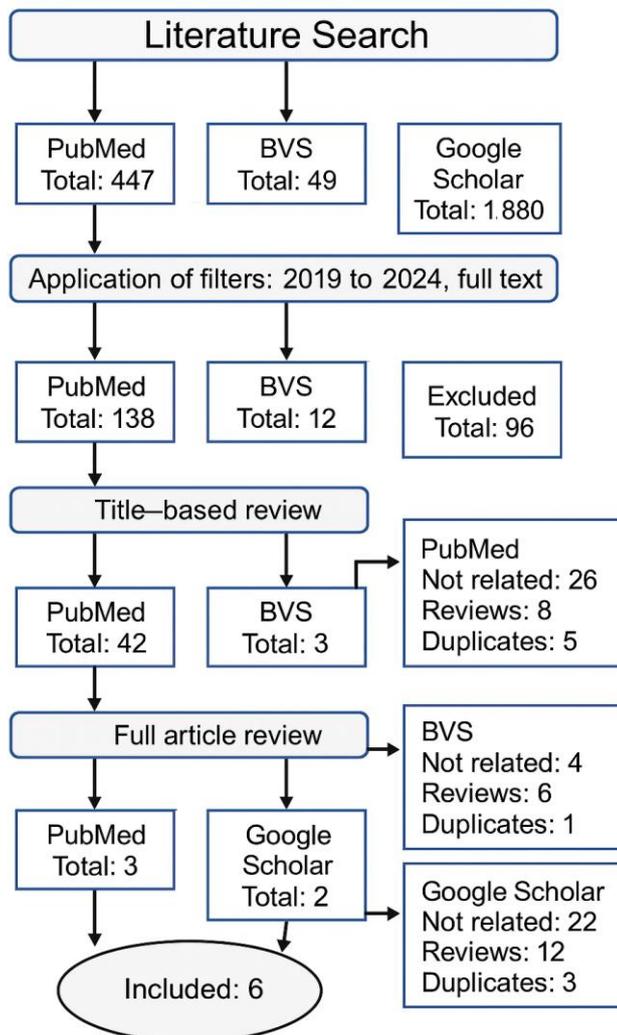
3. Results

After a thorough analysis of titles, abstracts, and full texts, 6 articles were selected: 3 from PubMed, 1 from BVS, and 2 from Google Scholar, as shown in Table 2.

Table 2: Articles selected for the Integrative Review.

Reference	Study Type	Objective	Population / Model	Main Results
[13]	Randomized, double-blind, placebo-controlled clinical trial	To evaluate the analgesic efficacy of pure CBD (Epidiolex) in acute dental pain and its impact on bite force	61 patients with irreversible pulpitis or pulp necrosis. Three groups: CBD 10 mg/kg, CBD 20 mg/kg, and placebo	Average pain reduction of 73% within 180 minutes (VAS). Improved bite force. Mild adverse effects and no significant psychoactive effects.
[14]	Randomized, double-blind clinical trial with three groups	To evaluate the safety and efficacy of topical 0.1% CBD for recurrent aphthous ulcers (RAU)	69 patients with RAU. Three groups: CBD 0.1%, triamcinolone 0.1%, and placebo	CBD significantly reduced pain and lesion area from day one. No adverse effects. High patient satisfaction and improved quality of life.

Reference	Study Type	Objective	Population / Model	Main Results
[15]	Preclinical animal study (rats)	To evaluate the effects of CBD and β-caryophyllene (β-CP) on inflammation and pain caused by pulp exposure	Rats with induced pulpitis, treated with CBD (5 mg/kg) and β-CP (30 mg/kg)	β-CP was more effective in reducing pain and inflammation. CBD reduced inflammatory markers but not pain significantly. Combination potentiated analgesic and anti-inflammatory effects.
[16]	Randomized, double-blind clinical trial with in vitro analysis	To evaluate the anti-inflammatory effect of CBD on gingival fibroblasts and patients with periodontitis	90 patients with periodontitis (three groups: CBD, placebo, chlorhexidine). In vitro study with HGFs	CBD reduced IL-6 and IL-8. Improved gingival index and bleeding. Reduced P. gingivalis. No adverse effects. Significant antimicrobial and anti-inflammatory potential.
[19]	Prospective, open-label, single-arm pilot study	To evaluate the efficacy of Bediol® (CBD 8% + THC 6.3%) in Burning Mouth Syndrome (BMS)	17 elderly patients with BMS, unresponsive to other treatments	Significant pain reduction from week 4, maintained until week 24. Well tolerated. Mild effects such as dizziness and constipation.
[18]	Randomized, double-blind, parallel clinical trial	To compare the efficacy of CBD cream and vaporizer with ibuprofen in temporomandibular disorder (TMD)	36 patients with chronic TMJ pain (three groups: ibuprofen, CBD cream, CBD vaporizer)	CBD vaporizer showed highest efficacy (94.95% pain reduction). Cream: 88.89%. Ibuprofen: 80.44%. All treatments combined with physiotherapy.

In the study by Chrepa et al. [13], the efficacy of pure cannabidiol (the medication Epidiolex) as an analgesic was examined in adult patients with acute dental pain, diagnosed with conditions such as irreversible pulpitis or pulp necrosis. Participants were randomized into three groups: one received CBD at 10 mg/kg (n=20), another at 20 mg/kg (n=20), and a control group received a placebo (n=21). The results revealed that CBD provided significant pain reductions compared to placebo. Median pain scores on the visual analog scale (VAS) showed an average reduction of up to 73% from baseline, with maximum relief achieved at 180 minutes. Besides pain relief, both CBD groups also demonstrated a significant increase in bite force, suggesting improvements in masticatory function. These results indicate that pure CBD may be an effective alternative to traditional analgesics such as ibuprofen and oxycodone, with a favorable safety profile and minimal side effects. The study suggests that a single dose of CBD can provide over 70% analgesia in patients with emergency dental pain, while improving bite force, contributing to a safer approach in pain management [13].

A randomized, double-blind study by Umpreecha et al. [14] investigated the efficacy of topical 0.1% CBD in treating recurrent aphthous ulcers (RAUs) in 69 patients, randomly divided into three intervention groups: 0.1% CBD (n=23), 0.1% triamcinolone acetonide (TA) (n=22), and placebo (n=24). Results showed that CBD was effective in reducing the size of pseudomembranous ulcers and the erythematous border, providing rapid and consistent pain relief. The CBD group reported pain reduction from the first day, whereas the placebo group experienced an initial increase in pain, with improvement only from day three. Furthermore, CBD use was well tolerated, with no systemic adverse effects, allergies, or changes in clinical tests, standing out as a safe alternative compared to topical steroids, which may present

potential side effects. Participants using CBD reported high satisfaction and significant improvements in quality of life. These findings reinforce the potential of CBD as a promising and safe complementary treatment for recurrent aphthous ulcers (RAUs), offering effective relief with a lower risk of adverse reactions compared to more invasive conventional therapies [14].

Laks et al. [15] examined the effects of β-caryophyllene (β-CP) and CBD, cannabis-derived compounds, on pain and inflammation associated with pulpitis in a rodent model. Rats received doses of β-CP (30 mg/kg) or CBD (5 mg/kg) one hour before pulp exposure, followed by subsequent doses after 24 hours and on days 3, 7, and 10 post-procedure. Pain was assessed through mechanical allodynia using Von Frey filaments at baseline and on days 1, 7, and 14, while gene expression of AIF (apoptosis-inducing factor) and CCL2 (chemokine ligand 2) in trigeminal ganglia was measured at day 15. Results indicated that pulp exposure caused persistent ipsilateral allodynia, while β-CP significantly reduced this pain and expression of AIF and CCL2 genes, showing consistent anti-inflammatory effects and modulation of macrophage and microglia activation. CBD, however, only attenuated AIF expression without significant reduction in pain or CCL2, suggesting that its efficacy may depend on dosage adjustments. This indicates that β-CP holds potential for orofacial pain and inflammation, whereas the effects of CBD require further study to confirm efficacy [15].

In the study by Jirasek et al. [16], the effects of cannabidiol and phytocannabinoids on human gingival fibroblasts (HGFs) and their application to oral health in patients with periodontitis stages I to IV were evaluated. Initially, HGFs were treated with 1 µg/mL lipopolysaccharide (LPS) to induce inflammation, with the anti-inflammatory agent indomethacin used as a positive control. The results showed that treatment with 0.5 µM CBD reduced levels of inflammatory interleukins IL-6 and IL-8, although this reduction was not statistically significant. In the clinical phase, 90 patients aged between 35 and 65 years, with ≥16 natural teeth and no evident physical or mental disabilities, were included. Patients with chronic diseases, bleeding risk, immunosuppression, pregnant women, smokers, and recent antibiotic users were excluded [16].

Patients were classified into three groups (30 per group): Group A (dental gel without CBD and toothpaste without CBD), Group B (dental gel with 1% w/w CBD and toothpaste containing 1% w/w CBD), and Group C (Corsodyl dental gel containing 1% chlorhexidine digluconate w/w and toothpaste without CBD). The dental gel was applied (on days 14, 28, and 56) to all periodontal pockets (5 minutes exposure), and the toothpastes were provided for patients to use instead of their regular oral hygiene products and monitored for oral hygiene during a 56-day follow-up. A full-mouth periodontal examination was conducted by a calibrated examiner on days 0, 14, 28, and 56 after treatment initiation. Group B showed significant improvements in gingival indices, including a reduction in the modified gingival index (MGI), with the CBD group having the greatest decrease. The gingival bleeding index (GBI) also improved. Additionally, there was a reduction in Porphyromonas gingivalis counts in patients treated with CBD compared to control groups. The use of dental gel and toothpaste containing CBD may benefit periodontal health, with positive effects observed across several oral health indices throughout the study and no adverse effects reported. The presence of the cannabinoid receptor CB2 in HGFs suggests that phytocannabinoids may help modulate the inflammatory response in the oral cavity, indicating CBD's potential as a promising therapeutic option for patients with periodontitis [16].

Regarding clinical applicability, cannabis-derived compounds can be administered topically (gels, toothpastes), sublingually, by inhalation, or orally, as demonstrated in clinical studies with CBD for myofascial pain and temporomandibular dysfunction. The choice of route depends on the clinical condition, pain intensity, and

patient profile. For temporomandibular dysfunction, topical/intraoral use showed promising results, while oral ulcers responded well to topical formulations [17].

According to Martinez et al. [18], the use of CBD cream and vaporizer in treating pain associated with temporomandibular dysfunction (TMD) was compared to ibuprofen efficacy. Thirty-six male patients were included, divided into three groups: one receiving ibuprofen (600 mg), another using CBD cream, and the third using CBD vaporizer, with 12 patients per group. During the four-week treatment, participants underwent weekly physiotherapy sessions (with the same professional) and periodic assessments of pain and quality of life. The CBD vaporizer proved to be the most effective option, promoting a 94.95% reduction in pain by the end of the study, especially notable from the first week [18]

The CBD cream also showed good results, achieving an 88.89% reduction in pain, with a more progressive response that became noticeable from the third week onward. Ibuprofen, although effective, achieved a reduction of 80.44%, positioning it as the least potent option among the three. Physiotherapy enhanced the analgesic effects of the CBD treatments and was indicated as an effective complement to reduce muscle tension in the temporomandibular joint (TMJ) area and relieve pain. The data suggest that CBD, both in topical and vaporized forms, is a promising alternative for managing chronic temporomandibular pain, providing longer-lasting relief and improving patients' quality of life. This highlights CBD, especially vaporized, as a faster and more effective option than ibuprofen for treating TMD, emphasizing its potential as a viable and safe therapeutic solution [18].

The study by Gambino et al. [19] evaluated the efficacy of the Bediol® formulation, a combination of THC (6.3%) and CBD (8%), in patients with Burning Mouth Syndrome (BMS) over 24 days. Pain intensity was measured using tools such as the Visual Analog Scale (VAS) and the McGill Pain Questionnaire, revealing significant pain reduction both at the end of treatment and throughout 24 weeks. The dosage was adjusted according to the schedule: 5 drops twice daily for 5 days, 10 drops twice daily for 5 days, 15 drops twice daily for 5 days, and 20 drops twice daily for 13 days. Mild and transient side effects like dizziness and headache did not require treatment discontinuation. Assessments were conducted at baseline, after four weeks, and again at 12 and 24 weeks, showing a continuous reduction in pain scores and oral impact. These results demonstrate the potential of medicinal cannabis as an effective alternative for BMS patients who did not respond to conventional treatments, with good tolerability, especially in elderly patients who improved without symptom worsening [19].

Analysis of the reviewed studies indicates growing evidence supporting the efficacy of cannabidiol (CBD) as a therapeutic alternative for analgesia, showing promising results in various clinical contexts. The findings by Chrepa et al. [13] demonstrate that pure CBD (Epidiolex) provides significant relief in patients with acute dental pain, with an average pain reduction of up to 73%. This result is particularly relevant when compared to the limited effects of traditional analgesics like ibuprofen [13]. Additionally, studies by Umpreecha et al. [14] and Laks et al. [15] reinforce CBD's efficacy, showing that topical application of the cannabinoid not only reduced pain in recurrent aphthous ulcers but also had an anti-inflammatory effect in a pulpitis model [14,15]. This anti-inflammatory effect is supported by David et al. [20], who highlighted CBD's properties in preventing periodontal destruction and modulating the inflammatory response, underscoring the potential usefulness of the cannabinoid in various oral conditions [20].

The results of Martinez et al. [18] corroborate this perspective by demonstrating that CBD vaporizer use was highly effective in reducing pain associated with temporomandibular dysfunction, achieving a 94.95% pain reduction [18]. This efficacy can be complemented by observations from Gambino et al. [19], who presented the Bediol formulation (THC and CBD) as a viable alternative for burning mouth syndrome, suggesting that cannabinoid combinations may maximize analgesic effects

and minimize side effects [19]. On the other hand, the study by Laks et al. [15] brought to light an interesting comparison between the effect of β-caryophyllene (β-CP) and CBD in animal models [15]. The study indicated that while β-CP demonstrated a more robust anti-inflammatory effect, CBD might require dosage adjustments to achieve significant results. This observation suggests that although both compounds can be beneficial, CBD's efficacy may depend on a more specific usage context, such as dosage and route of administration.

Research from Tambeli et al. [21] showed that the use of nabiximols, a mixture of CBD and THC, relieved trigeminal pain in patients with multiple sclerosis. These findings suggest that the endocannabinoid system plays a crucial role in modulating orofacial pain, highlighting the need for further research on the interaction between different cannabinoids and their clinical applications [21].

Regarding periodontal health, Jirasek et al. [16] reported that the use of CBD-containing toothpaste improved gingival indices in patients with periodontitis, aligning with the idea that CBD not only acts as an analgesic but also modulates the inflammatory response [16]. These results are encouraging and open new possibilities for CBD use in oral health, especially considering that cannabinoids were shown to be more effective in reducing bacterial dental plaque than conventional oral hygiene products, as indicated by Stahl and Vasudevan [22].

The analyzed studies demonstrate the potential of cannabidiol (CBD) in managing pain across various dental conditions. Chrepa et al. [13] investigated the use of pure CBD (Epidiolex®) in patients with acute dental pain, observing an average 73% reduction in pain intensity and significant improvement in bite strength compared to placebo [13]. These results suggest that CBD may be as effective as traditional analgesics like ibuprofen but with fewer side effects. Complementarily, Martinez et al. (2024) compared CBD vaporizer, topical cream, and ibuprofen in patients with temporomandibular dysfunction (TMD), demonstrating that inhaled CBD provided faster and longer-lasting relief, with up to a 94.95% reduction in pain, reinforcing the importance of the administration route in therapeutic efficacy [18].

Beyond odontogenic pain and TMD, CBD has also shown promise in other inflammatory conditions of the oral cavity. Umpreecha et al. [14] evaluated the efficacy of 0.1% topical CBD in treating recurrent aphthous ulcers, noting significant pain improvement as early as the first day of use, surpassing the placebo group and comparable to triamcinolone but with fewer adverse effects [14]. Similarly, Gambino et al. [19] analyzed the use of the Bediol® formulation (CBD + THC) in patients with burning mouth syndrome, reporting sustained pain relief over 24 weeks [19]. These findings indicate that isolated CBD or combined cannabinoids may be useful in treating inflammatory and painful oral mucosal lesions, with good tolerability, including in elderly patients.

In the field of periodontics, Jirasek et al. [16] observed that the use of 1% CBD gel and toothpaste promoted significant improvements in gingival indices and reduction of Porphyromonas gingivalis, without adverse events. Although the reduction in inflammatory cytokines IL-6 and IL-8 in fibroblasts was not statistically significant, the presence of CB2 receptors in these cells suggests relevant anti-inflammatory potential [16]. These data align with Stahl and Vasudevan [22], who demonstrated the superior efficacy of cannabinoids compared to conventional oral hygiene products in reducing bacterial plaque, suggesting additional benefits of CBD in biofilm control, pain, and periodontal inflammation [22].

In animal model studies, Laks et al. [15] compared the effects of CBD and β-caryophyllene (β-CP) in induced pulpitis in rodents [15]. β-CP proved more effective in reducing allodynia and modulating inflammatory genes (AIF and CCL2), while CBD had limited effect, suggesting its efficacy may depend on dosage, route of administration, or specific clinical condition. Complementarily, research by Tambeli et al. [21] demonstrated that combinations of CBD and THC, such as nabiximols, had positive effects in controlling trigeminal pain, including in patients with multiple sclerosis,

reinforcing the relevance of synergy between phytocannabinoids for modulating orofacial pain [21].

Despite observed advances, the analyzed studies present important limitations, such as small sample sizes, methodological heterogeneity, and lack of standardization in formulations, dosages, and administration routes. The scarcity of high-quality randomized clinical trials compromises the robustness of the available evidence [23], which requires caution when extrapolating findings to clinical practice. Nonetheless, the available data are promising and provide a solid basis for developing experimental clinical protocols, conducted by interdisciplinary committees, prioritizing safety, progressive titration, and individualized treatment [24].

In view of the above, cannabidiol exhibits a favorable therapeutic profile for various dental conditions, with efficacy comparable or superior to conventional drugs in some contexts. However, regulatory challenges and the need for scientific validation still represent obstacles to its full incorporation into dentistry. Therefore, it is necessary to advance robust clinical trials, specific guidelines, and greater integration of this topic into public oral health policies, which will be further addressed in the final considerations section.

3. Conclusion

The evidence gathered in this review indicates that derivatives of *Cannabis sativa L.*, especially cannabidiol (CBD), present significant therapeutic potential in managing pain and inflammation in various dental conditions such as acute dental pain, temporomandibular dysfunction, oral ulcers, periodontitis, and burning mouth syndrome. The analyzed studies demonstrate that CBD can offer efficacy comparable to, and in some cases superior to, conventional drugs, with a lower incidence of adverse effects. The variability of administration routes (topical, oral, sublingual, inhalation) and the safety profile across different age groups strengthen its value as a complementary alternative in the dental clinical context.

However, the consolidation of CBD use in dentistry still requires overcoming important challenges, such as the scarcity of robust randomized clinical trials, lack of standardization in formulations and dosages, and the limited availability of regulated products for dental use in Brazil. Therefore, it is essential to invest in new research with greater methodological rigor, as well as promote regulatory advances that allow the ethical, safe, and effective integration of medicinal cannabis into dental practices. In doing so, it will be possible to offer patients more modern, personalized, and evidence-based therapeutic approaches.

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