https://doi.org/10.47822/bn.v14i1.1236
ISSN 2526-6349 *On-line version*
ISSN 2175-1943 *Print version*

Review article

Medicinal benefits of cannabidiol in patients with fibromyalgia: integrative review

Benefícios medicinais do canabidiol em pacientes com fibromialgia: revisão integrativa

Ana Paula Rodrigues da Silva Santos[1] | Jannice Quintana[1] | Keiti de Lima Domingos[1] | Ricardo de Freitas Oliveira[1] | Josemar Batista[1]

[1]*UniDomBosco University Center, Curitiba, PR, Brazil.*

Abstract

Objective: to identify, in the literature, the benefits of using cannabidiol in individuals with fibromyalgia syndrome. **Materials and methods:** integrative literature review, with data collection in September 2024 in the databases Medical Literature Analysis and Retrieval System Online, Latin American and Caribbean Literature in Health Sciences, and Spanish Bibliographic Index in Health Sciences. Primary articles published between 2019 and 2024, in Portuguese, English, and Spanish. **Results:** 35 studies were found in the primary search; seven were included. The main benefits of using cannabidiol were pain and discomfort relief, improved sleep quality, promotion of self-care and performance of usual activities, reduced fatigue, increased memory, decreased anxiety and depression, increased libido, and improved mood. **Conclusion:** despite being a feasible and possibly beneficial substitute for easing psychological and physical symptoms, cannabidiol requires close medical supervision from a team of nurses, in particular. This serves to guarantee the secure implementation of this therapeutic approach in the management of fibromyalgia.

Keywords: Cannabis. Medical marijuana. Fibromyalgia.

Resumo

Objetivo: identificar, na literatura, os benefícios da utilização do canabidiol em indivíduos com a síndrome da fibromialgia. **Materiais e métodos:** revisão integrativa da literatura, com coleta de dados em setembro de 2024 nas bases de dados *Medical Literature Analysis and Retrieval System Online*, Literatura Latino-Americana e do Caribe em Ciências da Saúde e Índice Bibliográfico *Español em Ciencias de la Salud*, de artigos primários publicados entre os anos 2019 à 2024, em português, inglês e espanhol. **Resultados:** na busca primária foram encontrados 35 estudos; sete foram incluídos. Os principais benefícios do uso de canabidiol foram o alívio da dor e desconforto, melhora da qualidade do sono, promoção do autocuidado e realização de atividades habituais, redução da fadiga, aumento da memória, diminuição da ansiedade e do quadro depressivo, aumento da libido e melhorias de humor. **Conclusão:** embora o canabidiol seja uma alternativa viável e potencialmente efetiva para redução de sintomas físicos e psíquicos, é essencial acompanhamento do paciente por profissionais de saúde, com destaque para à equipe de enfermagem, com vistas a garantir o uso seguro dessa modalidade terapêutica no tratamento da fibromialgia.

Palavras-chave: Cannabis. Maconha medicinal. Fibromialgia.

Corresponding author: Josemar Batista| josemar.batista@hotmail.com
Received: 01|10|2025. Approved on: 06|18|2025.
Evaluated by the *double-blind review* process.

How to cite this article: Santos APRS, Quintana J, Domingos KL, Oliveira RF, Batista J. Medicinal benefits of cannabidiol in patients with fibromyalgia: integrative review. Revista Bionorte. 2025 jan-jun;14(1):680-690. https://doi.org/10.47822/bn.v14i1.1236

Introduction

Fibromyalgia syndrome (FMS) persists with significant challenges in terms of diagnosis and treatment. Conceptually, it consists of a complex chronic pain disorder characterized primarily by generalized musculoskeletal pain, fatigue, sleep disorders, and cognitive impairment[1] . Depending on the geographical location, it is estimated that the prevalence of FMS ranges from 1.4% to 2.64%; it affects females more often, and the rates increase with increasing age[2]. In Brazil, the prevalence of FMS has been estimated at 2%[3] .

Although it recognizes various pharmacological and non-pharmacological interventions, scientific evidence shows that clinical results in patients with this condition remain suboptimal, prompting the exploration of new therapeutic modalities[1]. In this context, researchers have been investigating and presenting alternatives for the treatment of FMS, such as the use of cannabinoids, including delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD)[1,4].

Cannabis plants contain more than 140 pharmacologically active cannabinoids, compounds that interact with the endocannabinoid system, a cell signaling system with an essential role in the central nervous system and the inflammatory response[5]. Previous research has shown positive effects of medicinal cannabis in patients with FMS, which can be consumed by smoking, vaporizing, or sublingually applying drops of oil containing the substance [1,4].

Considering CBD's potential medicinal benefits, research into the subject is essential to understand how the substance can be used to promote the quality of life of individuals with FMS. Thus, this study aimed to identify, in the literature, the benefits of using cannabidiol in individuals with fibromyalgia syndrome.

Materials and Methods

This is an integrative literature review based on the six stages proposed by Mendes, Silveira, and Galvão[6]: 1) establishing the guiding question and the title; 2) sampling and searching the literature; 3) organizing the information extracted from databases; 4) evaluating the studies included; 5) interpreting the results; and 6) synthesizing and presenting the review.

Stage 1 included the following guiding question: What are the benefits of the medicinal use of cannabidiol in the treatment of fibromyalgia?

Stage 2 involved searching for primary studies. It was carried out in September 2024 in the following databases: Medical Literature Analysis and Retrieval System Online (MEDLINE), Latin American and Caribbean Health Sciences Literature (LILACS), and the *Spanish* Bibliographic Index on Health Sciences (IBECS), available through the Virtual Health Library (VHL) portal.

The search strategy used the Health Sciences Descriptors (DeCS) "Cannabis" and "Fibromyalgia," combined by the Boolean operator *AND*. The inclusion criteria were original articles available in full and online, published between 2019 and August 2024 in Portuguese, English, or Spanish. Integrative reviews, editorials, experience and case reports, duplicate articles, and those that did not answer the guiding question were excluded.

Two independent reviewers selected the studies after reading the titles and abstracts and applying the eligibility criteria to identify the relevant studies for the review. The pre-selected studies were read in full to identify the studies to be included in the integrative review's corpus. If there was any uncertainty about whether the study should be included, a consensus meeting was held with a third reviewer.

The included studies were organized in a *Microsoft Office Excel*® spreadsheet, version 2016. To extract data from the studies (Stage 3), a validated instrument[7] was used, adapted for the context of this research and made up of the following variables: authors, year, country of study, title, objective, type of study, and main results.

The critical analysis of the results was carried out in Stage 4, and the information was presented descriptively in a table. The interpretation was made by categorizing the studies and presenting and synthesizing the knowledge to incorporate the findings into clinical practice (Stages 5 and 6).

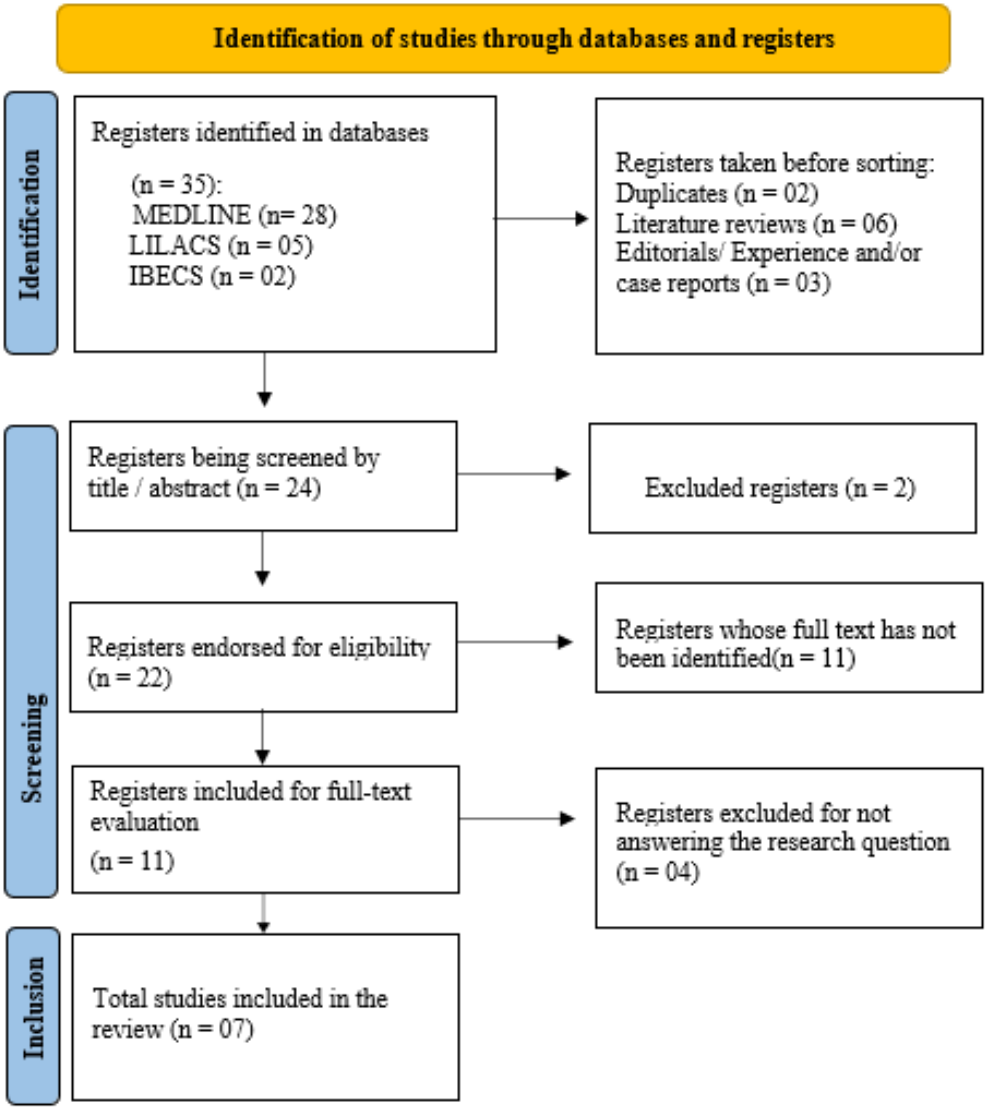
Results

The primary search identified 35 studies, of which seven were included. Figure 1 shows the search, selection, and inclusion stages.

There was a prevalence of studies carried out in the United States of America (n=3; 42.9%) and published in the year 2023 (n=3; 42.9%), and descriptive and cross-sectional research stood out among the studies analyzed (n=4; 57.1%).

The characteristics of the studies included are described in Chart 1.

Figure 1. Flowchart for identifying, selecting and including studies - Curitiba, PR, Brazil 2024.



Source: The authors (2024) adapted from Page et al[8].

Chart 1. Characterization of the studies included in the integrative review about study identification, authors/country/year of publication, title, objective, method, and main results. Curitiba, Paraná, Brazil, 2024.

Identification of the study	Authors, country, and year of publication	Title	Objective	Method	Main results
I	Chaves; Bittencourt; Pelegrini.[9] Brazil, 2020	Ingestion of a THC-Rich Cannabis Oil in People with Fibromyalgia: A Randomized, Double-Blind, Placebo-Controlled Clinical Trial	To determine the benefit of THC-rich cannabis oil on the symptoms and quality of life of fibromyalgia patients.	This was a double-blind, randomized, placebo-controlled clinical trial. It was carried out over eight weeks to determine the benefit of a THC-rich cannabis oil (24.44 mg/mL THC and 0.51 mg/mL CBD) on the symptoms and quality of life of 17 women with fibromyalgia. The starting dose was one drop (1.22 mg THC and 0.02 mg CBD) per day, with subsequent increases according to symptoms. The Revised Fibromyalgia Impact Questionnaire (FIQR) was applied pre- and post-intervention at five visits over eight weeks.	The average age of the women was 51.9 years. The cannabis group had a significantly lower total score on the FIQR compared to the placebo group ($p=0.005$) and compared to the baseline score of the cannabis group ($p<0.001$). There was a statistical difference in the mean value of the following items: “felt well”, “pain”, “ability to work” and “fatigue”.
II	Boehnke *et al.*[10] United States of America, 2021	Cannabidiol Use for Fibromyalgia: Prevalence of Use and Perceptions of Effectiveness in a Large Online Survey	To understand rates of CBD use, reasons for use and discontinuation, communication with healthcare professionals about CBD, and perceptions of CBD efficacy and safety among people with fibromyalgia.	This was a cross-sectional survey of 2,701 participants with fibromyalgia and other chronic pain conditions. The data was collected using the Fibromyalgia Symptom Scale and the Complex Medical Symptom Inventory. After using CBD, participants rated changes in symptoms by filling in a seven-point Likert scale adopted from the Patient Global Impression of Change, with scores ranging from “much worse” to “much better”.	The participants were 94.7% female and mostly white, with an average age of 56.7 years. Most participants reported using CBD products daily, in concentrations <0.3% THC (41.7%). There was an improvement in the following symptoms: insomnia/sleep problems (40.1%), anxiety (40%), depression (32.3%), pain (30.5%), memory/clear thinking (21.9%), and fatigue (20%).

III	Boehnke *et al.*[11] United States of America, 2021	Substituting Cannabidiol for Opioids and Pain Medications Among Individuals With Fibromyalgia: A Large Online Survey	Explore the replacement of opioids and painkillers with CBD products.	This was a cross-sectional study of 878 individuals with fibromyalgia taking CBD. As measures of clinical symptoms and pain, participants completed the Fibromyalgia Symptom Scale and the Complex Medical Symptom Inventory, and changes in symptom intensity according to a Likert scale.	The study population comprised 93.6% women, with an average age of 55.5 years. Lower side effects and better symptom control were the main reasons reported for substitution. Age, CBD with <0.3% THC, use of cannabis-based products in the previous year, and higher somatic burden were all associated with substitution ($p \leq 0.05$). Participants who used CBD with >0.3% THC reported significantly more substitution ($p \leq 0.001$) and better scores in global health, pain, memory, and sleep.
IV	Sotoodeh *et al.*[12] Canada, 2023	Predictors of Pain Reduction Among Fibromyalgia Patients Using Medical Cannabis: A Long-Term Prospective Cohort Study	To examine changes in pain intensity, negative affect, and sleep problems after starting medical cannabis among fibromyalgia patients.	Prospective cohort of 323 patients with fibromyalgia. Patients were assessed at the start of the study, and follow-up assessment visits took place every 3 months after starting medical cannabis. Patients' levels of pain intensity, negative affect, and sleep problems were assessed at every visit. The researchers administered a demographic questionnaire and a questionnaire related to health profile and cannabis use. The Brief Pain Inventory (BPI) scale was used to evaluate pain, and the Edmonton Symptom Assessment System (ESAS) was used to determine negative affect.	Prospective cohort of 323 patients with fibromyalgia. Patients were assessed at the start of the study, and follow-up assessment visits took place every 3 months after starting medical cannabis. Patients' levels of pain intensity, negative affect, and sleep problems were assessed at every visit. The researchers administered a demographic questionnaire and a questionnaire related to health profile and cannabis use. The Brief Pain Inventory (BPI) scale was used to evaluate pain, and the Edmonton Symptom Assessment System (ESAS) was used to determine negative affect.

V	Hershkovic *et al.*[13] Israel, 2023	The role of cannabis in treatment-resistant fibromyalgia women	To characterize the impact of starting cannabis treatment on quality of life in women with treatment-resistant fibromyalgia.	A prospective cohort involving 30 women aged between 18 and 70 diagnosed with fibromyalgia. The World Health Organization Quality of Life Bref (WHOQOL-bref) questionnaire was used to collect data.	The average age of the participants was 46. Cannabis use showed a significant improvement ($p<0.01$) in quality of life and general health, as well as in aspects related to the physical and psychological domains.
VI	Wang *et al.*[4] United Kingdom, 2023	*Assessment of clinical outcomes in patients with fibromyalgia: Analysis from the UK Medical Cannabis Registry*	To analyze changes in health-related quality of life and the incidence of adverse events of cannabis-based medicines prescribed for fibromyalgia.	A descriptive study analyzing 306 cases registered in the UK *Medical Cannabis Registry*. The following instruments were used to collect data: *Widespread Pain Index, Symptom Severity Scale, Single-Item Sleep Quality Scale, Patients' Global Impression of Change, General Anxiety Disorder Scale*, EQ-5D-5L, *British National Formulary*, and Visual Analogue Pain Scale.	More than 70% of the participants were female, and the average age was 44.7 years. The average dose reported by patients taking THC was 100 mg/day, and the average dose of CBD was 20 mg/day. There were improvements compared to baseline at follow-ups of 1, 3, and 6 months in the following domains: Severity of Fibromyalgia Symptoms, Self-Care, Pain and Discomfort, Anxiety and Depression, and Habitual Activities ($p< 0.050$).
VII	Singla *et al.*[14] United States of America, 2024	*A Cross-Sectional Survey Study of Cannabis Use for Fibromyalgia Symptom Management*	To evaluate the use of cannabis as a symptom management strategy in patients with fibromyalgia.	A cross-sectional study was carried out, using the Revised Fibromyalgia Impact Questionnaire (FIQR) on 1,336 patients diagnosed with fibromyalgia.	The interviewees were mainly female and had an average age of 48. Approximately half of the participants reported using cannabis since their diagnosis. Around 35% of the patients consumed cannabis containing mainly THC, and 34% consumed a mixture of THC and CBD. There was a reduction in pain and an improvement in stress/anxiety/depression and sleep disturbances.

Legend: THC = tetrahydrocannabinol; CBD = cannabidiol.
Source: The authors, 2024.

Discussion

Several benefits have been observed with the use of cannabis-derived products, such as CBD and THC, primarily pain and discomfort relief[4,9-14] and improved sleep quality[9-14]. There is evidence to suggest that the combination of THC and CBD helps to reduce pain and enhance the quality of sleep in fibromyalgia patients. However, it is essential to verify correct dosages and develop future research to validate this hypothesis, highlighting the need for new, clear clinical guidelines to safely use cannabinoids[1].

The study by Singla *et al.*[14] identified widespread use of cannabis for symptom management, with patients reporting positive perceptions of pain relief. This study also suggests that although use is everyday, longitudinal data is lacking to confirm long-term efficacy. Similarly, Wang *et al.*[4] observed that individuals who used medical cannabis showed a significant reduction in fibromyalgia-specific symptoms, as well as improved sleep, reduced anxiety, and promoted quality of life. These data demonstrate a positive correlation between regular cannabinoid use and symptom reduction.

Boehnke *et al.*[11] analyzed the use of CBD as a substitute for opioids among fibromyalgia patients. Their findings indicate a reduction in the use of opioids and other analgesics in patients using CBD, suggesting an alternative to reduce dependence on more traditional and sometimes more harmful medications. Furthermore, it could play a crucial role in reducing opioid dependence, potentially revolutionizing the treatment of chronic pain in fibromyalgia patients.

Berger *et al.*[15] highlight the potential of an integrated approach involving cannabinoids for the treatment of fibromyalgia, but stress the need for more rigorous clinical studies to determine efficacy and optimal dosage. On the other hand, Chaves *et al.*[9] provide robust evidence that THC-rich oil can significantly improve pain and quality of life, corroborating the practical efficacy of specific compounds for fibromyalgia, but emphasize the need to monitor possible adverse effects.

With pain relief, there are improvements in self-care and in carrying out the patient's usual and routine activities[4,9,13]. A descriptive-exploratory and qualitative study with 12 women participating in the interdisciplinary health education group at a public university in Rio de Janeiro, Brazil, pointed out that chronic pain caused by FMS causes suffering. It limits the performance of simple daily tasks. It also points to social distancing and exclusion. Hershkovich *et al.*[13] emphasize the importance of considering subpopulations, such as women with treatment-resistant fibromyalgia, since these patients may have different responses to the use of cannabinoids.

Although the literature highlights the positive effects of the use of medical cannabis and its growing acceptance among patients, caution should be exercised in its use; also, there is an increasing

need to improve scientific evidence and clear regulations to legitimize this treatment in FMS17. In addition, there is a need for constant training of health professionals in the proper management of cannabis use by patients, especially in the management of chronic pain[18]. In this way, health professionals, especially nursing staff, require practical information to care for patients who use cannabis in their treatment, given the growing number of this therapeutic modality in health-related care. This prompts regulation for the safe and legal performance of cannabis nursing.

The limitations of this study include the small number of databases consulted and the descriptors and languages used for the primary search. The heterogeneity of the research included and the lack of a standardized protocol for data analysis make it impossible to critically evaluate the quality of the studies, adding to the limitations of this study.

Conclusion

Several studies have shown promise in treating FMS with cannabinoids, but important gaps remain regarding safety, efficacy, dosages, and clinical guidance. Continued research and the development of health policies are recommended to ensure that patients can access evidence-based treatments, minimizing risks and maximizing therapeutic benefits.

The results emphasize the importance of using cannabis as a viable option in the treatment of patients with FMS, but also highlight the need for continued research and professional education to ensure that this therapy is used safely and effectively. Current evidence provides a solid basis for discussion, but clinical implementation must be carefully considered.

Author contributions

Ana Paula Rodrigues da Silva Santos, Jannice Quintana, Keiti de Lima Domingos, Ricardo de Freitas Oliveira e Josemar Batista: Conception and design of the research; data collection; analysis and interpretation of the data; writing of the manuscript; critical revision of the manuscript in terms of intellectual content and final presentation. The authors approved the final version of the manuscript and declared themselves responsible for all aspects of the work, including guaranteeing its accuracy and integrity.

Conflict of interests

The authors declare no conflicts of interest.

References

1. David P, Mohsen A, Amital H. Is Medical Cannabis a Solution for Controlling Fibromyalgia Symptoms?. Mayo Clin Proc. 2024;99(4):524-526. Available from: https://doi.org/10.1016/j.mayocp.2024.02.016

2. Kocyigit BF, Akyol A. Fibromyalgia syndrome: epidemiology, diagnosis and treatment. Reumatologia. 2022;60(6):413-421. Available from:https://doi.org/10.5114/reum.2022.123671

3. Souza JB, Perissinotti DMN. The prevalence of fibromyalgia in Brazil – a population-based study with secondary data of the study on chronic pain prevalence in Brazil. BrJP. 2018;1(4):345–8. Available from:https://doi.org/10.5935/2595-0118.20180065

4. Wang C, Erridge S, Holvey C, Coomber R, Usmani A, Sajad M, et al. Assessment of clinical outcomes in patients with fibromyalgia: Analysis from the UK Medical Cannabis Registry. BrainBehav. 2023;13(7):e3072. Available from: https://doi.org/10.1002/brb3.3072

5. Gonçalves WA, Ferreira RCM, Rezende BM, Mahecha GAB, Gualdron M, Macedo FHP, et al. Endogenous opioid and cannabinoid systems modulate the muscle pain: A pharmacological study into the peripheral site. Eur J Pharmacol. 2021;901:174089. Available from: https://doi.org/10.1016/j.ejphar.2021.174089

6. Mendes KDS, Silveira RCCP, Galvão CM. Revisão integrativa: método de pesquisa para a incorporação de evidências na saúde e na enfermagem. Texto contexto - enferm. 2008;17(4):758–64. Availablefrom:https://doi.org/10.1590/S0104-07072008000400018

7. Ursi ES, Galvão CM. Prevenção de lesões de pele no perioperatório: revisão integrativa da literatura. Rev Lat Am Enfermagem. 2006;14(1):124-31. Available from:https://doi.org/10.1590/S0104-11692006000100017

8. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ. 2021;372:n71. Available from:https://doi.org/10.1136/bmj.n71

9. Chaves C, Bittencourt PCT, Pelegrini A. Ingestion of a THC-Rich Cannabis Oil in People with Fibromyalgia: A Randomized, Double-Blind, Placebo-Controlled Clinical Trial. Pain Med. 2020;21(10):2212-2218. Available from:https://doi.org/10.1093/pm/pnaa303

10. Boehnke KF, Gagnier JJ, Matallana L, Williams DA. Cannabidiol Use for Fibromyalgia: Prevalence of Use and Perceptions of Effectiveness in a Large Online Survey. J Pain. 2021;22(5):556-566. Available from:https://doi.org/10.1016/j.jpain.2020.12.001

11. Boehnke KF, Gagnier JJ, Matallana L, Williams DA. Substituting Cannabidiol for Opioids and Pain Medications Among Individuals With Fibromyalgia: A Large Online Survey. J Pain. 2021;22(11):1418-1428. Available from:https://doi.org/10.1016/j.jpain.2021.04.011

12. Sotoodeh R, Waldman LE, Vigano A, Moride Y, Canac-Marquis M, Spilak T, et al. Predictors of Pain Reduction Among Fibromyalgia Patients Using Medical Cannabis: A Long-Term Prospective Cohort Study. Arthritis Care Res (Hoboken). 2023;75(7):1588-1594. Available

from:https://doi.org/10.1002/acr.24985

13. Hershkovich O, Hayun Y, Oscar N, Shtein A, Lotan R. The role of cannabis in treatment-resistant fibromyalgia women. Pain Pract. 2023;23(2):180-184. Available from: https://doi.org/10.1111/papr.13179

14. Singla A, Anstine CV, Huang L, Rosedahl JK, Mohabbat AB, Philpot LM. A Cross-Sectional Survey Study of Cannabis Use for Fibromyalgia Symptom Management. Mayo Clin Proc. 2024;99(4):542-550. Available from:https://doi.org/10.1016/j.mayocp.2023.12.018

15. Berger AA, Keefe J, Winnick A, Gilbert E, Eskander JP, Yazdi C, et al. Cannabis and cannabidiol (CBD) for the treatment of fibromyalgia. Best Pract Res Clin Anaesthesiol. 2020;34(3):617-631. Available from:https://doi.org/10.1016/j.bpa.2020.08.010

16. Oliveira JPR, Berardinelli LMM, Cavaliere MLA, Rosa RCA, Costa LPD, Barbosa JSO. The routines of women with fibromyalgia and an interdisciplinary challenge to promote self-care. RevGauchaEnferm. 2019;40:e20180411. Available from:https://doi.org/10.1590/1983-1447.2019.20180411

17. Astráin-Aguado MÁ, García-Recio E, de Santiago-Moraga J, Sánchez-Nicolás M. ¿Es útil elcannabis medicinal para eltratamiento de lafibromialgia?.Rev. Soc. Esp. Dolor . 2022; 29 (Suppl 1): 27-31. Available from:https://dx.doi.org/10.20986/resed.2022.4029/2022

18. Andrews NJ, Phillips AJ. Community nurses' support for patients with fibromyalgia who use cannabis to manage pain. Br J Community Nurs. 2021;26(2):92-98. Available from: https://doi.org/10.12968/bjcn.2021.26.2.92