

DOI : <http://dx.doi.org/10.70111/hg4206>
Submitted : February, 19 2026
Reviewed : March, 27 2026
Accepted : April, 16 2026

Global Research Trends in Complementary and Alternative Therapies for Primary Dysmenorrhea Among Adolescent Girls: A Bibliometric Analysis

Ririn Indriani¹, Salma Santi Widuri^{2*}

¹ Midwifery Diploma Program, Health Polytechnic of Malang

² Department of Midwifery, Faculty of Medicine, Universitas Brawijaya

Corresponding author : salmasantiwjournal@gmail.com

ABSTRACT

Primary dysmenorrhea is highly prevalent among adolescent girls and often leads to significant functional impairment. Growing interest in complementary and alternative therapies (CAM) reflects a shift toward safer, accessible non-pharmacological options. However, research in this field remains fragmented, and no bibliometric analysis has mapped its global structure. This study aimed to analyze global research trends, scholarly productivity, collaborative networks, and emerging thematic structures related to complementary and alternative therapies for primary dysmenorrhea among adolescent girls. A bibliometric analysis was conducted using PubMed-indexed publications from 2019–2024. Eligible English-language articles were analyzed using Biblioshiny (R Studio) to assess publication trends, key contributors, collaboration networks, and thematic evolution. A total of 293 documents from 171 journals were included, showing an annual growth rate of 9.86%. Research involved 2003 authors, with high collaboration rates and strong contributions from China, the United States, and the Netherlands. Thematic mapping identified movement-based therapeutic approaches particularly walking and functional recovery as dominant motor themes, reflecting emerging interest in physiological and rehabilitative dimensions of dysmenorrhea management. Research on CAM for primary dysmenorrhea among adolescents has expanded rapidly, with increasing global collaboration and evolving thematic complexity. Movement-based interventions and functional recovery frameworks represent key future directions, offering promising avenues for developing holistic and adolescent-centered menstrual pain management strategies.

Keywords: dysmenorrhea, adolescent, complementary

Background

Adolescents is individuals in the 10-19 years age group ¹. At the beginning of adolescence, puberty occurs, which is a stage that marks when children enter puberty to prepare for the reproductive process, which in girls involves menstruation ². Menstruation occurs due to the shedding of the inner lining of the uterine wall (endometrium) which occurs periodically every month ³.

According to 2020 World Health Organization (WHO) data, the prevalence of dysmenorrhea was 1,769,425 (90%), with 10-16% being severe ⁴. On average, in European countries, dysmenorrhea affects 45-97% of women, in the Americas 52-90% of women, in Africa 44-95%, and in Asia 45-90% of women ⁵. The global incidence of dysmenorrhea is very high. On average, more than 50% of women suffer from Primary Dysmenorrhea (PD) ⁶. Primary dysmenorrhea (PD) is defined as painful menses with cramping sensation in the lower abdomen that is often accompanied by other symptoms ⁷, such as sweating, headache, nausea, vomiting, diarrhea, and tremulousness ⁸. The pain is thought to be due to contractions caused by the loss of the endometrium ⁹.

Factors influencing the occurrence of primary dysmenorrhea, include family history, stress, physical activity, menstrual periods, and age at menarche ¹⁰. Other contributing factors include unhealthy diet and lack of exercise ⁹. Increasingly severe pain can be very disruptive, so treatment may be necessary to relieve the pain ¹¹. Dysmenorrhea can be treated both non-pharmacologically and pharmacologically ¹². Non pharmacological therapy methods are widely used to treat moderate pain, such as heat therapy and yoga ¹³.

Primary dysmenorrhea disrupts various activities, such as school absences that negatively impact academic achievement, restrictions social life, and decreased sports activities, which consequently lead to a decreased quality of life¹⁴. Primary dysmenorrhea also causes infertility, sexual dysfunction, depression, and changes in cardiac function¹⁵. Although NSAIDs are commonly used, some adolescents experience side effects or inadequate pain relief¹⁶. Preferences for natural, low-risk, and easily accessible treatments have contributed to growing interest in complementary and alternative therapies¹⁷. This is evident in the increase in publications related to complementary and alternative medicine (CAM) over the past five years, demonstrating growing scientific interest in non-pharmacological pain management. Many Asian countries (Iran, China, and India) are major contributors to CAM research for dysmenorrhea.

Despite the substantial increase in publications exploring complementary and alternative therapies for primary dysmenorrhea, the existing body of literature remains highly dispersed across disciplines, intervention types, and geographic regions, limiting the ability of researchers to obtain a holistic understanding of the field. To date, no comprehensive bibliometric analysis has systematically mapped the global research landscape on this topic, particularly within the adolescent population where primary dysmenorrhea is most prevalent and where therapeutic needs differ from those of adults. A bibliometric approach is crucial because it allows for the quantitative examination of large datasets, revealing patterns of scientific productivity, the influence of leading authors and institutions, and the structure of collaborative networks across countries. Moreover, bibliometric mapping provides insight into the intellectual architecture of the field by identifying frequently occurring keywords, co-citation clusters, conceptual linkages, and the evolution of thematic priorities over time. In this context, bibliometric assessment serves as an essential tool for synthesizing fragmented evidence, guiding future research directions, supporting evidence-informed decision making, and ultimately strengthening the global scientific response to primary dysmenorrhea among adolescent girls.

Methods

The data were obtained from the PubMed database, and the search was completed in November 2025 to avoid bias from daily database updates. The search strategy combined terms related to primary dysmenorrhea, complementary and alternative therapies, and adolescent girls, restricted to publications from 2019 to 2024. Only English-language journal articles, reviews, clinical trials, and conference papers available in full text were included, while books and book chapters were excluded. All retrieved records were exported in PubMed format and screened by titles and abstracts to remove duplicates and irrelevant studies, followed by full-text verification to ensure alignment with the study scope.

All eligible documents were analyzed using R Studio through the Biblioshiny interface. Biblioshiny was used to process bibliographic metadata, generate annual publication trends, identify productive authors, institutions, and countries, and explore research structures through keyword co-occurrence, thematic map analysis, and topic timeline analysis. This workflow provided a comprehensive overview of global research activity and emerging themes in complementary and alternative therapies for primary dysmenorrhea among adolescent girls.

Results

Main Information

A total of 293 documents published between 2019 and 2024 were included in this bibliometric analysis. These documents were sourced from 171 different journals and publication outlets, demonstrating the multidisciplinary nature of research on complementary and alternative therapies for primary dysmenorrhea in adolescent girls. The overall annual growth rate of 9.86% reflects a strong and steadily increasing scholarly interest in this topic over the past five years.

Research productivity in this field is supported by 2003 contributing authors, indicating substantial engagement from the global scientific community. Notably, only two documents were single-authored, suggesting that research in this domain is predominantly collaborative. This is further

supported by the average of 7.45 co-authors per document, demonstrating extensive teamwork and shared scientific inquiry. The international co-authorship rate of 22.53% highlights active cross-country collaborations and underscores the global relevance of primary dysmenorrhea and its non-pharmacological management strategies.

In terms of content, the dataset contains 1009 Author Keywords, reflecting conceptual diversity, emerging therapeutic modalities, and evolving research directions. The average document age of 3.21 years indicates that the field is relatively young, with a substantial proportion of recent publications, consistent with the growing global attention toward complementary and alternative interventions in adolescent reproductive health.

Annual Publication Growth

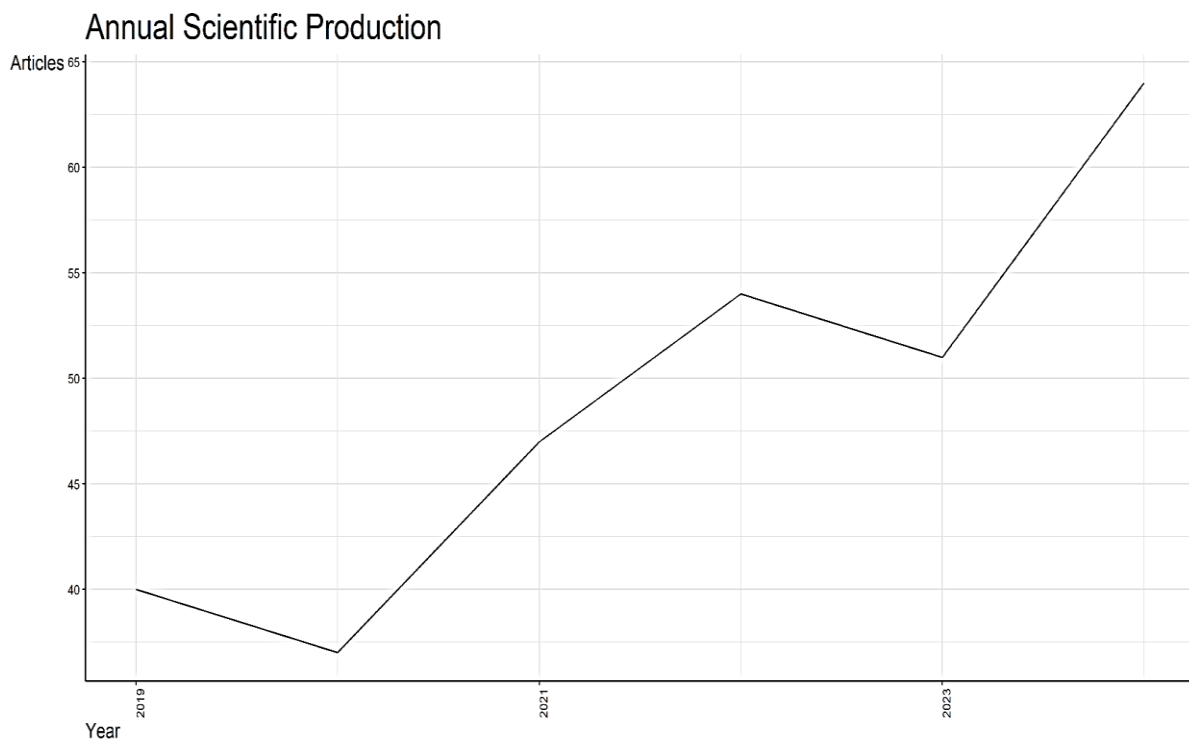


Figure 1. Annual publication growth

The annual scientific production from 2019 to 2024 shows a clear upward trajectory, indicating a progressive expansion of research interest and scholarly output. In 2019, the field recorded 40 publications, followed by a slight decline in 2020. However, beginning in 2021, there was a marked increase, with publication counts rising steadily and peaking prominently in 2024 with approximately 63 articles.

This sharp rise in 2024 likely reflects heightened scientific attention toward non-pharmacological management of dysmenorrhea, driven by increasing awareness of adolescent health needs, limitations of conventional pharmacologic therapy, and emerging evidence supporting alternative approaches such as herbal medicine, aromatherapy, acupressure, physical therapy, and mind-body interventions.

The fluctuations observed between 2019 and 2023 may indicate shifts in global research priorities or external factors influencing publication productivity. Nevertheless, the overall trend demonstrates sustained growth and an expanding evidence base. This upward momentum suggests that complementary and alternative therapies are becoming more widely recognized as essential components of menstrual health management strategies for adolescent populations.

Most Relevant Author, Affiliations, and Countries

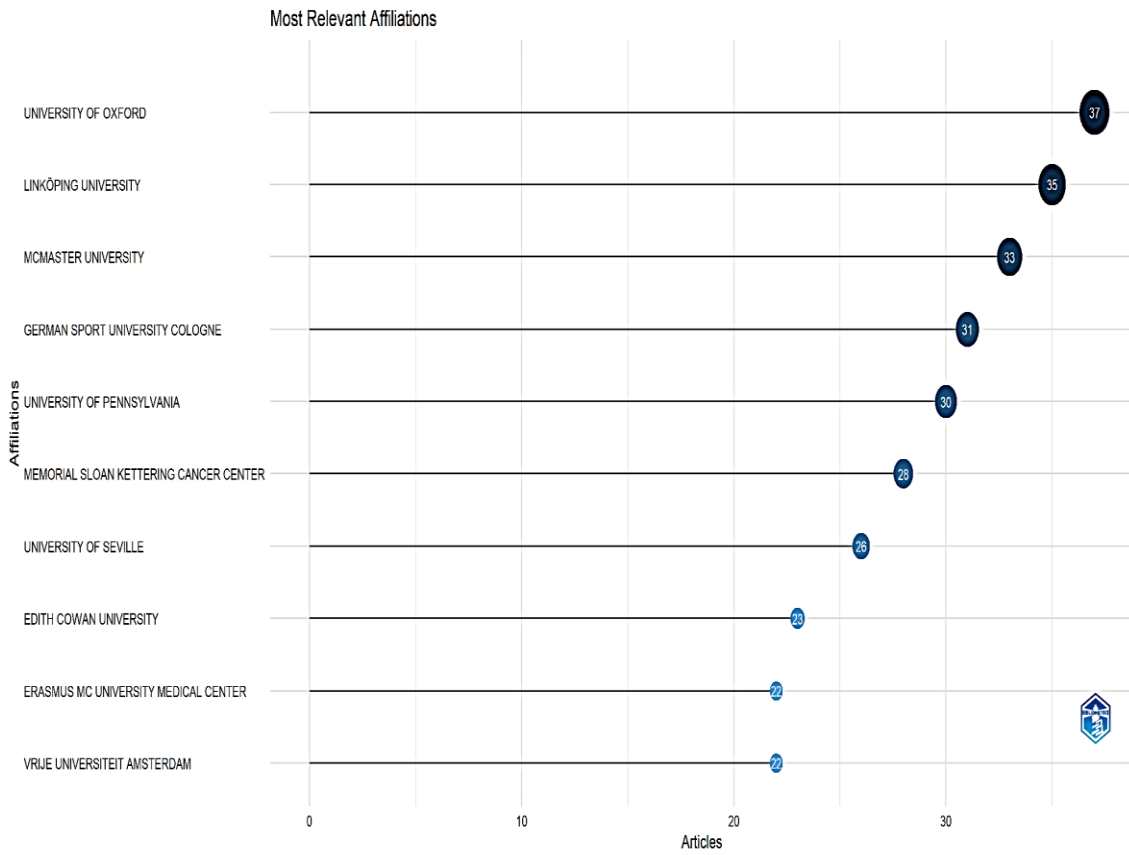


Figure 2. Most Relevant Affiliations

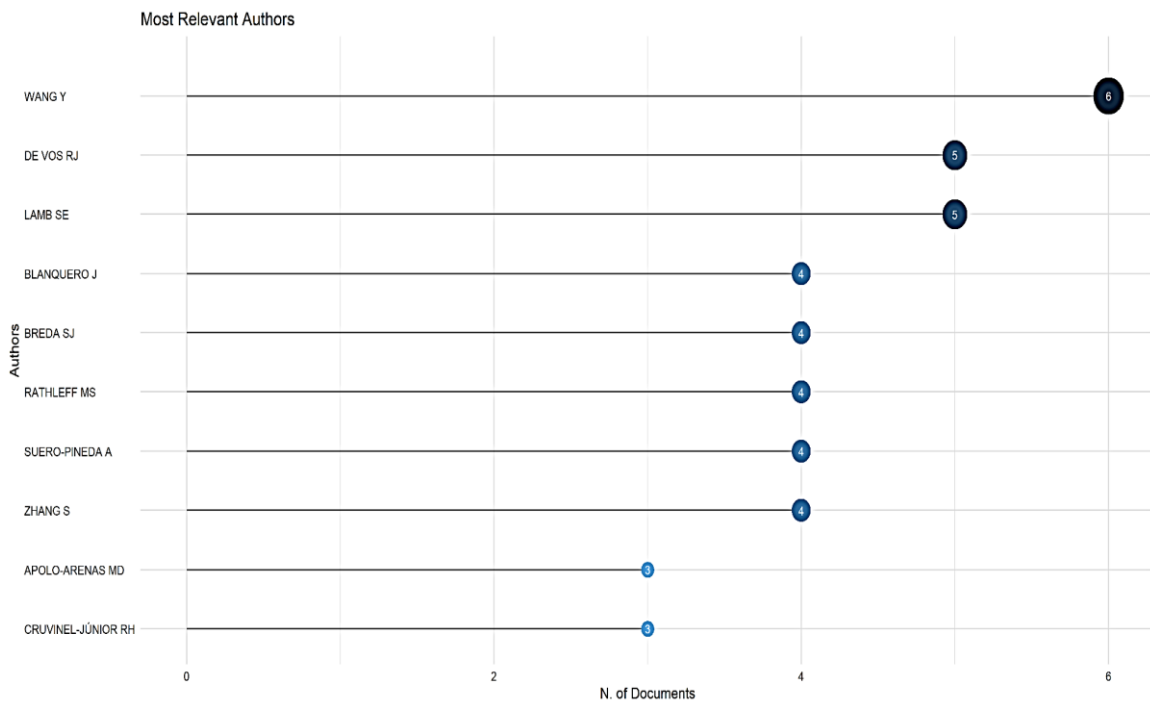


Figure 3. Most Relevant Author

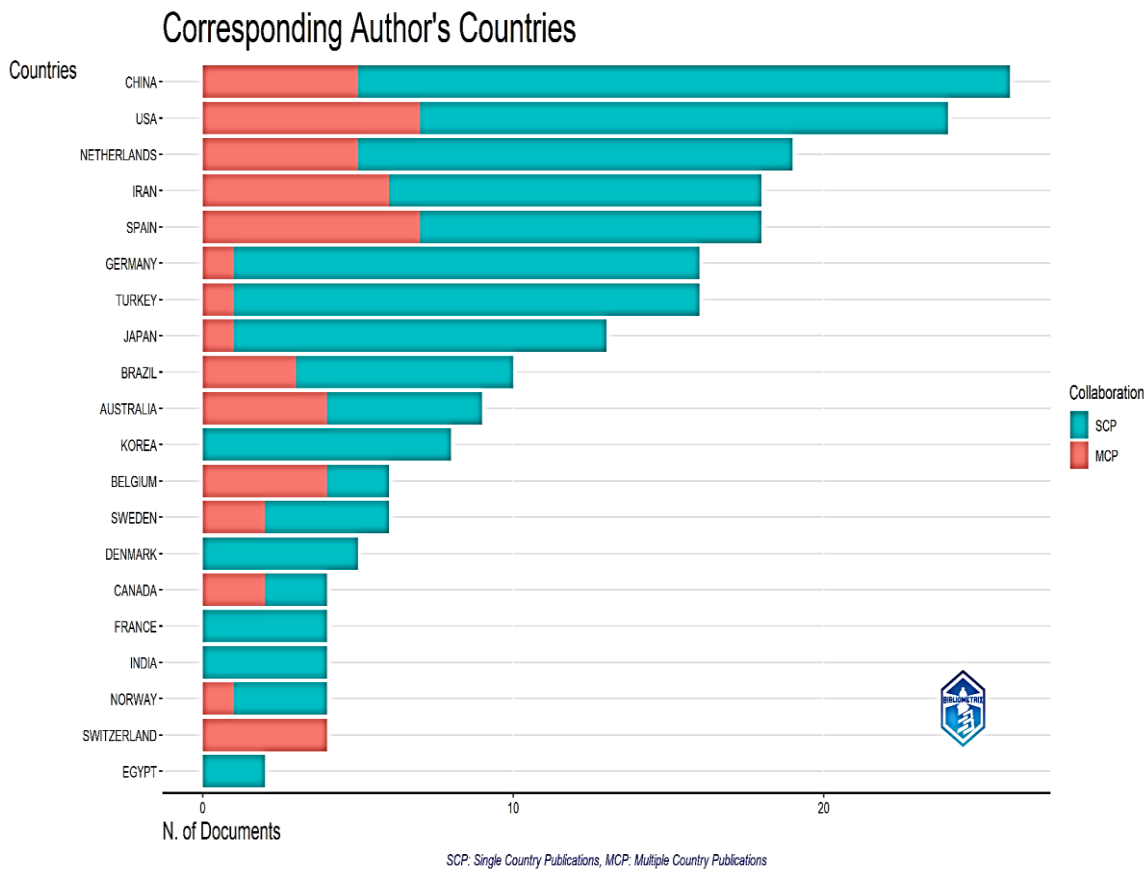


Figure 4. Most influential author, affiliations, and corresponding author’s countries

The most productive author is Wang Y, contributing 6 documents to the field. This is followed by De Vos RJ and Lamb SE, each with 5 documents. Several other authors—including Blanquero J, Breda SJ, Rathleff MS, Suero-Pineda A, and Zhang S—produced 4 documents each. Meanwhile, Apolo-Arenas MD and Cruvinel-Júnior RH each contributed 3 publications. These figures illustrate that while the field is growing rapidly, scientific output remains concentrated among a few leading researchers.

The most productive institution is the University of Oxford with 37 publications, followed closely by Linköping University (35) and McMaster University (33). Other high-impact affiliations include German Sport University Cologne (31), University of Pennsylvania (30), and Memorial Sloan Kettering Cancer Center (28). Institutions such as the University of Seville (26), Edith Cowan University (23), Erasmus MC University Medical Center (22), and Vrije Universiteit Amsterdam (22) also make notable contributions. This distribution highlights the strong involvement of major research universities with extensive expertise in musculoskeletal health, women’s health, and integrative therapies.

China leads with the highest number of corresponding-author publications (about 26 documents), followed by the USA (24 documents) and the Netherlands (around 21 documents). Iran, Spain, and Germany also contribute substantially to the field. Most countries show a greater proportion of Single-Country Publications (SCP) than Multiple-Country Publications (MCP), indicating that research on complementary and alternative therapies for primary dysmenorrhea is often conducted within national teams. However, countries such as Australia, Brazil, and Belgium demonstrate higher MCP proportions, reflecting strong international collaboration patterns.

Thematic Mapping

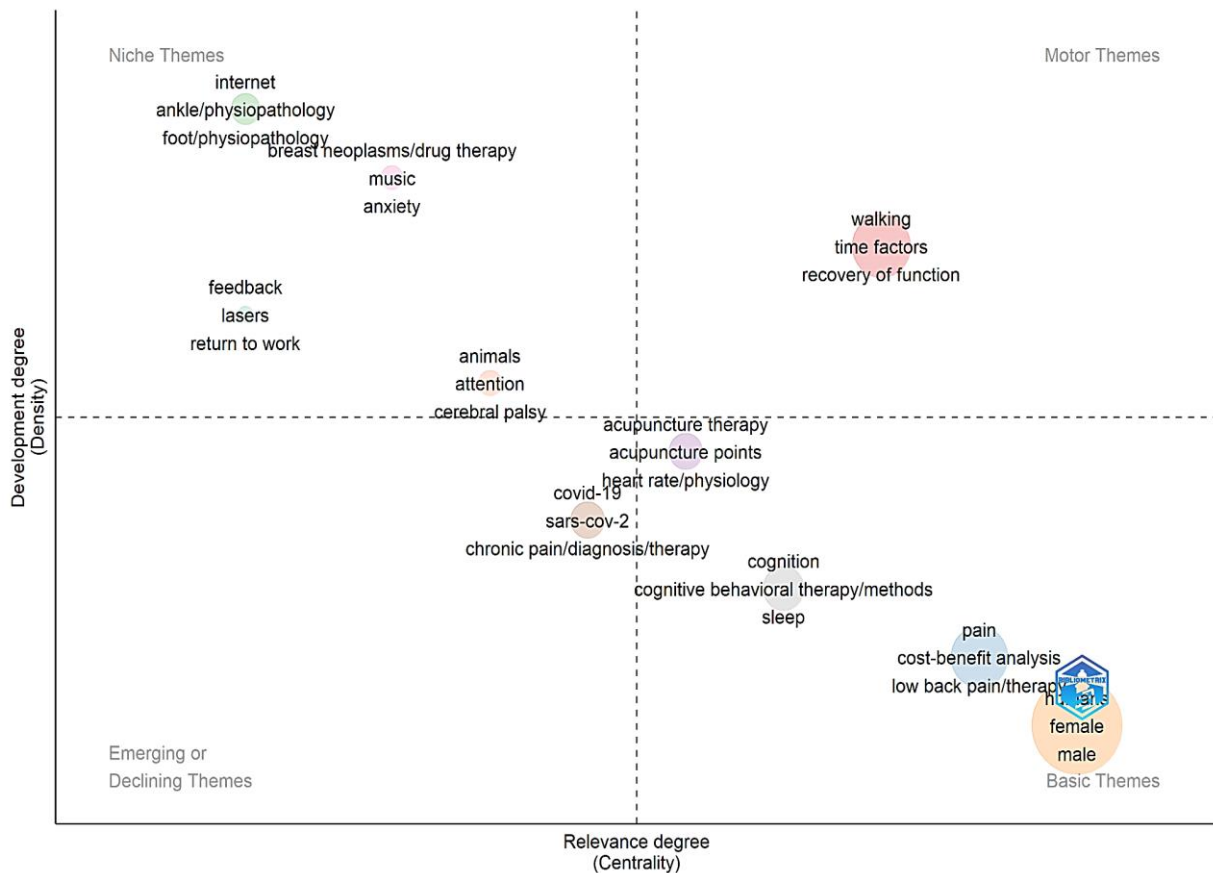


Figure 3. Emerging trends through thematic mapping on complementary and alternative therapies for primary dysmenorrhea among adolescent girls research.

Furthermore, an advanced interpretation of the thematic mapping highlights that motor themes represent the most dynamic and influential research pathways in the field of complementary and alternative therapies for primary dysmenorrhea among adolescent girls. The emergence of walking as a central and highly developed theme suggests an expanding interest in movement-based therapeutic models that target both physiological and functional dimensions of menstrual pain. This trend indicates a strong potential for future investigations to explore structured walking programs, optimal exercise intensities, and their mechanistic effects on uterine blood flow, inflammatory mediators, and pain modulation in adolescents. Similarly, the prominence of time factors and recovery of function within the motor cluster reflects a shifting focus toward longitudinal and functional outcomes, particularly how intervention timing, treatment duration, and rehabilitation trajectories shape therapeutic effectiveness. These elements collectively suggest that future research may increasingly adopt integrative frameworks that combine exercise physiology, chronobiology, and functional recovery science to improve non-pharmacological management strategies for dysmenorrhea.

Discussion

The identification of movement-based therapeutic approaches as a dominant motor theme in the

thematic map indicates that physical activity particularly walking has become a central focus within contemporary research on complementary and alternative therapies for primary dysmenorrhea among adolescent girls. Given that motor themes are both conceptually mature and highly influential within the field, this prominence suggests strong potential for future scientific expansion. The clustering of keywords related to walking, exercise, physical activity, and movement therapy highlights increasing scholarly interest in understanding how movement-based modalities modulate menstrual pain through physiological pathways such as enhanced pelvic circulation, reduction of myometrial ischemia, improved endorphin release, and downregulation of inflammatory signaling. Despite the emergence of several preliminary clinical studies, research remains limited in terms of standardized protocols, dose response relationships, and mechanistic exploration. Therefore, future investigations should rigorously examine structured walking programs, optimal intensities and durations, comparative effectiveness with other forms of exercise (e.g., yoga, stretching, aerobic routines), and the specific biological mediators involved in pain attenuation. Such work is particularly relevant for adolescents, who may prefer accessible, low-cost, and non invasive interventions that can be easily incorporated into daily routines and school environments.

Beyond physiological mechanisms, the appearance of walking time factors within the motor cluster underscores the need to consider temporal dimensions of movement-based therapy. Time factors may involve the frequency of walking, the timing of exercise relative to the menstrual cycle, or the duration needed to achieve measurable therapeutic benefits. Chronobiological perspectives such as whether exercise is more effective during specific phases of the menstrual cycle remain underexplored yet potentially significant for optimizing intervention outcomes. Future research may therefore integrate chronotherapeutic principles, longitudinal monitoring, and wearable technologies to capture real-time data on movement patterns, pain fluctuations, and treatment adherence. Integrating objective assessments, such as accelerometers or digital health trackers, could further advance the precision and ecological validity of studies in this domain. These methodological advances would enable a more nuanced understanding of how temporal and behavioral variables interact with physiological responses in adolescent girls experiencing primary dysmenorrhea.

The second major motor theme emerging from the analysis functional recovery demonstrates a substantial shift in scholarly focus from merely reducing pain intensity to restoring adolescents' overall functional capacity and quality of life. Historically, research on dysmenorrhea has relied primarily on pain scales as primary outcomes, neglecting broader dimensions such as mobility, participation in daily activities, school attendance, sleep quality, and psychosocial functioning. The prominence of keywords such as recovery function, functional outcomes, and rehabilitation within the motor cluster indicates a growing recognition that effective management of primary dysmenorrhea should aim not only to alleviate acute pain but also to support adolescent girls in maintaining normal life functioning.

Future research on functional recovery should therefore explore comprehensive outcome frameworks that capture multidimensional aspects of adolescent functioning. Potential directions include the development of validated functional recovery scales tailored to menstrual health, longitudinal studies evaluating the sustained impact of complementary therapies, and advanced statistical modeling to understand mediating and moderating factors influencing recovery trajectories. Additionally, integrating biopsychosocial models into study designs could illuminate how psychological resilience, stress regulation, and lifestyle behaviors interact with therapeutic interventions to influence overall functional outcomes. Interdisciplinary collaboration particularly involving physiotherapists, psychologists, and educators may further enrich the conceptualization of functional recovery and guide the development of school-based or community-level interventions that support menstruating adolescents.

Moreover, the intersection between movement-based approaches and functional recovery offers a fertile area for future investigation. Thematic positioning suggests that these two domains are not isolated but deeply interconnected, indicating the potential for integrated therapeutic frameworks that combine physical activity with functional rehabilitation strategies. For example, structured exercise programs could be examined for their ability not only to reduce menstrual pain but also to improve mobility, academic performance, emotional well-being, and participation in extracurricular activities. Such integrated approaches may be particularly beneficial for adolescents who experience recurrent or severe dysmenorrhea, where functional impairment is more pronounced. Evaluating combined interventions such as walking plus breathing exercises, yoga plus heat therapy, or physical therapy plus

aromatherapy may help identify synergistic effects that enhance both pain relief and functional outcomes.

The rise of these motor themes also carries implications for methodological advancements in future dysmenorrhea research. The relatively young age of the field, reflected in the average document age of 3.21 years, indicates an urgent need for high-quality, longitudinal, and multicenter studies capable of establishing stronger evidence bases. Since the current research landscape is characterized by substantial collaborative engagement demonstrated by the high co-authorship rate and increasing international collaboration future studies may benefit from harmonized protocols across countries, allowing cross cultural comparisons of movement based and functional recovery interventions. Additionally, emerging technologies such as mobile health applications, wearable sensors, and tele-rehabilitation platforms could be leveraged to facilitate remote monitoring, enhance adherence, and collect real-world data at scale ¹⁸.

The expansion of research on movement-based modalities and functional recovery reflects broader global trends emphasizing patient centered, accessible, and non-pharmacological strategies for menstrual health management. As the limitations of conventional pharmacologic therapy become increasingly recognized particularly for adolescents who may face concerns regarding side effects or long-term ¹⁹ use the demand for evidence based complementary approaches is expected to grow ²⁰. The upward research trajectory identified in this bibliometric analysis, particularly the notable increase in publications in 2024, suggests that the field is entering a phase of rapid development. This momentum provides an ideal opportunity to deepen theoretical understanding, refine intervention models, and contribute to the creation of integrated care pathways that holistically address the needs of adolescent girls with primary dysmenorrhea.

Conclusions and Recommendations

This bibliometric analysis provides a comprehensive overview of global research trends and intellectual structures surrounding complementary and alternative therapies for primary dysmenorrhea among adolescent girls from 2019 to 2024. The findings demonstrate that scholarly interest in non-pharmacological management of primary dysmenorrhea has grown substantially, with an annual publication increase of 9.86% and a predominance of recent studies, indicating that the field is both dynamic and rapidly developing. The presence of 2003 contributing authors, along with high rates of co-authorship and increasing international collaboration, underscores the global relevance of adolescent menstrual health and the multidisciplinary nature of complementary and alternative medicine research.

The thematic evolution of the field reveals a clear shift toward movement-based therapeutic approaches and functional recovery frameworks, suggesting a growing recognition of physical activity, rehabilitation science, and integrated mind body mechanisms in the management of dysmenorrhea. These emerging motor themes, particularly structured walking interventions and functional performance outcomes, highlight new pathways for intervention design and mechanistic exploration. Additionally, the increasing prominence of CAM modalities such as herbal therapies, aromatherapy, acupressure, yoga, and other low-risk strategies reflects a global trend toward accessible, culturally adaptable, and adolescent-friendly approaches to menstrual pain management.

Overall, this analysis synthesizes previously fragmented evidence and provides a systematic mapping of research productivity, influential contributors, conceptual diversity, and evolving thematic landscapes. By clarifying global scientific patterns and identifying priority research domains, the study offers a valuable foundation to guide future investigations, support evidence-based clinical practice, and enhance adolescent reproductive health policies worldwide.

Acknowledgment

We would like to thank the Midwifery Study Program of Malang Health Polytechnic and the Midwifery Education Study Program of Brawijaya University, Malang, for providing support in writing this article.

References

1. World Health Organization (WHO). Adolescent health . In: World Health Organization (WHO) - South East Asia [Internet]. Health Topics. World Health Organization (WHO); 2020 [cited 2025 Nov 17]. Available from: <https://www.who.int/southeastasia/health-topics/adolescent-health>
2. Astuti WT, Susanti ET, Nurhayati L, Marhamah E, Rusminah, Rianawaty I. Aku Tumbuh, Aku Siap!: Mengenal Pubertas dengan Nyaman dan Percaya Diri [Internet]. Makassar: Rizmedia Pustaka Indonesia; 2026 [cited 2026 Feb 12]. 3–9 p. Available from: https://www.google.co.id/books/edition/Aku_Tumbuh_Aku_Siap_Mengenal_Pubertas_de/k4mrEQAAQBAJ?hl=id&gbpv=1&dq=pubertas+adalah+proses+reproduksi+menstruasi&pg=PA47&printsec=frontcover
3. Nuha K, Rusmil K, Ganiem AR, Permadi W, Diah Herawati DM. Single-Blind Randomized Controlled Trial: Comparative Efficacy of Dark Chocolate, Coconut Water, and Ibuprofen in Managing Primary Dysmenorrhea. *Int J Environ Res Public Health*. 2023 Aug 1;20(16). <https://doi.org/10.3390/ijerph20166619>
4. Munir R, Faktor A, Mempengaruhi Y, Haid N, Mahasiswa P, Kebidanan A, et al. Analisa Faktor Yang Mempengaruhi Nyeri Haid (Dismenorhea) Pada Mahasiswa Akademi Kebidanan Prima Husada Bogor. *Detector: Jurnal Inovasi Riset Ilmu Kesehatan*. 2024 Dec 14;2(1):62–70. <https://doi.org/10.55606/detector.v2i1.3133>
5. Hariyadi AM. Peran Orang Tua dalam Pemenuhan Kebutuhan Informasi Kesehatan Reproduksi pada Remaja. *SEHATMAS: Jurnal Ilmiah Kesehatan Masyarakat*. 2024 Jan 28;3(1):151–60. <https://doi.org/10.55123/sehatmas.v3i1.2826>
6. Widarti S, Ariningtyas N, Nur Zahra M, Kebidanan Mulia Madani Yogyakarta A. TINGKAT PENGETAHUAN REMAJA PUTRI TENTANG DISMENOIRE PADA SISWI KELAS X DI SEKOLAH DI SMP NEGERI 2 SEWON THE LEVEL OF KNOWLEDGE OF ADOLESCENT WOMEN ABOUT DYSMENORHORE AMONG CLASS X STUDENTS AT THE SCHOOL AT SMP NEGERI 2 SEWON. 2024;(2).
7. Vera Iriani Abdullah, Nuur Octascriptiriani Rosdianto, Kartika Adyani, Yeni Rosyeni, Siti Rusyanti, Sumarni. Dismenore [Internet]. NEM; 2024 [cited 2026 Apr 14]. Available from: [https://books.google.co.id/books?hl=id&lr=&id=Tr0DEQAAQBAJ&oi=fnd&pg=PR1&dq=Dismenore+primer+\(PD\)+didefinisikan+sebagai+nyeri+menstruasi+dengan+sensasi+kram+di+perut+bagian+bawah+yang+sering+disertai+gejala+lain.&ots=Ym_BDVo-TL&sig=s1Qa8XoE7dsYhFVnc5D0mwITZ88&redir_esc=y#v=onepage&q&f=false](https://books.google.co.id/books?hl=id&lr=&id=Tr0DEQAAQBAJ&oi=fnd&pg=PR1&dq=Dismenore+primer+(PD)+didefinisikan+sebagai+nyeri+menstruasi+dengan+sensasi+kram+di+perut+bagian+bawah+yang+sering+disertai+gejala+lain.&ots=Ym_BDVo-TL&sig=s1Qa8XoE7dsYhFVnc5D0mwITZ88&redir_esc=y#v=onepage&q&f=false)
8. Mohr-Sasson A, Castel E, Dadon T, Brandt A, Etinger R, Cohen A, et al. The association of endometrial closure during cesarean section to the risk of developing uterine scar defect: a randomized control trial. *Arch Gynecol Obstet*. 2024 May 1;309(5):2063–70. <https://doi.org/10.1007/s00404-024-07417-1>.
9. Ar-Rakhimi L, Wantania JJE, Suparman E. Faktor-Faktor yang Berhubungan dengan Kejadian Dismenore pada Mahasiswa Kedokteran Universitas Sam Ratulangi. *Health & Medical Sciences*. 2025 Jan 29;2(2):9. <https://doi.org/10.47134/phms.v2i2.351>
10. Rukmawati S, Susanti R, Rahma K, Isfentiani D, Wildayani D, Nurfitra NR, et al. Bunga Rampai Kesehatan Reproduksi Remaja dan Permasalahannya [Internet]. Cetakan Pertama. Agustin EA, editor. Jakarta: Nuansa Fajar Cemerlang; 2024 [cited 2026 Feb 12]. 10–11 p. Available from: https://www.google.co.id/books/edition/BUNGA_RAMPAI_KESEHATAN_REPRODUKSI_REMAJA/qE2REQAAQBAJ?hl=id&gbpv=1&dq=dismenore+primer+riwayat+keluarga,+stres,+aktivitas+fisik,+siklus+menstruasi,+dan+usia+menarche.&pg=PA10&printsec=frontcover
11. Kamalah R, Abdullah VI, Isir M. Mengatasi Dismenore dengan Minuman Mix Jelly Kulit Buah Naga dan Air Kelapa... - Google Books [Internet]. Daerah Istimewa Yogyakarta (DIY): Penerbit NEM; 2023 [cited 2026 Feb 12]. 15–16 p. Available from: https://www.google.co.id/books/edition/Mengatasi_Dismenore_dengan_Minuman_Mix_J/5K--EAAAQBAJ?hl=id&gbpv=0
12. Wati AS, Tampubolon MM, Utami S. Gambaran Pengalaman Mengatasi Dismenorea pada Remaja Putri. *Innovative: Journal Of Social Science Research*. 2024 Dec 10;4(6):4297–315. doi:10.31004/INNOVATIVE.V4I6.16782

13. Yadav S, Joshi S, Punia S. Efficacy of combined exercise training during different menstrual phases in young students with primary dysmenorrhoea. *Physiother Res Int*. 2024 Oct 1;29(4). <https://doi.org/10.1002/pri.2131>
14. Rusyanti S, Iswanti T, Sutianingsih H, Khotimah H, Wati DR. Terapi Non Farmakologis pada Dismenore [Internet]. Cetakan Pertama. Zumarano I, Faisal A, editors. Jakarta: Nuansa Fajar Cemerlang; [cited 2026 Feb 12]. Available from: https://www.google.co.id/books/edition/TERAPI_NON_FARMAKOLOGI_PADA_DISMENO_RE/XU-FEQAAQBAJ?hl=id&gbpv=1&dq=Dismenore+primer+mengganggu+aktivitas+sekolah&pg=PA34&printsec=frontcover
15. Fadhillah ACR, Futriani ES. Efektivitas Pemberian Kunyit Asam terhadap Penurunan Skala Nyeri Dismenore Pada Remaja Putri di SMAN 2 Karawang. *MAHESA : Malahayati Health Student Journal*. 2025 May 1;5(5):1858–68. <https://doi.org/10.33024/mahesa.v5i5.17076>
16. Abdullah VI, Rosdianto NO, Adyani K, Rosyeni Y, Rusyanti S. Dismenore [Internet]. Cetakan Pertama. Daerah Istimewa Yogyakarta (DIY): NEM; 2024 [cited 2026 Feb 12]. 1–3 p. Available from: <https://www.google.co.id/books/edition/Dismenore/Tr0DEQAAQBAJ?hl=id&gbpv=0>
17. Mardliyana NE, Puspita IM. Terapi Komplementer pada Pelayanan Kebidanan - Google Books [Internet]. Cetakan Pertama. Wati AW, editor. Daerah Istimewa Yogyakarta (DIY): Deepublish; 2023 [cited 2026 Feb 12]. 34 p. Available from: https://www.google.co.id/books/edition/Terapi_Komplementer_pada_Pelayanan_Kebid/MbM-EQAAQBAJ?hl=id&gbpv=1&dq=non+farmakologi+komplementer+nyeri+haid+dismenore&pg=PA34&printsec=frontcover
18. Zulfikar S. Smart Health Promotion: Era Globalisasi Dan Transformasi Digital. AMU Press [Internet]. 2025 Oct 27 [cited 2026 Apr 14];1–243. Available from: <https://ejournal.amertamedia.co.id/index.php/press/article/view/575>
19. Siagian DS, Sidoretno WM, Ratih RH, Ayuningtyas R. Meningkatkan Kualitas Hidup Remaja melalui Terapi Komplementer: Pendekatan Holistik untuk Kesehatan Remaja (Improving Adolescent Quality of Life through Complementary Therapies: A Holistic Approach to Adolescent Health) | Siagian | Indonesia Berdaya. *Journal of Community Engagement [Internet]*. 2025 [cited 2026 Apr 14];6(1). Available from: <https://ukinstitute.org/journals/ib/article/view/1011>
20. Aulia D, Rahmawati WR, Handayani L, Yulistanti Y. PENGARUH TERAPI KOMBINASI SWEDISH MASSAGE DAN KOMPRES HANGAT TERHADAP DISMENORE PADA MAHASISWI PRODI SARJANA TERAPAN KEPERAWATAN KAMPUS MAGELANG. *Jurnal BIMTAS: Jurnal Kebidanan Umtas*. 2025 May 31;9(1):19–32. doi:10.35568/BIMTAS.V9I1.6923