

A Promising Frontier: *Cannabis*'s Medicinal Prospects in Alagoas, Brazil

Marvin Paulo Lins ^{1,2,*}, Paulo Fernando da Silva Santos-Júnior ³, José Irajá Macêdo de Oliveira Martins Costa ⁴, Elton Henrique Alves de Oliveira ⁵, Edeildo Ferreira da Silva-Júnior ⁶, Olagide Wagner de Castro ⁷, Igor Santana de Melo ⁷

- ¹ Laboratory of Immunology, Department of Basic Sciences in Health, Faculty of Medicine, Federal University of Mato Grosso, Cuiabá, Brazil.
- ² Brazilian National Institute of Science and Technology on Neuroimmunomodulation (INCT-NIM), Oswaldo Cruz Institute, Oswaldo Cruz Foundation, Rio de Janeiro, Brazil.
- ³ Pharmaceutical Sciences Graduate Program (PPGCS), Federal University of Sergipe, São Cristóvão, Brazil.
- ⁴ Inspection Management, Regional Council of Pharmacy of the State of Alagoas, Maceió, Brazil.
- ⁵ Postgraduate Program in Intellectual Property Science, Federal University of Sergipe, São Cristóvão, Brazil.
- ⁶ Group of Research on Biological Chemistry, Institute of Chemistry and Biotechnology, Federal University of Alagoas, Maceió, Brazil.
- ⁷ Laboratory of Neuropharmacology and Integrative Physiology, Institute of Biological and Health Sciences, Federal University of Alagoas, Maceió, Brazil.

* Correspondence: marvin.lins@ufmt.br.

Citation: Lins MP, Santos-Júnior PFS, Costa JIMO, Oliveira EHA, Silva-Júnior EF, Castro OW, Melo IS. A Promising Frontier: *Cannabis*'s Medicinal Prospects in Alagoas, Brazil. Brazilian Journal of Clinical Medicine and Review.2025;Jan-Dec;03(1):bjcmr24.

<https://doi.org/10.52600/2763-583X.bjcmr.2025.3.1.bjcmr24>

Received: 30 November 2024

Accepted: 24 December 2024

Published: 27 December 2024

Abstract: In 2022, the state of Alagoas, located in the northeastern region of Brazil, published new legislation regarding the medicinal use of *Cannabis*, which includes provisions for medical prescription, support for scientific research, continued education for healthcare professionals, and public events on the topic. Therefore, this study aimed to conduct a survey within the state of Alagoas, focusing on local scientific publications, the number of *Cannabis*-based medications prescribed, the development of clinical research and patents involving *Cannabis*, and initiatives for public events on the subject. The findings revealed that scientific research remains limited to publications in regional journals, with minimal international reach. Additionally, the number of prescribed and sold medications in Alagoas could not be obtained due to a failure in the national registration system. There is no development of clinical research or patents in Alagoas involving *Cannabis*. Lastly, there is a significant number of initiatives aimed at informing the non-specialized population and patients about the topic. Thus, our study showed that the local legislation is promising for the therapeutic use of *Cannabis*, but the state of Alagoas has yet to fully embrace all the possibilities authorized by the law.

Keywords: Cannabidiol; Tetrahydrocannabinol; Public Health; Patents; Medicinal *Cannabis*.



Copyright: This work is licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0).

1. Introduction

The regulation of medicinal *Cannabis* and its derivatives must be firmly grounded in scientific evidence, adhering to best medical practices and in strict compliance with both national and international legal frameworks [1]. Furthermore, it is imperative to prioritize patient safety through the establishment of unambiguous guidelines governing responsible prescription, distribution, and administration, ensuring that healthcare providers are equipped with the necessary knowledge and resources to effectively manage and monitor treatment outcomes while minimizing risks [2].

In recent years, Brazil's legal landscape concerning this matter has undergone significant changes, although it still lags many Latin American and European Union nations in

terms of legal authorizations for medicinal use [3]. Notably, Alagoas, one of Brazil's states, took a pioneering step towards advancing pharmaceutical technology and innovation on November 8th, 2022, with the enactment of State Law No. 8754. This legislation provided a robust legal foundation for the provision of healthcare treatments involving *Cannabis* and the facilitation of scientific research into its medicinal applications and industrial utility.

The State of Alagoas, situated in the Northeast region of Brazil, covers an area of 27,830 km² and is home to approximately 3.3 million inhabitants. Its Human Development Index (HDI) is classified as regular/moderate, with a score of 0.684. Alagoas boasts a healthcare infrastructure that includes 3,813 health establishments, comprising 47 hospitals and emergency care units, and a workforce of over 6,000 registered doctors. However, despite having 1.84 doctors per thousand inhabitants, more than 80% of them are concentrated in the capital city, Maceió [4].

Since 2022, medical professionals in Alagoas have been granted legal authorization to prescribe *Cannabis*-based medications for the treatment of specific medical conditions. For this reason, we conducted a survey of demands related to *Cannabis* within the state of Alagoas, regarding local scientific publications, the number of *Cannabis*-based medications prescribed, the development of clinical research and patents involving *Cannabis*, and public events on the subject. With this information, we aimed to evaluate the scope and potential of State Law No. 8754/2022 and the reality of the medical, scientific, and social fields in the state of Alagoas.

2. The State Law 8.754/2022

Law No. 8754/2022 serves three overarching objectives, all applicable within the confines of the State of Alagoas. The primary aim is to ensure the fundamental human right to health by providing access to treatments utilizing medicinal *Cannabis* and its derivatives. These medicinal preparations may take various forms, including oils, resins, extracts, syrups, and similar formulations, containing varying concentrations of tetrahydrocannabinol (THC) and cannabidiol (CBD). In addition, patients and their families will receive support through public guidance and assistance services for the appropriate and responsible use of *Cannabis* for medicinal purposes.

Regarding this first objective, several limitations or difficulties can be identified due to the current situation in the state of Alagoas. Although public assistance is guaranteed, there may be challenges in implementing adequate guidance and support programs due to a lack of infrastructure, training of healthcare professionals, and sufficient resources to cover all the needs for patient guidance and monitoring, or even the reliance on limited scientific evidence.

The second objective of Law No. 8754/2022 is to promote scientific research and technological advancement in the field of medicinal *Cannabis*. This is achieved through financial backing and the promotion of scientific events centered on this subject matter. To facilitate this, the Research Support Foundation of the State of Alagoas (FAPEAL, in Portuguese) extends its support to public educational and research institutions, as well as technological and innovation establishments. The goal is to enhance public health services, stimulate job creation, and boost financial income by fostering innovation in this field.

Regarding this second objective, there may be a gap between the theoretical advances made in research and their practical application in healthcare services, or even a lack of guarantees for equitable distribution of resources, which could result in unequal access to funding. Similarly, other difficulties could include resistance to the adoption of new technologies by professionals in the field and the need for continuous training.

The third objective of Law No. 8754/2022 centers on the promotion of health education. This extends to both professionals directly involved in the treatment process and the general population. Consequently, the Executive Government of Alagoas is tasked with orchestrating educational campaigns accessible to the entire populace. These campaigns include lectures, seminars, and symposiums addressing the subject of medicinal *Cannabis*.

Furthermore, the law mandates the continuous training of healthcare managers and professionals in matters related to the medicinal use of *Cannabis*-based products. This comprehensive approach aims to disseminate knowledge and foster a deeper understanding of the medicinal applications of *Cannabis* within the healthcare sector and among the broader public.

Despite the requirement for continuous training for healthcare managers and professionals, there may be difficulties in ensuring that all professionals are adequately trained. Similarly, even with the promotion of health education, there may be resistance from healthcare professionals in adopting the use of medicinal *Cannabis* due to prejudices or a lack of understanding about the benefits and safety of the treatment. These are the challenges that the final part of this law may face.

Recently, another state law, No. 8815, was enacted on January 20th, 2023, instituting the State Day of Consciousness on the Medicinal Use of *Cannabis*. This day will be commemorated annually across the entire territory of Alagoas on June 13th. The significance of this date lies in its connection to an unprecedented event: the convening of a special session by the Legislative Assembly of Alagoas to deliberate on the theme of medicinal *Cannabis*. Law No. 8815 serves as a complementary measure, aligning with the third objective of Law No. 8754/2022. This objective seeks to raise awareness and reduce misconceptions surrounding the beneficial effects of *Cannabis* use for healthcare purposes in Alagoas. To synthesize and summarize Law No. 8754/2022, Figure 1 was created. After this detailed analysis of the state law's text, its promising points, and especially the potential limitations it will face, we remain focused on surveying the local scientific production in Alagoas related to *Cannabis* in the healthcare field, considering that the first objective of the law is to promote this.

Figure 1. Objectives of State Law 8754/2022, which regulates the medicinal prescription of *Cannabis* in Alagoas, Brazil



3. Demands for Scientific Research in *Cannabis* in Alagoas/Brazil

To evaluate the current research landscape on *Cannabis* in the State of Alagoas, we conducted a comprehensive bibliographical survey that included studies and web-based news articles published in recent years. Notably, this survey focused exclusively on research contributions and insights from researchers and professors based in Alagoas, with a particular emphasis on the healthcare field. Political and social aspects related to *Cannabis* use were intentionally excluded from our analysis. The platforms Scielo, PubMed, and Google Scholar were used with the keywords "*Cannabis*" and "Alagoas." Additionally,

open search engines such as Google, Bing, and Yahoo were also utilized. Our investigation identified a substantial body of studies and research efforts, primarily led by the Federal University of Alagoas (UFAL). These initiatives encompass a broad spectrum of fields, particularly Chemistry, Biology, and Veterinary Science. Additionally, we discovered significant scientific contributions from the State University of Health Sciences of Alagoas (UNCISAL) and private educational institutions, such as Estácio Faculty, Tiradentes University Center, and Uninassau University.

Between 2020 and 2024, several narrative and literature reviews were conducted, exploring the medicinal use of *Cannabis* and its effects on the nervous and immune systems. These studies addressed both health and pathological contexts while also emphasizing the advancement of professional knowledge in this field. These studies were carried out by researchers from Alagoas and encompassed diverse areas, including the provision of care for oncology patients [5], the effects of chronic marijuana use [6], applications within veterinary clinics [7], and oral therapy [8]. Regrettably, most of these valuable contributions were published in journals with primarily regional influence and limited international visibility. As a result, their reach was restricted, both in terms of readership and engagement within the global scientific community. Table 1 presents the findings of these scientific articles published by researchers from Alagoas.

Table 1. Scientific articles on *Cannabis* published by researchers from the state of Alagoas.

Year	Main contributions	Reference
2024	<i>Cannabis</i> and its cannabinoids have been shown to exert immunosuppressive effects on the thymus, interfering with thymocyte development, thymic cellularity, and impaired immune function	[9]
2024	Fruit flies exposed to drugs of abuse exhibit molecular, morphological, behavioral, and survival changes that are dependent on the dosage	[10]
2024	CBD may help reduce disruptive behaviors and improve social interaction, with few reported side effects	[11]
2024	The therapeutic use of <i>Cannabis</i> and its derivatives in veterinary medicine appears promising across various fields. However, the specific effects, as well as the appropriate doses and concentrations for different conditions, still need to be clarified	[12]
2024	The use of <i>Cannabis</i> derivatives to treat pain did not demonstrate superiority over conventional treatments or placebo	[13]
2024	Greater evidence should be formulated for the use of <i>Cannabis</i> , as its side effects, especially in the long term, because it may be the cause of harm to the patient	[14]
2023	Studies to assess the efficacy and safety of CBD as a therapeutic option for treating MPX symptoms are lacking. Further high-quality trial evidence is needed	[15]
2022	It is necessary to carry out a greater number of clinical trials with oral <i>Cannabis</i> , in the various existing formulations, to better understand its pharmacokinetics, pharmacodynamics, therapeutic potential and its adverse effects.	[8]
2021	The focus is on delta-9-tetrahydrocannabinol and cannabidiol, as they bind to existing receptors in the endocannabinoid system with the aim of improving the quality of life for patients affected by cancer	[5]
2020	The treatment for canine intoxication cases is based on reducing absorption, supportive therapy tailored to the clinical symptoms present, and the specific characteristics of <i>Cannabis</i> intoxication	[7]

2019	Cognitive impairment, exacerbation of disorders, and memory deficits in <i>Cannabis</i> users	[6]
2018	Foreign countries are the sole applicants at the Brazilian National Institute of Industrial Property (INPI) for processes related to the pharmaceutical purposes of cannabidiol	[16]
2018	The promise of cannabidiol for preventing or easing SE-induced neurodegeneration, neuroinflammation, cognitive and mood impairments, and the spontaneous recurrent seizure.	[17]

For that, it is evident that the demand for research in this area predates the enactment of Law No. 8754/2022. This historical context highlights the importance of recognizing and leveraging the wealth of scientific knowledge generated by researchers in Alagoas to improve the region's healthcare landscape. As suggestions and alternatives to increase the visibility of research developed in Alagoas, we mention: (1) Collaboration with international research networks, as this would increase visibility and credibility, attracting more attention to the work being done locally; and (2) Publication in high-impact international journals, in order to enhance the reach of their work and facilitate wider dissemination and peer recognition within the global scientific community. With this information in hand, we began to assess the landscape of medical prescriptions in Alagoas.

4. Demands for Medical Cannabis Prescription in Alagoas/Brazil

In our endeavor to explore *Cannabis*-based treatments within Alagoas, we sought insights from official data provided by the National Health Surveillance Agency of Brazil (ANVISA) [18]. According to ANVISA records in December of 2024, 12 sanitary authorizations have been granted to industries for the commercialization of *Cannabis* extracts, with concentration ranging from 33 to 200 mg/mL. Additionally, 33 authorizations have been issued for CBD products, with concentrations ranging from 17.18 to 200 mg/mL, across Brazil. This data highlights the growing regulatory framework surrounding the medicinal use of *Cannabis*. However, it is important to note that ANVISA suspended the transmission of mandatory data to the National Management System of Controlled Products (SNGPC) since 2022, making it impossible to directly collect data from ANVISA regarding medical prescriptions for these *Cannabis*-derived products specifically within the State of Alagoas. The expected return for this system to resume functioning is in the first semester of 2025. Additionally, our efforts also extended to the Health Surveillance Department of Alagoas, but they too were unable to provide information due to the instability of the SNGPC. Furthermore, we reached out to the Syndicate of Retail Trade of Pharmaceuticals of the State of Alagoas (SINCOFARMA/AL), which provided data regarding medicinal stores and the current availability of *Cannabis* products in the local market. Finally, we contacted various pharmacies and drugstores in Alagoas via telephone interviews with pharmacists. However, these establishments did not provide details regarding the quantities of *Cannabis* products sold in the state.

The inability to find data on medical *Cannabis* prescriptions in Alagoas reflects a significant gap in transparency and monitoring of this market. The suspension of data transmission to the SNGPC since 2022 hinders access to detailed and accurate information on the medical use of *Cannabis* in the state. Furthermore, the instability of the system and the lack of concrete responses from local agencies, such as the Health Surveillance Department and pharmacies, contribute to the absence of a clear overview of the prescription of these products in Alagoas. Nevertheless, the Responsible Pharmacist must maintain records of all transactions involving medications and inputs subject to the SNGPC in the establishment's proprietary system or a manual registry book, ensuring they are available

for verification and inspection by the Health Surveillance authorities. However, this information was not made available for our manuscript.

Based on official data provided by the Nucleus for Monitoring of Judicial Processes of Medicines, a division of the Health Department of the State of Alagoas (FARMA-JUD/SESAU, in Portuguese), we have obtained insights into the dispensation of *Cannabis*-based medicines to patients in Alagoas since 2021 (Supplementary Table 1). Notably, there has been a substantial upswing in the judicialization of *Cannabis*-derived products over the past two years [19]. Furthermore, data indicates that the first half of 2023 has already exceeded the numbers recorded in the preceding year.

It's essential to emphasize that *Cannabis*-derived products encompass medications registered by ANVISA but not included in the standardized offerings of the Brazilian Public Health System (SUS, in Portuguese). Consequently, the sole avenue for patients to access these medicines through SUS is via the judicial process. Additionally, these formulations are available for purchase in pharmacies, with prices ranging from R\$ 140.00 to R\$ 2,254.00. This pricing spectrum poses a significant challenge to the accessibility of these medications, particularly for individuals from socioeconomically disadvantaged backgrounds [20].

The quantification of *Cannabis* products sold in Alagoas presents a notable challenge owing to the absence of comprehensive state-level monitoring. However, addressing these challenges could be facilitated through key measures, including the reestablishment of the National Management System of Controlled Products (SNGPC) and the resumption of mandatory data transmission to the National Health Surveillance Agency of Brazil (ANVISA). Furthermore, the enactment of federal regulations that promote access, foster research, enable rigorous monitoring of use, and implement robust pharmacovigilance strategies assumes paramount significance. These regulatory adjustments are indispensable for ensuring the safe and effective treatment of patients who require *Cannabis*-derived medicines and products.

We then proceed with a critical discussion regarding advances in treatments applied to clinical research that may be under development in the state of Alagoas, as well as the generation of relevant intellectual property (patents), which strongly demonstrate technological development. These aspects address the second objective of Law No. 8754/2022.

5. Development of Clinical Research and Patents on *Cannabis* in Alagoas/Brazil

Based on the clinical trials currently listed on ClinicalTrials.gov in Brazil, it's noteworthy that 13 of these trials are employing CBD as an intervention or treatment. However, none of these trials have recruited participants in the state of Alagoas. The focus of these trials primarily revolves around the evaluation of conditions and diseases linked to nervous system disorders. These encompass chronic migraine, refractory epilepsy, bipolar depression, chronic pain, and even the effects of CBD in the context of COVID-19.

It's worth considering the exploration of specific therapeutic applications of *Cannabis* or CBD targeting immune system diseases, such as allergies, autoimmune disorders, or inflammatory and infectious diseases like Arboviruses or Monkeypox. These are particularly pertinent in the context of Alagoas, as indicated by the epidemiological bulletin of the Secretary of State for Health in 2023 [15, 21]. The absence of clinical data from Alagoas may hinder the implementation of more effective public policies, as local science is still underrepresented in the development of treatments and medical protocols involving *Cannabis*.

The analysis of technological development and innovation related to *Cannabis* involved a search in the National Institute of Industrial Property (INPI) database using the keyword "*Cannabis*". This search yielded a total of 33 patent application processes connected to the utilization of *Cannabis* as an active component in technological advancements. Interestingly, only 10 of these patents were filed by Brazilian owners. Among these, six patents originated from Federal Universities, while the remaining four were submitted by private companies. Most of these patents fell under the International Patent

Classification (IPC) A61, which pertains to preparations intended for medical and therapeutic purposes. This signifies a significant emphasis on the medical applications of *Cannabis* within the technological innovation landscape in Brazil.

The fact that most of the patents are concentrated in medical applications suggests a need for broader exploration of other potential uses, such as industrial or agricultural applications. On the other hand, to foster local innovation, it is crucial to encourage more private sector participation and collaborations between academic institutions and industry, together with investment in research and development (R&D) infrastructure, aligning with the broader focus on medical and therapeutic applications to stimulate innovation and economic development within the state. Additionally, establishing state-level incentives, such as tax benefits and grant opportunities, could further attract stakeholders to invest in cutting-edge *Cannabis*-related technologies and drive Alagoas toward becoming a competitive player in this emerging field.

A parallel search using the descriptors "Cannabidiol" or "CBD" returned 61 results, but only two of these were associated with Brazilian owners, primarily Federal Universities. Notably, the IPC classifications for these patents were unrelated to medical or therapeutic applications, indicating diverse areas of technological exploration. Conversely, when employing the descriptors "Tetrahydrocannabinol" or "THC", seven results were retrieved, although none of these were linked to Brazilian patents. This suggests that Brazilian innovation and patent activity in this area might be less pronounced.

A scientific article from Alagoas in 2018 [16] conducted a similar search in the INPI database and revealed that there were no patent filings in Brazil specifically focused on the utilization of *Cannabis* or its derivatives at that time. The fact that, six years later, Brazil has accumulated 12 patent applications, primarily in the healthcare sector, indicates a growing and dynamic interest in exploring the potential applications of *Cannabis* in various fields. However, it is unfortunate that the State of Alagoas has not yet made any patent filings in this area. This lack of patent filings reflects a missed opportunity for local innovation and highlights the need for stronger support for research and development initiatives within the state.

6. Demands for Widespread Public Awareness on *Cannabis* in Alagoas/Brazil

Regarding the dissemination of information on *Cannabis* as outlined by third objective of the Law No. 8754/2022, there has been a notable increase in events targeting a broader, non-specialist audience (the general public) in the state of Alagoas. Among these, several courses, symposiums, and lectures have been held by various institutions. For instance, the Technological Innovation Center of UNCISAL organized a course titled "Medicinal *Cannabis* - Applications and Potentialities in the Health Industry in Brazil" in 2023, aimed at both professors and students. Similarly, the Federal Institute of Alagoas hosted a roundtable discussion on "Myths and Truths about Cannabinoids" for students in the Nursing and Biological Sciences programs in 2023. Additionally, the Regional Pharmacy Council of Alagoas promoted the "Advanced Course on Medicinal *Cannabis*" in 2024.

These initiatives reflect a growing awareness and willingness to engage in the conversation about medicinal *Cannabis* use in Alagoas. By offering educational opportunities for both students and professionals, these events aim to bridge the gap between specialized knowledge and the public's understanding. However, continued efforts are necessary to expand these initiatives to reach even broader sections of the population, including healthcare practitioners who may not be aware of the latest developments in *Cannabis*-based treatments. It's important to note that FAPEAL played a crucial role in supporting the organization and execution of these educational events.

The establishment of the Institute of Cannabinoid Sciences (ICCA) [22] in Alagoas since 2020 represents a commendable and forward-thinking initiative (<https://www.icca-brasil.com/>). This nonprofit organization plays a pivotal role in assisting patients who qualify for cannabinoid therapy. The founders of ICCA encompass a diverse group of professionals, including doctors, lawyers, psychologists, and other healthcare experts, all

hailing from Alagoas. ICCA has demonstrated its commitment to fostering understanding and engagement with *Cannabis*-derived therapy through various means. The Institute has organized scientific events and offers membership registration to both patients and individuals interested in the therapeutic applications of *Cannabis*. While the range of assistance provided by ICCA is accessible to the entire population, individuals are required to become associate members by paying annual fees to access these services.

After addressing the three objectives of Law No. 8754/2022, it is essential to discuss the legislative advancements within Alagoas that regulate this law and ensure its full implementation at the state level. The next section will cover the legislative processes and actions undertaken in this regard.

7. Legislative Demands on *Cannabis* in Alagoas/Brazil

There are several initiatives underway for the regulation of medicinal *Cannabis* use in Alagoas, such as the Health Technology Assessment Commission (CATS) from the State Health Department of Alagoas, which announced the formation of a working group dedicated to evaluating the incorporation of *Cannabis sativa* for medicinal use in the state's Unified Health System (SUS). Without regulation by the State Government, the medicinal use of *Cannabis* remains inaccessible within SUS.

The Brazilian Bar Association in Alagoas (OAB/AL) has established a new commission aimed at enhancing the development of the state. This is the Commission on Medicinal *Cannabis* and Industrial Hemp Law, which seeks to strengthen the dialogue with the UFAL in terms of research development, and with the public authorities, providing support to government bodies on the necessary transformations in certain sectors. This initiative represents a significant step toward creating a collaborative framework that can foster both scientific advancements and policy changes, ultimately improving the state's position in the national and international arena.

The Legislative Assembly of Alagoas has demonstrated its commitment to fostering an informed and inclusive dialogue on the medicinal use of *Cannabis*. This has been achieved through plenary and public sessions that facilitate discussions with representatives from various segments of society. These sessions have brought together researchers, medical professionals, lawmakers, regional pharmacy advisors, and patient associations. The overarching aim of these sessions has been to delve into the realm of scientific evidence and legislative challenges that must be addressed to effectively implement the medicinal use of *Cannabis* in the state. This approach aligns with the narrative we are crafting, which underscores the critical nature of these meetings and ongoing debates. They are instrumental in paving the way for realizing the potential benefits of *Cannabis*-based treatments for the broader society of Alagoas.

8. Conclusion

Finally, it is highly promising to witness the active engagement and participation of diverse sectors of society in the scientific and technological development of medicinal *Cannabis* in Alagoas and Brazil as a whole. The increasing involvement of politicians, legal experts, healthcare professionals, and patients underscores the multifaceted nature of progress in this field of science and health. The escalating number of studies, expanding knowledge base, and the growing demand for treatments utilizing *Cannabis* derivatives in Alagoas serve as encouraging indicators of Brazil's advancements in this realm. This momentum reflects the nation's commitment to exploring the therapeutic potential of *Cannabis*-based medicines and improving patient outcomes.

To further enhance the impact of this momentum, it is essential to provide specific recommendations for stakeholders involved in the development of *Cannabis*-based medicines. Firstly, prioritizing funding for research and clinical trials would accelerate the generation of evidence needed to inform healthcare practices and regulatory policies. Additionally, strengthening public awareness through educational campaigns and outreach

programs is crucial for overcoming societal stigma and fostering informed decision-making among patients and healthcare providers. Lastly, streamlining regulatory processes to facilitate timely access to safe and effective *Cannabis*-based treatments will be essential in meeting the growing demand and ensuring the successful integration of these therapies into the healthcare system.

Funding: None.

Research Ethics Committee Approval: None.

Acknowledgments: The authors thank Priscylla de Paula Lins for her kindness and commitment for providing us with information on the subject, participating in the Medicinal *Cannabis* course at UNCISAL/AL.

Conflicts of Interest: The authors declare no conflict of interest.

Supplementary Materials: Supplementary Table 1. Number of *Cannabis*-derived medicines legally dispensed by the State of Alagoas. Data officially provided by FARMAJUD/SESAU/AL, electronic letter no. 001/2023. List of drugs indicates the amount legally authorized and dispensed per year.

References

1. Zamengo L, Frison G, Zwitser G, Salomone A, Freeman TP. *Cannabis* knowledge and implications for health: considerations regarding the legalization of non-medical *Cannabis*. *Med Sci Law*. 2020 Oct;60(4):309-314. doi: 10.1177/0025802420934255.
2. Kilmer B, Pérez-Dávila S. Nine insights from 10 years of legal *Cannabis* for nonmedical purposes. *Clin Ther*. 2023 Jun;45(6):496-505. doi: 10.1016/j.clinthera.2023.03.005.
3. Laranjeira R, Martin D. Traps in *Cannabis* policies in Brazil. *Braz J Psychiatry*. 2019 Nov-Dec;41(6):475-476. doi: 10.1590/1516-4446-2019-4108.
4. Scheffer M. Alagoas. In: *Demografia médica no Brasil*. São Paulo: FMUSP, AMB; 2023. p. 45-47.
5. Malta RU, Verçosa RCM, Barbosa DFR, Pereira TS, Santana NMP, Silva MB, Santos EG. Compreensão da enfermagem diante do mecanismo da *Cannabis* em pacientes oncológicos. *Braz J Dev*. 2021;7(1):8394-8407. doi: 10.34117/bjdv7n1-569.
6. de Almeida Neto JT, de Almeida Neto JT, Cavalcante ADC, de Almeida LF, Moura TS, Fermoseli AFO. Alterações neurofisiológicas e cognitivas decorrentes do uso crônico da maconha: uma revisão de literatura. *Cad Grad Ciênc Hum Soc Unit Alagoas*. 2020;6(1):85. Available from: <https://periodicos.set.edu.br/fitshumanas/article/view/8204>
7. Notomi M. Intoxicação por *Cannabis* sativa: desafios relacionados à clínica de animais de companhia. *Pubvet*. 2020;14(9). doi: 10.31533/pubvet.v14n9a651.1-97.
8. Delmiro JA, Torres FBO, Almeida AAC, Ferreira PMP, Santos Júnior AF, Cavalcanti BC, Silva FCC, Magalhães HIF, Ferreira JRO. Food products based on *Cannabis* extract: from “Brisadeiro” to searching for a therapeutic effect. *Res Soc Dev*. 2022;11(2):e10711225422. doi: 10.33448/rsd-v11i2.25422.
9. Lins MP, de Melo IS. Exploring the interplay between cannabinoids and thymic functions. *Toxicol Sci*. 2024 Nov 1;202(1):1-12. doi: 10.1093/toxsci/kfae114.
10. Freitas-Santos J, Brito IRR, Santana-Melo I, Oliveira KB, de Souza FMA, Gitai DLG, Duzzioni M, Bueno NB, de Araujo LA, Shetty AK, Castro OW. Effects of cocaine, nicotine, and marijuana exposure in *Drosophila melanogaster* development: a systematic review and meta-analysis. *Prog Neuropsychopharmacol Biol Psychiatry*. 2024 Aug 30;134:111049. doi: 10.1016/j.pnpbp.2024.111049.
11. Silva EVFF, Santos EC, Silva VEF, Aguiar JES, Felismino RJA, Silva JC, Azevedo CP, Pereira RCA, Elizario JLL, Moura MABF. Therapeutic potential of *Cannabis* sativa in the treatment of symptoms in autistic children: a literature review. *Ciênc Saúde*. 2024;28(139):e10202410312134. doi: 10.69849/revistaft/cs10202410312134.
12. Correia FS, Oliveira REC, Escodro PB. Indicações da *Cannabis* sativa na terapêutica veterinária – revisão sistemática. *Observ Econ Latinoam*. 2024;22(12):e8061. doi: 10.55905/oelv22n12-034.
13. Santos ALF, dos Santos ESRN, Dibai Filho AV, Gomes CAF de P, Pinto C de M, Souza C da S. Efeitos do uso de *Cannabis* medicinal no tratamento da dor relacionada ao câncer: uma revisão sistemática. *Cons Saúde*. 2024 Sep 5;23(1):e26196. Available from: <https://uninove.emnuvens.com.br/saude/article/view/26196>.
14. de Araújo Filho JD, Sousa DL, de Faria RFS, Siqueira NMR, Gomes RNS, Silva JA, Matsuoka RT. *Cannabis* medicinal no tratamento de dor musculoesquelética: uma overview de estudos de revisão. *Contrib Ciênc Soc*. 2024;17(1):6853-6864. doi: 10.55905/revconv.17n.1-413.
15. Santos-Júnior PFDS, Martins-Filho PR, Quintans-Júnior LJ, Silva-Júnior EFD. Letter to the Editor: Would cannabidiol be a therapeutic alternative to treat monkeypox symptoms? *Cannabis Cannabinoid Res*. 2023 Apr;8(2):379-380. doi: 10.1089/can.2022.0261.
16. Oliveira EHA, Sorgato JPA, Silva RC, Martins PKS, Uchôa SBB, Tonholo J. Mapeamento tecnológico do canabidiol (CBD) para finalidades farmacêuticas no Brasil. *Cad Prospec*. 2018;11(3):900. doi: 10.9771/cp.v11i3.27098.

17. Upadhy D, Castro OW, Upadhy R, Shetty AK. Prospects of cannabidiol for easing status epilepticus-induced epileptogenesis and related comorbidities. *Mol Neurobiol*. 2018;55(8):6956-6964. doi: 10.1007/s12035-018-0898-y.
18. National Health Surveillance Agency of Brazil. Anvisa alerta sobre instabilidade no sistema SNGPC. 2022. Available from: <https://www.gov.br/anvisa/pt-br/assuntos/noticias-anvisa/2021/anvisa-alerta-sobre-instabilidade-no-sistema-sngpc>.
19. Portela R, Mota DM, Ferreira PJG, Lula MD, Reis BB, Oliveira HN, Ruas CM. Judicialization of cannabidiol-based products in Brazil: an analysis from 2019 to 2022. *Cad Saude Publica*. 2023 Oct 9;39(8):e00024723. doi: 10.1590/0102-311XPT024723.
20. Pinto CDBS, Esher A, Oliveira CVS, Osório-de-Castro CGS. Expansion of the medical *Cannabis* market in Brazil and regulatory challenges. *Cad Saude Publica*. 2024;40(11):e00088624. doi: 10.1590/0102-311XPT088624.
21. Health State Department of Alagoas. Dados de saúde perfil municipal. 2023. Available from: <https://dados.al.gov.br/catalogo/dataset/dados-de-saude-perfil-municipal>.
22. Institute of Cannabinoid Sciences. Quem somos. 2023. Available from: <https://www.iccabrasil.com/>.