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Full-spectrum cannabis sativa MCT-infused oil and topical formulation for pain reduction in women with fibromyalgia: a one-year prospective observational case series

Abstract

Background: Fibromyalgia is a chronic pain condition characterized by widespread pain and frequently associated symptoms such as fatigue, sleep disturbance, and cognitive complaints. Cannabinoid-based interventions have been investigated as potential options for symptom management, but the clinical evidence remains heterogeneous.

Objective: To describe changes in self-reported pain intensity over 12 months among 20 women with fibromyalgia receiving a full-spectrum Cannabis sativa oral MCT-infused oil together with a topical formulation.

Methods: Twenty women aged 37–65 years were observed prospectively for one year. The oral preparation contained 5% THC and 2.5% CBD, with 2.5 mg THC and 1.25 mg CBD per drop; dosing was one drop per 10 kg body weight twice daily. A topical cream containing coconut oil, shea butter, and full-spectrum Cannabis sativa MCT-infused oil was applied morning and night to painful areas, with the study protocol also including application to the nostrils, umbilical area, and vaginal area. Pain was recorded on a 0–10 scale before treatment and after 12 months. Paired analyses included the paired t-test and Wilcoxon signed-rank test.

Results: Mean baseline pain was 9.15 ± 0.75 and mean pain after 12 months was 3.10 ± 0.72, corresponding to a mean reduction of 6.05 points (95% CI 5.66–6.44) and a 66.1% reduction in mean pain intensity. All 20 participants had lower pain scores at follow-up. The paired t-test showed a statistically significant within-person change ($t(19) = 32.77$, $p < 0.001$); the Wilcoxon signed-rank test also indicated a statistically significant reduction ($p < 0.001$).

Conclusion: A substantial reduction in self-reported pain intensity was observed during the 12-month period. Because this was a small, uncontrolled, unblinded observational case series using a combined oral and topical protocol, the findings demonstrate an association over time and do not establish that Cannabis sativa caused the observed improvement. Controlled studies with standardized products, dosing, and safety monitoring, and validated multidimensional outcomes are warranted.

Keywords: fibromyalgia, Cannabis sativa, cannabinoids, THC, CBD, chronic pain, medical cannabis, observational study, case series

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Introduction

Fibromyalgia is a chronic pain syndrome characterized by generalized pain and a broad symptom burden that may include fatigue, sleep disturbance, cognitive symptoms, and reduced quality of life. The 2016 revision of the American College of Rheumatology fibromyalgia criteria provides a contemporary framework for diagnosis and classification in adults.[1]

The endocannabinoid system has a role in pain modulation and stress-related processes, and alterations in endocannabinoid signaling have been described in fibromyalgia. Cannabinoid-based medicines therefore continue to be investigated as potential symptom-directed therapies. However, reviews have emphasized heterogeneity in cannabinoid products, routes of administration, outcomes, and study designs, together with limited longitudinal controlled evidence.[2-4]

Clinical studies have produced mixed but clinically relevant findings. A randomized double-blind placebo-controlled trial in 17 women with fibromyalgia reported improvement in Fibromyalgia Impact Questionnaire scores with a THC-rich oral cannabis oil compared with placebo.[5] In contrast, a randomized four-way crossover trial of inhaled pharmaceutical-grade cannabis in 20 patients found complex and relatively small acute analgesic effects, with no treatment exceeding placebo for spontaneous or electrical pain responses, although some THC-containing preparations altered pressure pain thresholds.[6]

Prospective observational studies have also reported symptom improvements with medical cannabis. Giorgi et al. observed improvements in sleep and fibromyalgia-related outcomes among patients receiving medical cannabis in addition to standard analgesic treatment, while Bar-Lev Schleider et al. reported changes in pain and quality-of-life measures in a large observational cohort.[7,8] More recent work, including a 2024 pilot study and systematic review and systematic reviews published in 2024–2026, continues to suggest possible analgesic benefit while emphasizing the limitations of the evidence base.[9-12] A 2026 systematic review and meta-analysis including 12 clinical studies and 1,248 participants found a statistically

significant pooled reduction in pain intensity but rated the certainty of evidence as low because of heterogeneity and the small number of randomized trials.[13] A 2026 systematic review also highlighted substantial variation among cannabis formulations and routes of administration.[14]

The present case series describes a 12-month observational experience in 20 women with fibromyalgia treated with a full-spectrum 5% THC/2.5% CBD oral MCT-infused oil and a topical formulation. The primary descriptive outcome is change in self-reported pain intensity over the observation period.

Methods

Study design and participants

This was a prospective, single-arm, observational case series. Twenty women aged 37–65 years with fibromyalgia were included and observed for 12 months. The source information available for this manuscript did not include individual participant ages, disease duration, formal diagnostic criteria used at enrollment, comorbidities, concomitant medications, or reasons for treatment initiation; these variables are therefore not reported or reconstructed.

Intervention

Participants received an oral full-spectrum Cannabis sativa MCT-infused oil containing 5% THC and 2.5% CBD. The measured dose was 2.5 mg THC and 1.25 mg CBD per drop. The prescribed oral regimen was one drop per 10 kg body weight, administered twice daily. Thus, for each 10 kg of body weight, the prescribed daily exposure from the oral preparation was 5 mg THC and 2.5 mg CBD.

A topical formulation consisted of coconut oil, shea butter, and full-spectrum Cannabis sativa MCT-infused oil. The author supplied the formulation as having the same nominal THC/CBD concentration as the oral preparation; however, the exact mass of cream per application was not supplied, so a reliable mg-per-application exposure cannot be calculated and is not inferred here. The cream was applied morning and night to areas where participants reported pain. The protocol also included application to the nostrils, umbilical area, and vaginal area.

Outcome assessment

Pain intensity was recorded on a 0–10 numerical scale before treatment and after 12 months. The supplied dataset consisted of four response patterns: 4 participants with baseline pain 8 and follow-up pain 2; 6 participants with 9 and 4; 7 participants with 10 and 3; and 3 participants with 9 and 3.

Statistical analysis

Descriptive statistics were calculated as means and standard deviations. The primary descriptive measure was the paired change in pain score. A 95% confidence interval (CI) was calculated for the mean change. Because the distribution of paired differences was non-normal on Shapiro–Wilk testing ($p < 0.001$), the Wilcoxon signed-rank test was used as the primary inferential sensitivity analysis, with the paired t-test reported for comparison. Statistical significance was defined as $p < 0.05$. Analyses were based on the 20 paired observations supplied by the author.

Results

All 20 participants had a lower pain score after 12 months. Baseline pain ranged from 8 to 10, whereas follow-up pain ranged from 2 to 4. The mean baseline score was 9.15 ± 0.75 and the mean follow-up score was 3.10 ± 0.72. The mean within-person reduction was 6.05 points (95% CI 5.66–6.44), representing a 66.1% reduction in mean pain intensity.

The paired t-test yielded $t(19) = 32.77$, $p < 0.001$. The Wilcoxon signed-rank test likewise showed a statistically significant reduction ($p < 0.001$). These inferential results should be interpreted as evidence of a within-person change during the observation period rather than evidence of a causal treatment effect (Table 1&2),(Figure 1& 2).

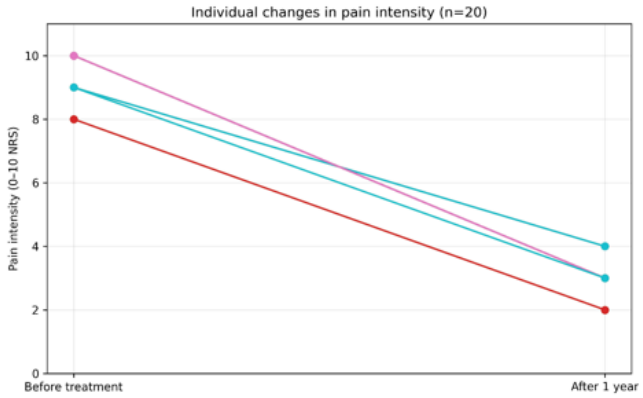

Figure 1 Individual paired changes in pain score from baseline to 12 months.

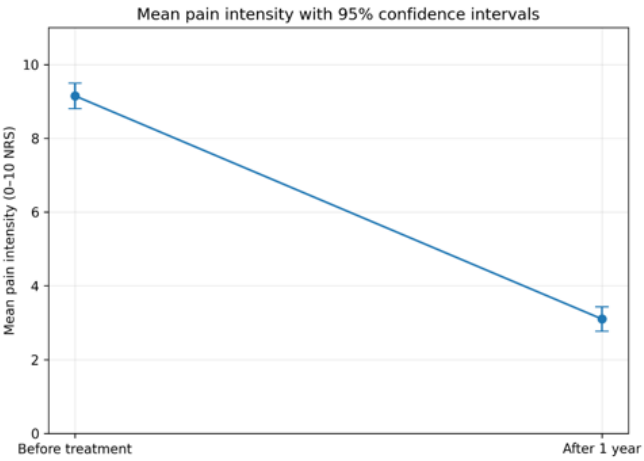

Figure 2 Mean pain score at baseline and after 12 months, with 95% confidence intervals.

Table 1 Pain scores before and after 12 months

Pattern	n	Baseline pain	12-month pain	Individual reduction	Percentage reduction
A	4	8	2	6	75.00%
B	6	9	4	5	55.60%
C	7	10	3	7	70.00%
D	3	9	3	6	66.70%

Note: Individual-level raw identifiers were not supplied; the table presents the four aggregate response patterns provided for analysis.

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Table 2 Summary statistics

Measure	Baseline	12 months	Change
n	20	20	20 paired observations
Mean pain score	9.15	3.1	−6.05
SD	0.75	0.72	0.83
95% CI for mean	8.80–9.50	2.76–3.44	5.66–6.44 reduction
Relative reduction in mean pain	—	—	66.10%

Discussion

In this 20-participant observational case series, pain intensity decreased substantially over 12 months. The mean score decreased from 9.15 to 3.10, an absolute reduction of 6.05 points and a 66.1% reduction in mean pain intensity. All participants showed a lower reported pain score at follow-up.

The direction of the observed change is broadly consistent with portions of the existing fibromyalgia cannabinoid literature. Randomized and observational studies have reported improvements in pain, fibromyalgia-related symptoms, sleep, or quality of life in some settings, although results vary by formulation, dose, route, outcome, and study design.[5-14] The 2026 meta-analysis by Lam et al. included 12 clinical studies and 1,248 participants and found a statistically significant pooled analgesic effect, but the authors rated the certainty of evidence as low because of heterogeneity and limited randomized evidence.[13] A 2026 registry case series likewise adds contemporary observational evidence on medical cannabis in fibromyalgia, but observational data remain vulnerable to confounding and expectancy effects.[15]

The present study differs from many prior investigations because it used a combined full-spectrum oral and topical protocol over a relatively long period. The oral preparation provided 2.5 mg THC and 1.25 mg CBD per drop, with a weight-based regimen of one drop per 10 kg twice daily. The topical preparation used the same nominal cannabinoid concentration but was administered to multiple body sites. Because several routes and formulations were used together, the observed change cannot be attributed to oral treatment, topical treatment, a particular cannabinoid, or a particular application site independently.

Several methodological limitations are important. First, there was no untreated or placebo control group, so the study cannot distinguish treatment effects from natural symptom fluctuation, regression to the mean, expectancy effects, changes in concurrent care, or other time-varying factors. Second, the sample was small and limited to women, which restricts generalizability. Third, only pain intensity was available for the quantitative analysis; validated multidimensional measures such as the Fibromyalgia Impact Questionnaire-Revised, sleep measures, fatigue measures, and quality-of-life measures were not supplied. Fourth, the exact amount of topical cream used per application was not supplied, preventing calculation of topical cannabinoid exposure. Fifth, diagnostic criteria, disease duration, concomitant medications, adherence, adverse events, and treatment discontinuations were not supplied. Finally, the use of intranasal and intravaginal application is a study-specific protocol and should not be interpreted as an established administration route for fibromyalgia without independent safety and efficacy evidence.

The statistical findings should also be interpreted in the context of the study design. The paired t-test and Wilcoxon signed-rank test both indicate a strong within-person change, but statistical significance does not establish causation. The non-normality of paired differences further supports emphasizing the Wilcoxon result and the effect estimate with its confidence interval rather than relying on a parametric p-value alone. Taken together, these observations support the value of further prospective research using standardized cannabinoid preparations, clearly quantified topical dosing, and predefined safety monitoring, validated fibromyalgia outcomes, and controlled study designs.

Safety considerations

The study dataset supplied for this manuscript did not contain a systematic adverse-event inventory, laboratory monitoring, treatment discontinuation log, or local tolerability assessment. Accordingly, this manuscript does not claim that treatment was free of adverse events. Published reviews describe adverse effects associated with medicinal cannabis that can include dizziness, drowsiness, dry mouth, and psychoactive effects.[3,13] The protocol's intranasal and intravaginal applications also warrant specific local tolerability and safety assessment in future controlled research.

Conclusion

Among 20 women with fibromyalgia observed for 12 months, self-reported pain intensity decreased from a mean of 9.15 to 3.10, corresponding to a mean reduction of 6.05 points and 66.1%. The findings are clinically notable as an observational signal but do not establish causality. Larger controlled studies with standardized formulations, quantified topical exposure, validated multidimensional outcomes, and prospective adverse-event monitoring are needed.

Data availability

The aggregate observations used for the statistical analysis are presented in Table 1 and summarized in Table 2. No separate participant-level dataset was supplied for deposition.

Author contributions

Patricia Beck Eichler Barker: conceptualization, methodology, investigation, data curation, formal analysis, writing—original draft, writing—review and editing.

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None.

Conflicts of interest

Patricia Beck Eichler Barker is listed by MedCrave as Editor-in-Chief of MOJ Clinical & Medical Case Reports. This editorial relationship should be disclosed to the journal and the manuscript should be handled independently under the journal's applicable conflict-of-interest and peer-review procedures. No other conflicts were supplied for this manuscript.

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References

1. Wolfe F, Clauw DJ, Fitzcharles MA, et al. 2016 revisions to the 2010/2011 fibromyalgia diagnostic criteria. *Semin Arthritis Rheum*. 2016;46(3):319–329.
2. Bourke SL, Schlag AK, O'Sullivan SE, et al. Cannabinoids and the endocannabinoid system in fibromyalgia: a review of preclinical and clinical research. *Pharmacol Ther*. 2022;240:108216.
3. Kurlyandchik I, Tiralongo E, Schloss J. Safety and efficacy of medicinal cannabis in the treatment of fibromyalgia: a systematic review. *J Altern Complement Med*. 2021;27(3):198–213.
4. Strand NH, Maloney J, Kraus M, et al. Cannabis for the treatment of fibromyalgia: a systematic review. *Biomedicines*. 2023;11(6):1621.
5. 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.
6. Van de Donk T, Niesters M, Kowal MA, et al. An experimental randomized study on the analgesic effects of pharmaceutical-grade cannabis in chronic pain patients with fibromyalgia. *Pain*. 2019;160(4):860–869.
7. Giorgi V, Bongiovanni S, Atzeni F, et al. Adding medical cannabis to standard analgesic treatment for fibromyalgia: a prospective observational study. *Clin Exp Rheumatol*. 2020;38 Suppl 123(1):53–59.
8. Bar-Lev Schleider L, Mechoulam R, Lederman V, et al. Prospective investigation of the safety and efficacy of medical cannabis in fibromyalgia. J Clin Med. 2019;8(6):807.
9. Giardina A, Palmieri R, Ponticelli M, et al. Is a low dosage of medical cannabis effective for treating pain related to fibromyalgia? A pilot study and systematic review. *J Clin Med*. 2024;13(14):4088.
10. Lopera V, Restrepo JC, Amariles P. Effectiveness and safety of cannabis-based products for medical use in patients with fibromyalgia syndrome: a systematic review. *Explor Res Clin Soc Pharm*. 2024;16:100524.
11. Wolfe F, Clauw DJ, Fitzcharles MA, et al. Fibromyalgia criteria and severity scales for clinical and epidemiological studies: a modification of the ACR preliminary diagnostic criteria for fibromyalgia. *J Rheumatol*. 2011;38(6):1113–1122.
12. Duarte GO, Feitosa MHR, Bringel FA, et al. Evaluation of the use of different forms of medical cannabis in the treatment of fibromyalgia: a systematic review. *EULAR Rheumatol Open*. 2026;2(1):344–352.
13. Lam PM, Wang F, Shing CH, et al. Analgesic effect of cannabinoids for fibromyalgia: a systematic review and meta-analysis. *Pain Physician*. 2026;29(2):95–107.
14. Varadpande M, Erridge S, Aggarwal A, et al. UK Medical Cannabis Registry: a case series analysing clinical outcomes of medicinal cannabis therapy for fibromyalgia. *Clin Rheumatol*. 2026.

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