**SIERADZKA, Izabela, WAJDA, Katarzyna, MIKA, Wiktoria and SŁOWIK , Justyna. Endometriosis as a Social Challenge: The Role of Pain Management Clinics and Multidisciplinary Approach in Improving Patients' Quality of Life.** ***Journal of Education, Health and Sport*****. 2025;86:66649. eISSN 2391-8306.**
**https://doi.org/10.12775/JEHS.2025.86.66649**
**https://apcz.umk.pl/JEHS/article/view/66649**

**The journal has had 40 points in Minister of Science and Higher Education of Poland parametric evaluation. Annex to the announcement of the Minister of Education and Science of 05.01.2024 No. 32318. Has a Journal's Unique Identifier: 201159. Scientific disciplines assigned: Physical culture sciences (Field of medical and health sciences); Health Sciences (Field of medical and health sciences).**
**Punkty Ministerialne 40 punktów. Załącznik do komunikatu Ministra Nauki i Szkolnictwa Wyższego z dnia 05.01.2024 Lp. 32318. Posiada Unikatowy Identyfikator Czasopisma: 201159. Przypisane dyscypliny naukowe: Nauki o kulturze fizycznej (Dziedzina nauk medycznych i nauk o zdrowiu); Nauki o zdrowiu (Dziedzina nauk medycznych i nauk o zdrowiu).** 
**The authors declare that there is no conflict of interests regarding the publication of this paper.**
**Received: 16.11.2025. Revised: 08.12.2025. Accepted: 08.12.2025. Published: 19.12.2025.**

# Endometriosis as a Social Challenge: The Role of Pain Management Clinics and Multidisciplinary Approach in Improving Patients' Quality of Life

**Izabela Sieradzka**
https://orcid.org/0009-0004-3849-9844
Provincial Clinical Hospital No. 2 St. Jadwiga the Queen in Rzeszów, Poland

**Katarzyna Wajda**
https://orcid.org/0009-0008-6631-8923
University of Rzeszów al. Tadeusza Rejtana 16C, 35-310 Rzeszów, Poland

**Wiktoria Mika**
https://orcid.org/0009-0007-6853-5342
Provincial Clinical Hospital No. 2 St. Jadwiga the Queen in Rzeszów, Poland

**Justyna Słowik**
https://orcid.org/0009-0006-9219-8377
Provincial Clinical Hospital No. 2 St. Jadwiga the Queen in Rzeszów, Poland

**Abstract**

**Background:** Endometriosis is a chronic, estrogen-dependent inflammatory disease characterized by the presence of endometrial-like tissue outside the uterine cavity. It affects approximately 10% of women of reproductive age and is a major cause of chronic pelvic pain, negatively impacting physical, mental, and social functioning.

**Objective:** The narrative review aimed to analyze the effectiveness of multidisciplinary pain management strategies in women with endometriosis and their impact on quality of life.

**Methods:** A comprehensive review of 28 publications published between 2017 and 2025 from databases was conducted using the keywords endometriosis, chronic pelvic pain, multidisciplinary treatment and pain therapy, and quality of life. Data regarding pharmacotherapy, surgical complications, physiotherapy, cognitive-behavioral therapy, lifestyle modification, and complementary methods for pain management were analyzed. Issues related to disease risk and the impact of interventions on patients' lives were also analyzed.

**Results:** Pharmacotherapy, including NSAIDs, opioids, antidepressants, and anticonvulsants, is the cornerstone of pain management in endometriosis. Hormonal therapy, surgery, physiotherapy, cognitive behavioral therapy, an anti-inflammatory diet, and complementary methods such as acupuncture and TENS are also considered. Younger patients, advanced disease stages (III-IV), deeply infiltrating lesions, and longer time since surgery are significant risk factors for recurrence. A multidisciplinary approach significantly improves symptom control and quality of life in physical, mental and social aspects.

**Conclusions:** Individualized, multidisciplinary strategies are crucial for pain control and improving the quality of life for women with endometriosis. Well-planned health campaigns and inclusion of specialists from various fields enables early, accurate diagnosis and comprehensive treatment that not only alleviates symptoms but also supports patients' daily and social functioning.

**Keywords:** endometriosis, chronic pelvic pain, multidisciplinary treatment, pain therapy, quality of life.

## 1. Introduction

### Epidemiology

Endometriosis affects approximately 10% of women of reproductive age worldwide and is one of the leading causes of chronic pelvic pain [1].

Analysis of data from 1990–2021 shows that the global burden of endometriosis increased primarily due to population growth, despite decreases in age-standardized prevalence, incidence, and DALY rates. The disease burden rose across all age groups from 15–54 years, with the highest incidence observed in women aged 20–24 years and the greatest overall burden in those aged 25 - 29 years, highlighting its significant impact on women of reproductive age. These findings underscore the importance of a holistic, multidisciplinary approach to the care of patients with endometriosis, addressing not only diagnosis and pain management but also reproductive health [2].

**Pathophysiology**

Following the epidemiology, the pathophysiological mechanisms are crucial to understand. Endometriosis is a chronic, estrogen-dependent gynecological disorder characterized by the presence of endometrial-like tissue outside the uterine cavity [1].

The location of lesions in endometriosis is diverse. They most commonly occur in the ovaries, next posterior broad ligament, the anterior cul-de-sac, the posterior cul-de-sac, and the sacrouterine ligament. Literature data support Sampson's hypothesis, which implicates retrograde menstrual blood flow as a source of endometriotic lesions. Another explanation for the presence of endometriosis foci in the uterosacral ligaments and rectouterine pouch is the Müllerian duct remnant theory. This hypothesis posits that abnormal migration or differentiation of cells derived from these embryonic structures may lead to the formation of foci resembling endometrial tissue in the posterior pelvis. Factors influencing the implantation of retrograde menstrual debris include, among others: the accumulation of peritoneal fluid depending on uterine position, the type of epithelial cells at the implantation site, the specific susceptibility of the ovaries, the route of cell migration, and the mobility of pelvic structures [3].

The chronic inflammatory state caused by the overproduction of prostaglandins, estrogens, cytokines, and growth factors impairs the function of the ovaries, fallopian tubes, and endometrium. Even in mild forms of the disease, oocyte quality deteriorates, partly due to mitochondrial dysfunction. Inflammatory changes in the peritoneal fluid may also negatively affect sperm motility and function. Additionally, progesterone resistance, excessive estrogen activity, disturbances in the hypothalamic-pituitary-ovarian axis, and elevated prolactin levels are commonly observed. Surgical treatment may further reduce ovarian reserve and cause adhesions, further limiting fertility. As a result, endometriosis disrupts ovulation, fertilization, and embryo implantation [4].

**Symptomatology**

Studies indicate that women diagnosed with endometriosis much more frequently experienced abdominal and pelvic pain, painful menstruation, heavy bleeding, dyspareunia, infertility, ovarian cysts, as well as coexisting intestinal disorders or pelvic inflammatory disease. These patients more often required medical consultations and were twice as likely to take sick leave due to their symptoms. Additionally, due to the complex nature of the symptoms, the disease can coexist with or be misdiagnosed as IBS or pelvic inflammatory disease. At the same time, it has been shown that specific, recurring symptoms that require multiple medical consultations can aid in diagnosis [5], [6].

An important issue among women diagnosed with endometriosis is infertility. Endometrial lesions can cause structural damage to the reproductive organs, disrupt hormonal balance, and trigger a chronic inflammatory state, all of which can negatively affect reproductive potential [7].

**Time from symptoms to diagnosis**

Despite its high prevalence, diagnostic delays remain a significant challenge, with an average time from symptom onset to diagnosis estimated at 7 to 10 years. Delays in diagnosis are caused by factors related to the patient, the physician, and the healthcare system.

Patient-related factors include the reporting of symptoms, such as menstrual pain, which is often culturally perceived as a normal or typical experience and delays in seeking medical consultation and treatment. Physician-related factors include prolonged time to diagnosis when the patient initially visits a specialist other than gynecology or obstetrics. Systemic factors include both the lack of standardized diagnostic methods and public awareness of the symptoms of the disease [8]. According to the literature, approximately two-thirds of women with endometriosis receive an incorrect initial diagnosis, and nearly half undergo treatment by at least five different specialists before the correct diagnosis is established. In patients whose main symptom is pelvic pain, the diagnostic process is usually significantly longer than in those presenting primarily with infertility [9].

## 2. Materials and methods

This narrative review incorporated a variety of scientific sources, including original clinical studies, systematic reviews, meta-analyses, review works and current clinical guidelines on pain management in endometriosis. Publications most relevant to the topic were selected based on preliminary analysis of abstracts and full texts, with particular attention to studies significant for a multidisciplinary approach to treatment.

Selection criteria included data recency, methodological quality, and relevance to clinical practice. Priority was given to publications with an established position in the international literature, as well as those addressing medical, psychosocial, and systemic aspects related to comprehensive care for patients, including the Polish healthcare context.

As a result of this process, 27 key studies were included in the final analysis and synthesis, providing a comprehensive overview of current strategies for endometriosis management.

## 3. Multidisciplinary approach

### Hormonal treatment

Endometriosis treatment primarily relies on hormonal therapy, targeting the disease's dependence on estrogen. Hormonal therapy is currently considered first-line treatment, aimed at relieving symptoms, inhibit the formation of endometrial implants, delaying surgery, or preventing postoperative recurrence. Commonly used therapies include GnRH agonists and antagonists, progestins (e.g., dienogest, NETA, MPA), and combined oral contraceptives. Research is also ongoing on selective progesterone and estrogen receptor modulators, as well as aromatase inhibitors [10].

Data from controlled clinical trials indicate that women with suspected or confirmed endometriosis may achieve better outcomes using oral progestins as first-line therapy compared to combined oral contraceptives containing both progestins and estrogens. Progestins effectively reduce pain and limit the anatomical extent of endometrial lesions. They can be used at any age, do not increase the risk of thrombosis, suppress ovulation, and induce amenorrhea, with minimal side effects [11].

**Pharmacotherapy of pain**

Nonsteroidal anti-inflammatory drugs (NSAIDs) are the first line of treatment for menstrual and pelvic pain. These medications are available over-the-counter, which is why many patients choose this method of pain relief. NSAIDs inhibit or reduce prostaglandin production, which helps alleviate painful cramps experienced by patients with endometriosis. However, these medications have numerous side effects, limiting their use. Available research does not clearly indicate whether these medications are effective or which drug in this group has the best effect [12].

Opioids are reserved for cases of moderate to severe pain that persist despite primary treatment. However, research suggests that while they can provide relief, they come with significant limitations - risk of addiction, drug tolerance, and side effects. One of these side effects is an effect on ovulation, which is important because endometriosis patients experience reduced fertility due to the condition. Caution and a multidisciplinary approach to treatment are needed [13], [14].

**Pain that is resistant to pharmacological treatment – possible therapies**

Prolonged pelvic floor muscle tension increases oxygen demand and sensitizes pain receptors.

In cases resistant to pharmacological treatment, various interventional protocols are applied:

- **Neuromodulators:** amitriptyline as first-line therapy, duloxetine, gabapentin, pregabalin as second-line therapy;
- **Physiotherapy and myofascial interventions:** physiotherapy, manual therapy, biofeedback, transcutaneous nerve stimulation, and trigger point injections (TPI) with levobupivacaine or botulinum toxin;
- **Peripheral nerve blocks, inferior or superior hypogastric plexus blocks;**
- Sacral neuromodulation;
- **Visceral pain management** may include opioids combined with hypogastric plexus blocks.

Sacral neuromodulation involves electrical stimulation of the S3 or S4 sacral nerve roots using an electrode inserted through the sacral foramen. Patients may benefit from this therapy after standard pharmacological or surgical treatments have failed, regardless of the type or severity of the disease. This therapy can improve quality of life in both the short and long term [15].

The goal of these methods is to reduce pain, interrupt central and peripheral sensitization mechanisms, and consequently improvement of the quality of life. Neuromodulators are considered first-line therapy; if ineffective, a change of drug or combination therapy may be applied. Combined therapies have been used successfully in the treatment of myofascial pain syndrome [16].

Treatment is long-term and focused on improving quality of life. Careful patient selection for these treatment modalities and long-term monitoring are necessary. Further clinical trials are needed to clarify the optimal role of nerve blocks, neurectomy, neurolysis, and neurostimulation in holistic endometriosis treatment based on efficacy, individual patient needs, and low rates of complications and recurrence [17].

### Complementary pharmacological and surgical methods

Psychological support, particularly cognitive-behavioral therapy, as well as relaxation techniques and yoga, play a significant role in reducing pain perception and improving quality of life. Physiotherapy and rehabilitation help decrease muscle tension and improve pelvic function, while lifestyle modifications, including an anti-inflammatory diet rich in omega-3 fatty acids and low in FODMAPs, support treatment outcomes. Complementary approaches, such as acupuncture and transcutaneous electrical nerve stimulation (TENS), are increasingly used to enhance overall patient well-being [18].

## 4. The Social Dimension of Endometriosis

Widespread societal belief that painful menstruation is a natural and inevitable part of the menstrual cycle makes it more difficult to recognize and treat it as a genuine health problem. As a result, the normalization of this pain contributes to delays in diagnostics [19].

Common body image disturbances and fear of stigma further contribute to social withdrawal. Moreover, chronic pain, fatigue, and multisystem symptoms limit social activity. The long diagnostic delays often experienced by women with endometriosis intensify feelings of misunderstanding and isolation, highlighting the urgent need to improve diagnostic methods for this condition [20].

Faster diagnostic pathways, improved training for primary care physicians, and the inclusion of chronic pain topics in medical education are essential. Public awareness campaigns can promote earlier recognition of the disease, reduce stigma, and foster greater empathy toward patients. Systemic support is also important - flexible working conditions and easier access to medical leave can help women manage their condition more effectively. Regular monitoring of treatment outcomes using validated tools such as the Endometriosis Health Profile-30 (EHP-30) enables continuous adjustment of care and contributes to improving patients' quality of life [21].

Patients are often subjected to numerous diagnostic tests and procedures across different healthcare facilities before receiving an accurate diagnosis and effective treatment, which poses a particular challenge in healthcare systems with limited economic resources [22].

The development of scales measuring endometriosis-related stigma should combine theoretical foundations with insights from qualitative research on patients' individual experiences.

Such tools could be made available to researchers, physicians, and public health professionals. This approach could contribute to a better understanding of epidemiology, clinical assessment, and the improvement of care for patients [23].

## 5. Multidisciplinary Team

Persistent symptoms in many patients necessitate a multidisciplinary approach, with pain management clinics playing a pivotal role. They provide pharmacological therapy and interventional procedures.

The optimal multidisciplinary team for endometriosis management should include medical specialists such as gynecologists, urologists, gastroenterologists, psychiatrists, and pain management specialists, as well as non-medical support staff, including a nurse, psychologist, physiotherapist, occupational therapist, dietitian, and fitness instructor [1], [24].

## 6. Difficulties in treating the multifactorial etiology of the disease

Current therapeutic strategies, including hormonal therapy and surgical interventions, primarily target disease progression but frequently fail to fully control chronic pain with comments on the lack of knowledge of the etiology of this disease entity [25].

Surgical interventions, including laparoscopy with excision of disease foci, can provide significant short-term improvement, especially in cases of deep endometriosis infiltrating the pelvic structures. However, the high recurrence rate indicates that surgery does not eliminate the disease at its source. Furthermore, these procedures do not address the problem of pain hypersensitivity resulting from neural reorganization, which means symptoms may persist despite successful removal of anatomical lesions. Literature data indicate that younger patient age, advanced stage of endometriosis (III-IV), the presence of deeply infiltrating lesions, and a longer time since surgery are significant factors increasing the risk of recurrence [26].

## 7. Future Perspectives and Clinical Implications

Future research should focus on personalized treatment approaches based on pain mechanisms and individual patient profiles. Integrating advanced diagnostic tools and biomarkers may improve therapeutic decision-making and optimize outcomes. Only four biomarkers (TIMP-1, miR-451/miR-451a, MMP-9 or MMP-9/NGAL, TNF-α) have been consistently detected across different biological compartments by independent research groups and in sufficiently large cohorts. These markers, in particular, should be prioritized in future studies. Research on endometriosis biomarkers should adopt a multi-level approach, taking into account both local and systemic biological compartments, various disease phenotypes, applied treatment methods, presenting symptoms, and menstrual cycle phases. Consequently, there is a need for further investigation of locally accessible, non-invasive biological fluids, such as menstrual fluid or cervical mucus, which could serve as promising sources of potential biomarkers [27].

Providing accurate educational materials about endometriosis can raise awareness of the disease, which in turn helps reduce the stigmatization of pain and other symptoms. It is especially important to target educational efforts not only at women but also at men, who generally have less knowledge and exhibit higher levels of menstrual stigma. Well-designed health campaigns can help break down these barriers and improve the quality of life for women living with endometriosis [28].

## 8. Limitations

This narrative review has certain limitations that should be considered when interpreting the findings. First, most of the studies analyzed are observational in nature, making it difficult to clearly establish causal relationships between the treatments used and pain reduction. Such studies often do not allow for complete control of confounding factors.

Second, a significant portion of the data is based on patients' subjective experiences. The perception of pain in endometriosis varies significantly and depends on individual pain thresholds, psychological predispositions, and environmental factors, which can make it difficult to compare results between studies.

Third, there is a risk of publication bias, where studies demonstrating positive treatment effects are more likely to be published, which can lead to overestimation of the effectiveness of some interventions.

Although opioids are sometimes used in patients with refractory endometriosis, data are primarily derived from observational studies, and well-designed randomized clinical trials (RCTs). are lacking. For example, in one cohort analysis, women with endometriosis had an OR of ≈3.76 for chronic opioid use compared with women without endometriosis. This is therefore limited by the lack of large RCTs specifically examining opioids for pain management in patients with endometriosis [14].

Furthermore, few studies include long-term follow-up of patients, which is crucial for a chronic disease characterized by recurrent pain. This makes it difficult to assess the durability of treatment effects.

Finally, the results of many studies come from specialized centers, where access to multidisciplinary care is easier than in clinical practice. This limits the possibility of fully generalizing the results to the population of patients treated in less advanced centers.

## 9. Conclusions

Endometriosis is a chronic, estrogen-dependent disease associated with significant physical, psychological, and social burden, primarily due to chronic pelvic pain. Effective management of this pain remains a major clinical challenge and requires a multidisciplinary approach. Pharmacological treatments provide partial relief but are often insufficient. Interventional procedures can improve outcomes in refractory cases. Psychological interventions, physiotherapy and lifestyle modifications, contribute significantly to pain reduction and quality of life improvement. A personalized, mechanism-based approach that integrates multiple therapeutic modalities offers the greatest potential for optimal pain control and enhanced patient outcomes. Continued research is needed to better understand the pathophysiology of endometriosis-related pain and to develop targeted interventions that address both physical and psychological components of the disease. Further clinical research is important, including the search for disease biomarkers that will facilitate diagnosis and monitoring of response to treatment.

Endometriosis is a condition that extends far beyond the medical realm. While its physical symptoms, including chronic pain and reproductive challenges, pose significant clinical difficulties, the disease also carries profound social implications. It contributes to stigma, social isolation, limitations in education, work, and family life, as well as substantial psychological burden. Delays in diagnosis and lack of appropriate support exacerbate these issues, negatively affecting patients' quality of life. Therefore, effective management of endometriosis requires not only medical treatment but also educational initiatives, public awareness campaigns, psychological support, and health policies that address the needs of women. Only a holistic approach, integrating both medical and social aspects, can truly improve the lives of those affected by this condition.

**Authors' contributions:**
Conceptualization KW; Methodology WM, Software KW, Check WM, IS; Formal analysis JS; Investigation IS; Resources JS; Data curation IS; Writing-rough preparation JS; Writing-review and editing KW, IS; Visualization KW; Supervision WM; Project administration IS;

All authors has reviewed the final text and approved the published version.

**Receiving funding:**
none

**Bioethics committee statement:**
Not applicable.

**Informed consent statement:**
Not applicable.

**Data availability statement:**
Not applicable.

**Conflict of interest:**
The authors declare no conflict of interest.

**References**

1. Zondervan, K. T., Becker, C. M., & Missmer, S. A. (2020). Endometriosis. *The New England journal of medicine*, *382*(13), 1244–1256. https://doi.org/10.1056/NEJMra1810764
2. Wang, Z., Ouyang, Y., Xue, Z. *i in.* Globalne, regionalne i krajowe obciążenie i trendy endometriozy w latach 1990–2021: analiza globalnego obciążenia chorobą w badaniu z 2021 r. i prognoza do 2050 r. *BMC Women's Health* **25** , 519 (2025). https://doi.org/10.1186/s12905-025-04043-0
3. Tsamantioti, E. S., & Mahdy, H. (2023). Endometriosis. In *StatPearls*. StatPearls Publishing.
4. Vatsa, R., Sethi, A. Impact of endometriosis on female fertility and the management options for endometriosis-related infertility in reproductive age women: a scoping review with recent evidences. Middle East Fertil Soc J 26, 36 (2021). https://doi.org/10.1186/s43043-021-00082-3
5. Pontoppidan, K., Olovsson, M. & Grundström, H. Clinical factors associated with quality of life among women with endometriosis: a cross-sectional study. *BMC Women's Health* **23**, 551 (2023). https://doi.org/10.1186/s12905-023-02694-5
6. Junkka, S. S., & Ohlsson, B. (2023). Associations and gastrointestinal symptoms in women with endometriosis in comparison to women with irritable bowel syndrome: a study based on a population cohort. *BMC gastroenterology*, *23*(1), 228. https://doi.org/10.1186/s12876-023-02861-w

7. Kogelman, L.J.A., Rytter, D., Hummelshoj, L. *et al.* The burden of endometriosis on quality of life in Danish women: an analysis of the Danish Blood Donor Study. *BMC Med* **23**, 560 (2025). https://doi.org/10.1186/s12916-025-04398-z
8. Li, W., Feng, H., & Ye, Q. (2025). Factors contributing to the delayed diagnosis of endometriosis-a systematic review and meta-analysis. *Frontiers in medicine*, *12*, 1576490. https://doi.org/10.3389/fmed.2025.1576490
9. Nada, E. S., Bordea, A. E., & Bratila, E. (2022). The Impact of Endometriosis on In Vitro Fertilization Outcome. *Maedica*, *17*(4), 757–761. https://doi.org/10.26574/maedica.2022.17.4.757
10. Vannuccini, S., Clemenza, S., Rossi, M., & Petraglia, F. (2022). Hormonal treatments for endometriosis: The endocrine background. *Reviews in endocrine & metabolic disorders*, *23*(3), 333–355. https://doi.org/10.1007/s11154-021-09666-w
11. Casper R. F. (2017). Progestin-only pills may be a better first-line treatment for endometriosis than combined estrogen-progestin contraceptive pills. *Fertility and sterility*, *107*(3), 533–536. https://doi.org/10.1016/j.fertnstert.2017.01.003
12. Brown, J., Crawford, T. J., Allen, C., Hopewell, S., & Prentice, A. (2017). Nonsteroidal anti-inflammatory drugs for pain in women with endometriosis. *The Cochrane database of systematic reviews*, *1*(1), CD004753. https://doi.org/10.1002/14651858.CD004753.pub4
13. Guan, Q., Velho, R. V., Sehouli, J., & Mechsner, S. (2023). Endometriosis and Opioid Receptors: Are Opioids a Possible/Promising Treatment for Endometriosis? International Journal of Molecular Sciences, 24(2), 1633. https://doi.org/10.3390/ijms24021633
14. Chiuve, S. E., Kilpatrick, R. D., Hornstein, M. D., Petruski-Ivleva, N., Wegrzyn, L. R., Dabrowski, E. C., Velentgas, P., Snabes, M. C., & Bateman, B. T. (2021). Chronic opioid use and complication risks in women with endometriosis: A cohort study in US administrative claims. *Pharmacoepidemiology and drug safety*, *30*(6), 787–796. https://doi.org/10.1002/pds.5209
15. Zegrea, A., Ojala, E., Kirss, J., Suvitie, P., Varpe, P., Mäkelä-Kaikkonen, J., Rautio, T., Seikkula, J., Ukkonen, M., Lavonius, M., & Pinta, T. (2025). Good long-term results of sacral neuromodulation for endometriosis related chronic pelvic pain. *BMC women's health*, *25*(1), 162. https://doi.org/10.1186/s12905-025-03699-y
16. Pereira, A., Herrero-Trujillano, M., Vaquero, G., Fuentes, L., Gonzalez, S., Mendiola, A., & Perez-Medina, T. (2022). Clinical Management of Chronic Pelvic Pain in Endometriosis Unresponsive to Conventional Therapy. *Journal of personalized medicine*, *12*(1), 101. https://doi.org/10.3390/jpm12010101
17. Allahqoli, L., Hakimi, S., Momenimovahed, Z., Mazidimoradi, A., Rezaei, F., Aghamohammadi, S. Z., Rahmani, A., Mansouri, G., Hadavandsiri, F., Salehiniya, H., & Alkatout, I. (2024). Neuropelveology for Endometriosis Management: A Systematic Review and Multilevel Meta-Analysis. *Journal of clinical medicine*, *13*(16), 4676. https://doi.org/10.3390/jcm13164676
18. Desai, J., Strong, S., & Ball, E. (2024). Holistic approaches to living well with endometriosis. *F1000Research*, *13*, 359. https://doi.org/10.12688/f1000research.142586.2
19. Wiggleton-Little J. (2024). "Just" a painful period: A philosophical perspective review of the dismissal of menstrual pain. *Women's health (London, England)*, *20*, 17455057241255646. https://doi.org/10.1177/17455057241255646

20. Calvi, C., Sherman, K. A., & Pham, D. (2024). Loneliness and Perceived Social Support in Endometriosis: The Roles of Body Image Disturbance and Anticipated Stigma. *International journal of behavioral medicine*, *31*(3), 433–444. https://doi.org/10.1007/s12529-023-10230-w
21. Bień, A., Pokropska, A., Grzesik-Gąsior, J., Korżyńska-Piętas, M., Pieczykolan, A., Zarajczyk, M., Ali Pour, R., Frydrysiak-Brzozowska, A., & Rzońca, E. (2025). Quality of Life in Women with Endometriosis: The Importance of Socio-Demographic, Diagnostic-Therapeutic, and Psychological Factors. *Journal of clinical medicine*, *14*(12), 4268. https://doi.org/10.3390/jcm14124268
22. Darbà, J., Marsà, A. Economic Implications of Endometriosis: A Review. *PharmacoEconomics* **40**, 1143–1158 (2022). https://doi.org/10.1007/s40273-022-01211-0
23. Sims, O. T., Gupta, J., Missmer, S. A., & Aninye, I. O. (2021). Stigma and Endometriosis: A Brief Overview and Recommendations to Improve Psychosocial Well-Being and Diagnostic Delay. *International journal of environmental research and public health*, *18*(15), 8210. https://doi.org/10.3390/ijerph18158210
24. Troncon, J. K., Anelli, G. B., Poli-Neto, O. B., & Silva, J. C. R. E. (2023). Importance of an Interdisciplinary Approach in the Treatment of Women with Endometriosis and Chronic Pelvic Pain. Importância de uma abordagem interdisciplinar no tratamento de mulheres com endometriose e dor pélvica crônica. *Revista brasileira de ginecologia e obstetricia : revista da Federacao Brasileira das Sociedades de Ginecologia e Obstetricia*, *45*(11), e635–e637. https://doi.org/10.1055/s-0043-1777001
25. Malvezzi, H., Marengo, E. B., Podgaec, S., & Piccinato, C. A. (2020). Endometriosis: current challenges in modeling a multifactorial disease of unknown etiology. *Journal of translational medicine*, *18*(1), 311. https://doi.org/10.1186/s12967-020-02471-0
26. Holdsworth-Carson, S.J., Chung, J., Machalek, D.A. *et al.* Predicting disease recurrence in patients with endometriosis: an observational study. *BMC Med* **22**, 320 (2024). https://doi.org/10.1186/s12916-024-03508-7
27. Brulport, A., Bourdon, M., Vaiman, D., Drouet, C., Pocate-Cheriet, K., Bouzid, K., Marcellin, L., Santulli, P., Abo, C., Jeljeli, M., Chouzenoux, S., Chapron, C., Batteux, F., Berthelot, C., & Doridot, L. (2024). An integrated multi-tissue approach for endometriosis candidate biomarkers: a systematic review. *Reproductive biology and endocrinology : RB&E*, *22*(1), 21. https://doi.org/10.1186/s12958-023-01181-8
28. Reinhardt, A., & Eitze, S. (2023). Breaking the endometriosis silence: a social norm approach to reducing menstrual stigma and policy resistance among young adults. Psychology & Health, 40(6), 881–903. https://doi.org/10.1080/08870446.2023.2277838