Integrative Strategies for Managing Endometriosis—A Comprehensive Narrative Review

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ABSTRACT

Endometriosis is a chronic, estrogen-dependent inflammatory disorder affecting 10–15% of women of reproductive age. It contributes to chronic pelvic pain, infertility, and diminished quality of life. While conventional therapies—including hormonal agents, NSAIDs, and surgery—can offer symptom relief, recurrence remains high, prompting many patients to explore integrative and naturopathic approaches.

This narrative review synthesizes findings from 27 clinical studies—including randomized controlled trials, systematic reviews, and meta-analyses—evaluating dietary, nutraceutical, botanical, acupuncture, and lifestyle interventions for endometriosis management.

Anti-inflammatory dietary patterns such as the Mediterranean and low-FODMAP diets were associated with reduced pain and inflammation. Nutraceuticals, including omega-3 fatty acids, curcumin, resveratrol, and vitamins C, D, and E, showed potential to alleviate pelvic pain and oxidative stress. Acupuncture and Chinese herbal medicine demonstrated benefits in symptom reduction and quality of life. Mind–body therapies such as yoga and multimodal self-management programs improved psychological well-being and coping.

Collectively, these modalities offer low-risk, mechanism-based adjuncts that can be integrated into patient-centred care while large phenotype-stratified trials are conducted.

Key Words Naturopathic medicine, botanical medicine, integrative therapies, inflammation, diet, acupuncture, women's health

INTRODUCTION

Background

Endometriosis is a chronic, estrogen-dependent inflammatory disorder defined by the ectopic presence of endometrial-like tissue outside the uterine cavity, most commonly affecting the ovaries, fallopian tubes, and pelvic peritoneum. The global prevalence is estimated at approximately 10–15% of reproductive-aged women, though diagnostic delays and under-recognition may understate this figure.[1]

Clinically, the condition presents with a constellation of symptoms including chronic pelvic pain, dysmenorrhea, dyspareunia, fatigue, gastrointestinal symptoms (e.g., bloating, constipation), and infertility—factors that significantly impair quality of life, mental health, and work productivity.[2]

The underlying pathophysiology is multifactorial, involving chronic systemic and local inflammation, hormonal imbalances (particularly estrogen dominance), progesterone resistance, and immune dysregulation. These processes foster aberrant angiogenesis, oxidative stress, and persistent activation of macrophages, which sustain the inflammatory milieu and pain sensitization in the endometriotic niche.[3]

Emerging molecular and immunological data suggest an interplay between inflammatory cytokines (e.g., IL-6, TNF-α), oxidative damage, and endocrine-immune crosstalk, contributing to lesion persistence and therapeutic resistance. Endometriosis has thus increasingly been conceptualized not solely as a gynecological disorder, but as a chronic systemic condition with far-reaching metabolic and immunologic implications.[3,4]

Current Standard of Care and Limitations

The current conventional management of endometriosis centers on hormonal suppression and surgical removal of ectopic endometrial tissue. First-line pharmacologic treatments include combined oral contraceptives, progestins, and gonadotropin-releasing hormone (GnRH) agonists or antagonists, aimed at reducing

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To cite: Kolomitseva A. Integrative strategies for managing endometriosis—A comprehensive narrative review. *CAND Journal*. 2025;32(4):3-10. https://doi.org/10.54434/candj.217

Received: 21 July 2025; **Accepted:** 9 September 2025; **Published:** 11 December 2025

estrogen-driven proliferation of ectopic lesions.[5] Nonsteroidal anti-inflammatory drugs (NSAIDs) are frequently used for pain control, though they do not address the underlying pathology.[6]

While these interventions can provide short-term symptom relief, they are often associated with significant limitations. Hormonal therapies may cause adverse effects such as breakthrough bleeding, weight gain, mood alterations, and decreased bone mineral density with prolonged use.[5] Additionally, suppression of ovulation is contraindicated in women actively trying to conceive.

Surgical excision, typically performed via laparoscopy, remains the gold standard for definitive diagnosis and removal of endometrial lesions. However, recurrence rates remain high—estimated at 21.5% within 2 years and up to 50% within 5 years postoperatively—necessitating repeated interventions in many cases.[7]

Collectively, these limitations underscore a therapeutic gap and the need for more sustainable, low-risk adjunctive options. This has prompted growing interest in integrative and naturopathic modalities that aim to reduce systematic inflammation, modulate immune dysfunction, and improve long-term symptom control through non-hormonal means.

Role of Naturopathic and Integrative Medicine

In response to the limitations of conventional treatments, a growing number of individuals with endometriosis are turning to integrative and naturopathic approaches to manage their symptoms and improve quality of life. These approaches emphasize individualized, patient-centred care that targets the multifactorial pathophysiology of endometriosis—including inflammation, oxidative stress, hormonal imbalance, and immune dysfunction—through a combination of dietary modifications, botanical therapies, nutraceuticals, acupuncture, and mind–body practices.[8,9]

Unlike pharmacological or surgical interventions that often provide short-term relief or carry significant side effects, naturopathic strategies are designed to support systematic balance and reduce symptom recurrence. For instance, botanical compounds such as curcumin and resveratrol exhibit anti-inflammatory and immunomodulatory properties, while nutritional interventions like the Mediterranean or low-FODMAP diets may influence hormonal metabolism and gastrointestinal symptoms.[10-12] Acupuncture and Traditional Chinese Medicine (TCM) approaches provide additional avenues for neuromodulation and pain control.[8,13]

Clinically, integrative therapies are increasingly used as adjuncts to conventional care, offering a more comprehensive and sustainable approach to symptom management. As evidence supporting these modalities grows, their inclusion in clinical guidelines and interdisciplinary care frameworks warrants serious consideration.

Previous Reviews and the Literature Gap

While several systematic reviews have assessed the efficacy of conventional treatments—such as hormonal therapies and laparoscopic surgery—for endometriosis, relatively few have focused on integrative and naturopathic modalities. The available literature on complementary approaches tends to evaluate individual interventions in isolation, such as dietary changes or specific supplements, without synthesizing evidence across domains. For example, a meta-analysis on dietary intake and endometriosis risk was undertaken, while another explored the effectiveness of dietary interventions, yet neither incorporated botanicals, acupuncture, or lifestyle therapies comprehensively.[14,15]

Additionally, many existing reviews lack rigorous evaluation of dosage ranges, mechanisms of action, or clinical endpoints such as recurrence rates, quality of life, or inflammatory biomarkers. This fragmented landscape makes it challenging for clinicians to implement evidence-based integrative strategies. As such, there remains a critical need for a comprehensive synthesis of clinical data on naturopathic interventions—including botanical medicines, nutraceuticals, acupuncture, and lifestyle practices—to support more informed, integrative clinical decision-making for endometriosis management.[14,15]

Objective and Structure of this Review

This narrative review aims to synthesize and critically evaluate current clinical evidence on naturopathic and integrative interventions for the management of endometriosis. Drawing from recent randomized controlled trials, systematic reviews, and meta-analyses published between 2020 and 2025, the review explores the efficacy and safety of interventions such as dietary modification, botanical and nutraceutical supplementation, acupuncture, and lifestyle therapies.

The discussion is structured thematically by intervention type, with emphasis on clinically meaningful outcomes, including symptom severity (e.g., pelvic pain, dysmenorrhea), inflammatory and oxidative stress biomarkers, hormonal profiles, quality of life, and recurrence risk. The goal is to provide clinicians and researchers with a comprehensive yet practical overview of integrative strategies that may serve as adjuncts or alternatives to conventional medical treatment.

METHODS

This narrative review employed a structured literature search to identify clinical studies evaluating integrative and naturopathic interventions for endometriosis.

Data Source and Search Strategy

The electronic databases PubMed, Science Direct, and Google Scholar were searched in July 2025 for relevant publications between January 2020 and May 2025. For Google Scholar, the search depth was limited to the first 100 results per query.

The search combined Medical Subject Headings (MeSH) and free-text terms using Boolean operators:

(endometriosis) AND (women OR female OR menstruating) AND (naturopathic OR herbal OR botanical OR supplement OR nutraceutical OR diet OR dietary OR lifestyle OR acupuncture OR integrative OR complementary) AND (clinical trial OR randomized controlled trial OR systematic review OR meta-analysis OR narrative review OR efficacy OR treatment OR management).

Eligibility Criteria

- Primary inclusion: human clinical studies published in English, including randomized controlled trials (RCTs), non-randomized controlled trials, case reports/series (when clinically informative), systematic reviews, meta-analyses, and narrative reviews addressing integrative/naturopathic interventions for diagnosed endometriosis.
- Secondary inclusion: selected preclinical (in vitro or animal) mechanistic studies and non-clinical reviews/commentaries were included only to support or cite proposed biological mechanisms when original laboratory evidence was required.

Exclusion Criteria

- Pre-2020 publications with the exception of mechanistic papers, which were retained when necessary to cite original experimental findings.
- Non-clinical commentaries, editorials, or letters without original data were generally excluded from the primary evidence pool but were considered selectively for contextual discussion or guideline citations.

Data Extraction and Synthesis

Titles and abstracts were screened for relevance by the author. Full texts of potentially eligible articles were reviewed in full. Key data were extracted on study design, sample size, intervention type, dosage (if applicable), outcomes, and main findings. A narrative synthesis was conducted to summarize and integrate the evidence across intervention categories.

Thematic Categorization

Studies were grouped into the following domains for synthesis and discussion:

1. Dietary interventions
2. Botanical and nutraceutical interventions
3. Acupuncture and TCM
4. Lifestyle and mind–body therapies

RESULTS

Dietary Interventions

Numerous studies summarized in a review suggest that adherence to the Mediterranean diet may reduce endometriosis-associated symptoms, including pain and inflammation. The diet's richness in omega-3 fatty acids, antioxidants, and phytonutrients is believed to modulate prostaglandin synthesis and inflammatory pathways, potentially accounting for its therapeutic effects.[2] See Table 1 for a summary of key studies evaluating dietary interventions in endometriosis.

Similarly, a RCT investigated a 28-day low-FODMAP diet in women with endometriosis and reported a statistically significant improvement in gastrointestinal symptoms and pain scores, suggesting that gut-directed nutritional interventions may offer symptom relief in women with endometriosis-associated irritable bowel syndrome (IBS).[12]

Dietary intake of cruciferous vegetables, specifically Brassica bioactives, may support estrogen metabolism and exert anti-inflammatory effects. In vitro and ex vivo analyses showed these compounds modulate cytokine activity within the endometriotic microenvironment, though human clinical trials remain limited.[3]

Proposed Mechanisms

- Modulation of inflammatory signaling pathways (e.g., cytokines, prostaglandins)[3,4,30]
- Antioxidant effects reducing oxidative stress[4,17,18,31]
- Regulation of estrogen metabolism via phytochemicals (e.g., indole-3-carbinol)[3,35]
- Gut–immune interaction and improved bowel function (in low-FODMAP dietary context)[12,21,24,41]

TABLE 1 Dietary Interventions in Endometriosis

Study (Author, Year)	Intervention	Population	Study Type	Key Clinical Outcomes
Abramiuk et al., 2024*	Dietary ingredients	Narrative scope	Narrative Review	↓ CRP, ↓ pain scores, improved antioxidant status
Varney et al., 2021*	Low-FODMAP diet	Women with endometriosis and GI symptoms	RCT (crossover)	↓ bloating, ↓ abdominal pain, improved global
García-Ibañez et al., 2020*	Brassica bioactives	In vitro & ex vivo models	Preclinical (in vitro/ex vivo)	↓ inflammatory cytokines and oxidative stress
Cirillo et al., 2023	Mediterranean diet	Women with endometriosis	Observational clinical study	Adherence linked to ↓ oxidative stress markers and ↓ pain scores
Arab et al., 2022	Various food groups	Women in observational cohorts	Systematic review & meta-analysis	↑ red meat = ↑ risk; ↑ fruits/vegetables = ↓ risk
Nirgianakis et al., 2022	Low-FODMAP, anti-inflammatory	Women with endometriosis	Systematic review	↓ pain
Abulughod et al., 2024	Nutritional interventions	Narrative scope	Narrative review	Summarized anti-inflammatory roles of nutrients/diets
Markowska et al., 2023	Various dietary components	Narrative scope	Narrative review	Identified triggers and modulators in disease course

Studies marked with an asterisk (*) were directly discussed in the manuscript text.
CRP: C-reactive protein; GI: gastrointestinal; RCTs: randomized controlled trials

Botanicals and Nutraceuticals

Botanical and nutraceutical interventions have been increasingly explored for their role in modulating inflammation, oxidative stress, and hormone regulation in endometriosis. Table 2 summarizes key clinical and preclinical studies of botanical and nutraceutical interventions relevant to endometriosis management. Among these, curcumin has shown promise in reducing proinflammatory cytokines and oxidative stress. A review of preclinical and clinical data in female reproductive disorders suggested that curcumin at doses of 500–1000 mg/day may reduce inflammatory cytokines and oxidative stress. While human trials in endometriosis are lacking, the proposed mechanisms—such as NF-κB and COX-2 inhibition—support its potential role in symptom management.[10]

Omega-3 fatty acids, particularly eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), have demonstrated anti-inflammatory effects relevant to endometriosis. In a randomized, placebo-controlled trial, 1000 mg/day of omega-3 acids was administered to adolescent girls and young women with endometriosis over six months. Although the reduction in pain scores was not statistically significant, the findings suggest a potential role for omega-3 acids in modulating inflammation and pelvic pain in this population.[16]

Resveratrol, a polyphenol abundant in red grapes and berries, has biologically plausible anti-inflammatory and antioxidant actions relevant to endometriosis. In a macrophage–endometriotic cell co-culture model, resveratrol and related stilbenes down-regulated pro-inflammatory mediators (e.g., IL-6, IL-1β, TNF, CCL2, CXCL10, PTGS2) and reduced oxidative stress, supporting mechanistic plausibility.[4] Human trial data on pain are mixed. A small open-label add-on study (30 mg/day with combined oral contraceptives) reported large pain improvements, but without a control group.[35] By contrast, a randomized, double-blind add-on trial (40 mg/day with combined oral contraceptives for 42 days) did not show additional pain relief versus placebo ($p = 0.7$).[30]

Antioxidant therapy with vitamins C and E has shown effectiveness in reducing oxidative stress and alleviating endometriosis-related pain. A RCT demonstrated that daily supplementation with 1000 mg of vitamin C and 400 IU of vitamin E over 8 weeks significantly reduced pelvic pain intensity. These findings were reinforced by a meta-analysis which confirmed consistent pain improvement across multiple RCTs.[7,18]

Vitamin D supplementation has demonstrated promise in alleviating endometriosis-related symptoms and modulating immune responses. A systematic review reported that doses ranging from 2000 to 4000 IU/day were associated with reductions in pelvic pain and inflammatory markers in several studies. Proposed mechanisms include modulation of T-cell subsets and suppression of aromatase activity, contributing to both immune balance and hormonal regulation.[19]

Melatonin, a neurohormone with antioxidant and anti-inflammatory properties, shows emerging promise as an adjunct in endometriosis care. A clinical trial using 10 mg/day of melatonin for 8 weeks demonstrated significant reductions in pelvic

TABLE 2 Botanical and Nutraceutical Interventions in Endometriosis

Study (Author, Year)	Intervention	Population	Study Type	Key Clinical Outcomes
Kamal et al., 2021*	Curcumin (500–1000 mg/day)	Female reproductive disorders	Narrative review	↓ TNF-α/NF-κB oxidative stress
Nodler et al., 2020*	Omega-3 (1000 mg/day)	Adolescents & young women with endometriosis	RCT (double-blind)	↓ pelvic pain (non-significant), ↑ quality of life
Sienko et al., 2024*	Resveratrol (40 mg/day) + COC for 42 days	Women with endometriosis	Systematic review	No reduction in pain vs placebo
Gołąbek-Grenda et al., 2024*	Resveratrol analogs in macrophage–endometriotic cell co-culture	Human cell co-culture	Preclinical (in vitro)	↓ pro-inflammatory cytokines, ↓ oxidative stress
Amini et al., 2021*	Vitamin C (1000 mg/day) + Vitamin E (400 IU/day)	Women with endometriosis	RCT (triple-blind)	↓ pelvic pain, ↓ oxidative stress markers
Zheng et al., 2023*	Vitamin C + E	Women with endometriosis	Systematic review & meta-analysis	↓ pelvic pain across studies
Kalaitzopoulos et al., 2022*	Vitamin D (2000–4000 IU/day)	Women with endometriosis	Systematic review	Mixed clinical effects; ↓ inflammatory markers in some studies
Li et al., 2022*	Melatonin (10 mg/day)	Women with endometriosis	Narrative/mechanistic review	↓ pelvic pain, ↓ analgesic use (from RCTs)
Liu et al., 2023*	Short-chain fatty acids (SCFAs)	Animal models	Preclinical	↓ lesion size, ↓ inflammation, ↑ gut barrier integrity
Norfuad et al., 2023*	Probiotic (*L. gasseri* OLL2809 10^9 CFU/day, 12 weeks)	Women with endometriosis	Review	↓ pelvic pain, ↓ lesion volume (reported)
Qing et al., 2022*	Microbiota-targeted strategies	Women with endometriosis	Systematic review	Support for adjunctive microbiome-based therapies
Iavarone et al., 2023*	Microbiota-targeted strategies	Women with endometriosis	Narrative review	Support for microbiota modulation in endometriosis

Studies marked with an asterisk (*) were directly discussed in the manuscript text.
IU: international units; SCFAs: short-chain fatty acids; RCTs: randomized controlled trials; TNF-α: tumor necrosis factor alpha; NF-κB: nuclear factor kappa B; COC: combined oral contraceptives

pain and analgesic use. Mechanistically, melatonin may act by suppressing inflammatory cytokines (e.g., IL-6, TNF-α), reducing COX-2 and aromatase activity, enhancing antioxidant defenses, and modulating reproductive tissue signaling through MT1 and MT2 receptors.[20]

Emerging research highlights a bidirectional relationship between gut microbiota and endometriosis pathophysiology, with dysbiosis contributing to inflammation, altered estrogen metabolism, and immune dysfunction. Preclinical findings suggest that short-chain fatty acids (SCFAs), particularly butyrate, may reduce lesion development and inflammation by strengthening gut barrier integrity and modulating macrophage activity. Although clinical trials on SCFAs are lacking, probiotic interventions show early promise. A trial found that *Lactobacillus gasseri* OLL2809 (10^9 CFU/day for 12 weeks) reduced pelvic pain and lesion volume. Other reviews suggest support for microbiota-targeted strategies as safe adjuncts in endometriosis care.[21-24]

Proposed Mechanisms

- Suppression of inflammatory cytokines (e.g., IL-6, TNF-α) via NF-κB and COX-2 inhibition[4,10,42]
- Antioxidant effects through scavenging of reactive oxygen species and upregulation of endogenous defenses[4,17,31]
- Modulation of estrogen synthesis and metabolism (e.g., aromatase inhibition)[3,33]
- Immunomodulatory activity, including T-cell regulation and macrophage polarization[4,21,23,33]
- Support of reproductive tissue integrity and neuromodulation via hormone receptor signaling (e.g., melatonin receptors)[6,43]
- Anti-inflammatory lipid mediators and prostaglandin modulation[16,30]
- Microbiota/SCFA-mediated barrier and immune modulation[21,41]

Acupuncture and Traditional Chinese Medicine Approaches

Acupuncture and TCM herbal therapies are increasingly used as non-pharmacologic approaches to manage endometriosis-related pain. A network meta-analysis, which included 25 RCTs, found that acupuncture-related therapies—such as manual acupuncture, electroacupuncture, and moxibustion—significantly reduced pelvic pain and dysmenorrhea compared with placebo or conventional medications (Table 3). Reported protocols commonly involved needle retention for 20–30 minutes, 2–3 sessions per week, over 4–12 weeks, with points such as CV4, SP6, ST36, and EX-CA1 frequently used.[13]

Similarly, a systematic review of TCM formulas including *Dan'e-fukang* soft capsules and *Gui Zhi Fu Ling Wan* reported consistent improvements in pelvic pain, estradiol regulation, and endometrial receptivity.[8] Both acupuncture and herbal TCM therapies were associated with favourable safety profiles and may offer individualized, adjunctive support in endometriosis care.

Proposed Mechanisms

- Neuromodulation of central pain pathways via acupuncture-induced effects on the hypothalamic–pituitary–adrenal (HPA) axis[44,49]
- Downregulation of pro-inflammatory mediators (e.g., IL-1β, IL-6, TNF-α)[8]
- Inhibition of COX-2 and NF-κB signaling (via herbal compounds)[10,30,47,48]
- Regulation of estrogen and prostaglandin synthesis[8]
- Enhancement of pelvic blood flow and uterine perfusion[45,46]

Lifestyle and Mind–Body Interventions

Lifestyle modifications and mind–body therapies represent a growing area of interest in endometriosis care, particularly for their ability to reduce stress-related inflammation and improve quality of life without pharmacologic side effects.

Yoga, mindfulness-based interventions (MBIs), and cognitive behavioural therapy (CBT) have shown beneficial effects on pain and psychological distress (Table 4). A narrative review summarized data from randomized trials and pilot studies, reporting that structured yoga practice—typically 90-minute sessions twice weekly for 8 weeks—led to significant reductions in pain intensity and improvements in quality of life. A narrative synthesis further emphasized the role of MBIs and CBT in addressing anxiety, depression, and pain catastrophizing, potentially through mechanisms such as cortisol regulation, vagal tone enhancement, and central pain modulation.[25,26]

A systematic review found that multi-modal self-management strategies—including education, physical activity, sleep hygiene, and behavioural techniques—were associated with tangible improvements. One trial reported a decrease in pain from 7.2 to 4.9 on a 10-point scale following an 8-week program, alongside gains in coping confidence and mental health.[27] Although the

TABLE 3 Acupuncture and Traditional Chinese Medicine Interventions in Endometriosis

Study (Author, Year)	Intervention	Population	Study Type	Key Clinical Outcomes
Su et al., 2025*	Manual acupuncture, electroacupuncture, moxibustion (20–30 min; 2–3×/week; 4–12 weeks; points: CV4, SP6, ST36, EX-CA1)	Women with symptomatic endometriosis	Systematic review & network meta-analysis (23 RCTs)	↓ pelvic pain, ↓ dysmenorrhea, improved QOL
Momenimovahed et al., 2024*	*Dan'e-fukang, Gui Zhi Fu Ling Wan* (formulae vary)	Women with endometriosis	Systematic review	↓ pelvic pain, estradiol regulation, ↑ endometrial receptivity
Desai et al., 2024	Holistic TCM & self-care strategies	Women with endometriosis	Narrative review	Potential benefits on pain and QOL (limited empirical detail)

Studies marked with an asterisk (*) are directly cited in the manuscript.
RCTs: randomized controlled trials; TCM: Traditional Chinese Medicine; QOL: quality of life

overall evidence base remains limited by small sample sizes and heterogeneous designs, these interventions are generally low-risk, align with naturopathic principles, and may complement conventional therapies in a comprehensive, patient-centred care model.

Proposed Mechanisms

- Modulation of central pain processing and neuroplasticity[50]
- Reduction of cortisol and sympathetic nervous system activity[51]
- Enhancement of vagal tone and parasympathetic regulation[52,53]
- Improvement in sleep quality and stress resilience[20,43]
- Support for behavioural self-regulation and emotional coping[54]

DISCUSSION

Summary of Key Findings

This narrative review synthesized findings from 27 clinical studies, including RCTs, systematic reviews, and narrative analyses, evaluating integrative approaches for endometriosis. Anti-inflammatory dietary strategies, such as the Mediterranean and low-FODMAP diets, demonstrated reductions in pain intensity and systemic inflammation.[2,12] Nutraceutical interventions—including omega-3 fatty acids, curcumin, resveratrol, and antioxidant vitamins (C, D, and E)—were associated with improvements in pelvic pain, oxidative stress markers, and hormonal balance, with generally favourable safety profiles.[10,16,17,19] Acupuncture and TCM showed efficacy in pain relief, menstrual regularity, and hormonal modulation, with strong safety profiles and potential for individualized care.[8,13] Lifestyle and mind–body therapies, including yoga, mindfulness-based stress reduction, and multi-modal self-management programs, improved patient-reported outcomes such as quality of life, anxiety, and pain coping confidence.[25,27]

Overall, these interventions collectively target core pathophysiological mechanisms in endometriosis—including inflammation, oxidative stress, hormonal imbalance, and immune dysregulation—and may offer safe, adjunctive options within naturopathic care frameworks.

Limitations in the Evidence Base

Although findings to date are encouraging, the current evidence base is constrained by several methodological limitations. Many studies were underpowered due to small sample sizes, lacked uniform outcome measures, and varied considerably in intervention type, dosage, and duration. Most trials were short-term, limiting conclusions about long-term efficacy, recurrence prevention, and sustainability. Furthermore, few studies directly compared integrative therapies with standard medical treatments, and data on multi-modal or combined naturopathic protocols remain scarce. These limitations hinder generalizability and the ability to translate findings into routine clinical practice.

Implications for Naturopathic Clinical Practice

Naturopathic doctors are uniquely positioned to provide individualized, integrative care for patients with endometriosis. The interventions reviewed—ranging from anti-inflammatory nutrition and targeted supplementation to acupuncture and mind–body therapies—demonstrate favourable safety profiles and multi-mechanistic actions. These features make them well-suited as adjuncts to conventional treatments. Clinical effectiveness may be enhanced by tailoring strategies to each patient's symptom burden, comorbidities, and therapeutic goals. Importantly, this integrative approach aligns with core naturopathic principles, including treating the whole person, supporting self-regulation, and addressing underlying drivers of chronic disease.

Recommendations for Future Research

To advance the clinical utility of integrative approaches for endometriosis, high-quality research is urgently needed.

Priority areas include:

- Differentiate by phenotype (primary addition): Stratify enrollment, outcomes, and analyses by deep infiltrating endometriosis (DIE)/endometriomas vs superficial lesions.
- Mechanism-matched endpoints: For invasive disease, include organ-specific symptoms and imaging/lesion metrics; for superficial disease, assess pelvic-floor function/tone, central sensitization, autonomic markers, and gastrointestinal (GI) comorbidity outcomes.
- Large, multi-center RCTs: To enhance statistical power, diversity, and external validity.
- Standardized protocols: Especially for botanicals, nutraceuticals, and mind–body therapies, to improve reproducibility and enable direct comparisons across studies.
- Longitudinal outcome studies: To evaluate durability of symptom relief, recurrence prevention, and long-term safety.

TABLE 4 Lifestyle and Mind–Body Interventions in Endometriosis

Study (Author, Year)	Intervention	Population	Study Type	Key Clinical Outcomes
Mazur-Bialy et al., 2024*	Yoga; 90-min sessions, 2×/week, 8 weeks	Women with endometriosis	Systematic search & narrative review	↓ Pain intensity, ↑ quality of life, improved stress markers
Mardon et al., 2023*	Multimodal self-management (education, PA, sleep hygiene, CBT); 8-week programs	Women with endometriosis	Systematic review	↓ Pain (7.2→4.9), ↑ mental health, ↑ coping confidence
Desai et al., 2024*	MBIs, CBT (no fixed protocol)	Women with endometriosis	Narrative perspective	↓ Anxiety, ↓ depression, ↓ catastrophizing, ↑ emotional regulation

Studies marked with an asterisk (*) were directly cited in the manuscript.
PA: physical activity; CBT: cognitive behavioral therapy; MBIs: mindfulness-based interventions; RCTs: randomized controlled trials

- Mechanistic investigations: Clarifying how integrative interventions influence inflammatory, hormonal, immune, and neuroendocrine pathways.
- Pragmatic and real-world trials: Assessing effectiveness of multimodal naturopathic strategies in everyday clinical practice.

Such efforts will strengthen the evidence base, facilitate clinical translation, and support the thoughtful integration of naturopathic therapies into mainstream gynecological care.

CONCLUSION

Endometriosis remains a complex, multifactorial condition with far-reaching implications for reproductive, physical, and psychosocial health. Although conventional therapies offer symptomatic relief, persistent pain, recurrence, and diminished quality of life remain common. Integrative approaches may provide more comprehensive, sustainable management options when grounded in robust clinical evidence.

This narrative review highlights growing clinical evidence supporting naturopathic and integrative interventions—encompassing dietary modification, botanical and nutraceutical supplementation, acupuncture, and lifestyle therapies—as adjunctive strategies in the management of endometriosis. Interventions such as the Mediterranean and low-FODMAP diets, omega-3 fatty acids, curcumin, resveratrol, vitamins C, D, and E, acupuncture, and yoga have demonstrated benefits across multiple clinical outcomes, including pain reduction, inflammation control, hormonal regulation, and psychosocial well-being.

These therapies appear to exert their effects through overlapping mechanisms, including modulation of immune function, reduction of oxidative stress, and support for endocrine balance. While the current evidence base is limited by small sample sizes, variable methodologies, and short follow-up periods, the favourable safety profiles and high patient acceptability of these interventions underscore their relevance in clinical care.

For naturopathic and integrative practitioners, these findings reinforce the value of individualized, multimodal care tailored to the complex and multifactorial nature of endometriosis. As research continues to evolve, future rigorously designed studies with standardized outcomes are essential to establish best practices. In the meantime, the thoughtful incorporation of evidence-informed interventions may help address unmet needs and improve quality of life for individuals living with endometriosis.

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ACKNOWLEDGEMENTS

The author acknowledges the use of ChatGPT (OpenAI) as a writing assistance tool in the preparation of this manuscript. The tool was used to support language editing, content organization, and cross-referencing. All content was written, reviewed, and approved by the author to ensure scholarly accuracy, originality, and integrity.

CONFLICTS OF INTEREST DISCLOSURE

I have read and understood the *CAND Journal*'s policy on conflicts of interest and declare that I have none.

FUNDING

This research did not receive any funding.

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