Med. J. Cairo Univ., Vol. 93, No. 2, Accepted 27/2/2025
DOI: 10.22608/MJCU. 707-715, June 2025
www.medicaljournalofcairouniversity.net

Pelvic Floor Muscle Activity in Primary Dysmenorrhea: Literature Review

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Abstract

Background: Primary Dysmenorrhea (PD) remains a significant health concern, particularly among adolescent females, and is known to adversely affect daily activities and quality of life. Understanding the role of pelvic floor muscle (PFM) activity in PD could provide insight into better management strategies.

Aim of Study: This narrative review aims to investigate the role of pelvic floor muscle (PFM) activity in PD, specifically focusing on how PFM dysfunction contributes to menstrual pain.

Material and Methods: A comprehensive literature search was conducted of studies published up to 2024. The searches were conducted across PubMed, PEDro, Cochrane library, and Google Scholar databases using the keywords "Primary Dysmenorrhea", "Pelvic Floor Muscle" and "Female". Reviewed literature was descriptively analyzed and summarized.

Results: The literature search identified six studies investigating the link between PD and PFM activity, including four observational cross-sectional studies and one experimental study. All studies demonstrate a connection between PD and PFM activity. Three studies highlight the presence of myofascial pain syndrome in women with PD, with a higher prevalence of active myofascial trigger points in the PFM. One study directly correlates PFM dysfunction with PD, while another emphasizes the value of physiotherapy, particularly manual therapy combined with active pelvic floor exercises, in improving PD symptoms. The final study found no association between the presence of PD and changes in the pelvic floor pain pressure threshold. Collectively, these findings underscore the clinical significance of the PD-PFM relationship.

Conclusion: The review demonstrates a strong connection between PD and PFM but highlights a scientific gap in understanding how these muscles respond to different severity of PD.

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Key Words: *Primary dysmenorrhea – Pelvic floor muscle – Female.*

Introduction

PRIMARY dysmenorrhea (PD), characterized by severe menstrual cramps originating from the uterus, is a common gynecological condition affecting women of reproductive age. Despite its high prevalence, PD remains underdiagnosed, partly because many women do not seek medical help. PD typically begins in adolescence, occurring 6–24 months after menarche, and manifests as spasmodic, painful cramps in the lower abdomen, peaking on the first day of menstruation and lasting up to 72 hours **[1]**. PD is the most prevalent form of dysmenorrhea and affects 17–81% of women who menstruate, with severe cases occurring in 12–14% of instances. The condition is most prominent in women aged 20–30, although it is underreported due to the lack of standardized definitions and diagnostic methods **[2-3]**.

In addition to lower abdominal/pelvic pain, dysmenorrhea is usually associated with common symptoms that can be physical or psychological.. Systemic, gastrointestinal, and elimination-related physical symptoms are the most often encountered ones. In addition to aching knees and inner thighs, myalgia, arthralgia, and swollen legs, the systemic symptoms also include headache, lethargy, weariness, sleepiness/sleeplessness, sore breasts, heavy lower belly, and backache. Constipation, diarrhea, frequent urination, and sweating are symptoms connected to elimination, whereas gastrointestinal symptoms include nausea, vomiting, bloating, and an increase or reduction in appetite **[4]**.

The pathophysiology of PD is not entirely clear. Nonetheless, the determined reason is thought to be hypersecretion of PGs from the uterine inner lining. PGs produce pain by increasing uterine contractions and pressure. Impaired uterine perfusion, ischemia, hypoxia, and anaerobic metabolites may all contribute to discomfort. Increased collagenases, inflammatory cytokines, and matrix metal loproteinases in the endometrium are related with lower progesterone and estradiol levels during menstruation. The ensuing destruction of endometrial tissue releases phospholipids, which are turned into arachidonic acid. Cyclooxygenase converts arachidonic acid to prostacyclin, polyglycolides, and thromboxane-2a. PGF-2α and PGE2 raise uterine tone and generate high-amplitude contractions *[5-7]*.

The assessment of PD pain severity is often done through pain scales such as the Visual Analogue Scale (VAS), McGill Pain Questionnaire (MPQ), and the WaLIDD scale, which evaluates pain location, intensity, duration, and impact on daily activities *[8-11]*. Pelvic floor muscle (PFM) dysfunction is emerging as a potential contributor to PD. The PFM, consisting mainly of slow-twitch and fast-twitch fibers, plays a key role in pelvic organ support and function. Dysfunctional PFM activity, whether hypoactive (weak) or hyperactive (tight), can contribute to PD symptoms. Myofascial trigger points (MTrPs), especially in the PFM, are commonly found in women with PD, potentially leading to referred pain in the pelvic region and beyond *[12,13]*.

The relationship between PFM activity and PD involves both hypoactive and hyperactive conditions. Hypoactive pelvic floor muscles are weak with poor endurance, leading to issues like incontinence and prolapse, while hyperactive muscles are tense, causing pain, trigger points, and functional impairments such as painful intercourse and urinary retention *[14-18]*. Myofascial trigger points (MTrPs), commonly found in the PFM, rectus abdominus, quadratus lumborum, and gluteus medius, are hyperirritable spots that cause localized or referred pain *[19]*. Chronic muscle spasms may compensate for levator ani abnormalities or high pelvic floor demands *[20]*. Hormonal fluctuations during the menstrual cycle can increase pain sensitization in the pelvic floor, contributing to heightened sensitivity. MTrPs in the pelvic floor can refer pain to areas such as the urethra, vagina, rectum, lower abdomen, and back, and may be linked to symptoms in other systems, including gastrointestinal and urological conditions *[22]*.

Recent research suggests that pelvic floor exercises, such as Kegel exercises, can help alleviate PD by improving muscle function, increasing blood flow, and reducing uterine contractions. These exercises may also activate sympathetic and parasympathetic nervous systems, promoting pain relief. However, myofascial release therapy, which targets muscle fascia and trigger points, may offer more direct relief from PD by reducing pelvic floor muscle tension and improving circulation. Both interventions, while promising, require further exploration to determine their relative efficacy in managing PD symptoms *[23,24]*.

However, the relationship between PD and PFM activity remains underexplored, particularly in terms of how PFM dysfunction might contribute to menstrual pain. Few studies have investigated the relationship between pelvic floor pressure threshold and dysmenorrhea *[20,21]* but none of them assessed pelvic floor muscle activity during contraction and relaxation in females with PD. So this study aims to investigate the pelvic floor muscle activity in PD. Therefore, this study reviewed the existing literature on the relationship between PFMs and PD aiming to the development of evidence-based interventions that could improve symptom management and quality of life for women with PD. Understanding these mechanisms will not only benefit clinical practice but also provide a more holistic approach to managing this prevalent and often debilitating condition.

Material and Methods

This review consolidates findings from studies examining the relationship between phonation and PFM function. A literature search was performed using Medical Subject Headings (MeSH) keywords as shown in Appendix 1. The searches were conducted across PubMed, Scopus, Web of Science, Cochrane Library, Clinical Trials, Science Direct, Pedro, Sage Data and Google Scholar. The review process spanned two months (October 2024 to November 2024) and focused on articles published up to 2024, including only those written in English. Additionally, references from the selected studies were examined to identify further relevant articles.

Results

Results of this review are based on reviewing the available literature about the pelvic floor muscle activity in primary dysmenorrhea. A summary of the six reviewed studies is provided in (Table 1).

Table (1): The characteristics of the studies investigated the pelvic floor muscle activity in primary dysmenorrhea.

	Study design	Patients	Age mean	Outcome	Conclusion
Ellen Caroline Navroski et al. **[25]**	- A descriptive, observational, cross-sectional study	- 45 women with dysmenorrhea with pain intensity 5 on the VAS scale	- Median age was 21 years	- Socio-clinical, international consultation on incontinence questionnaire-short form - Pelvic floor distress inventory - Visual analog scale (VAS)	- Dysmenorrhea is prevalent in young nulliparous women with an association between vaginal and intestinal dysfunctions, this population presents pelvic floor muscle weakness and symptoms of premenstrual tension predominantly of an emotional nature
Gupta et al. **[26]**	- An experimental study	- 40 subjects experiencing dysmenorrhea	- Females in the age range of 20 to 30 years	- Visual analog scale (VAS)	- The results of the study concluded that there is a significant effect of pelvic floor muscle strengthening and myokinetic active release of trigger points of rectus abdominis, gluteus medius and quadratus lumborum in treating dysmenorrhea. However, myokinetic active release of trigger points was found to be more effective than pelvic floor strengthening
Deodato et al. **[28]**	- A prospective observational study	- Thirty females with history of primary dysmenorrhea	- Age 25.0±6.1y	- A 0-10 numeric rating scale (NRS) was administered to assess subjective pain - Short-form 36 (SF-36) was used to evaluate quality of life - The pressure pain threshold (PPT) was assessed with a portable algometer on different pelvic and lumbar areas	- The findings highlight the importance of proposing physiotherapy treatments to females with primary dysmenorrhea to improve symptoms, with manual therapy combined with active pelvic floor exercise providing the best outcomes including an improvement of lumber pain thresholds
Lima et al. **[21]**	- An observational, quantitative and cross-sectional study	- 20 women with primary dysmenorrhea	- The study included women between the ages of 18 and 35	- Manual dynamometer, for evaluation of the pressure threshold of pain	- In this women sample, the occurrence or non-occurrence of primary dysmenorrhea was not associated with an increase in the pain pressure threshold of the pelvic floor
Hoyos-Calderon et al. **[27]**	- Observational, cross-sectional, case-control study	- 80 subjects diagnosed with primary dysmenorrhea by a gynecol ogy specialist	- Women between 18 and 43 years	- Pain pressure threshold (PPT) was assessed by algometry - Menstrual pain was self-reported using a numeric rating scale - Anxiety status was assessed through state-trait anxiety inventory (STAI)	- Myofascial pain syndrome symptoms are present in women with PD, when compared with a control group, without any sign of anxiety acting as a confounder for pain sensitivity
Serrano-Imedio et al. **[19]**	- A cross-sectional descriptive study	- 84 participants with primary dysmenorrhea if they had a VAS greater than 3/10 at the time of the first assessment	- A mean ± SD age of 31.20±7.65 years	- The McGill questionnaire - The 12-item short form survey (SF-12) SF-12 - Visual anlgo scale (VAS)	- A higher prevalence of active MTrPs was found in the rectus abdominis, gluteus maximus, ischiocavernosus, and pubococcygeus muscles during the menstrual phase. A higher prevalence of active MTrPs in the iliococcygeus muscle and latent MTrPs in the ischiocavernosus muscle was found in the menstrual, periovulatory, and intermentrual phases in women with PD

Discussion

In this literature review, we aim to examine the existing body of research regarding the relationship between PFM activity and primary dysmenorrhea, based on studies conducted in recent years.

Myofascial pain syndrome and primary dysmenorrhea:

Serrano-Imedio et al. **[19]** conducted a case-control study exploring the presence of myofascial pain syndrome (MPS) in women with PD. The results highlighted that women with PD exhibited a significantly higher prevalence of active MTrPs in various muscle groups, including the pelvic floor. MTrPs, which are hyperirritable spots within muscle fibers, can refer pain to adjacent body areas, exacerbating the pain experienced by women with PD. The study concluded that MTrPs in the pelvic floor could be a contributing factor to the chronic pain seen in PD. However, one limitation of this study is that it only focused on the abdominal region and did not include a thorough assessment of the pelvic floor muscles, which could provide more clarity on the direct relationship between PFM dysfunction and PD.

Similarly, Hoyos-Calderon et al. **[27]** found a higher prevalence of active MTrPs in the pelvic region of women with PD. Their study suggested that these trigger points contribute to the pain mechanism through the neural pathway. While the study provides valuable insights, it primarily focused on central sensitization and did not evaluate the pelvic floor muscle activity specifically, which could have provided a deeper understanding of the interplay between PFM dysfunction and PD.

Pelvic Floor Muscle Dysfunction and PD: A Complex Relationship:

Several studies have investigated the relationship between PFM dysfunction and PD, though findings have been inconsistent. Lima et al. **[21]** conducted a study comparing the pain pressure threshold of the pelvic floor in women with and without PD. They found no significant differences in pelvic floor pain sensitivity between the two groups. This suggests that PD may not involve central pain sensitization of the pelvic floor, contrary to what some researchers have proposed. The lack of central sensitization in the pelvic floor muscles in this study may imply that PD's pain mechanisms are more closely linked to other structures, such as the uterus or abdominal muscles, rather than the pelvic floor itself.

In contrast, Gupta et al. **[26]** compared the effectiveness of pelvic floor strengthening exercises and myokinetic active release of trigger points in reducing dysmenorrhea symptoms. The study found both interventions to be effective, with myokinetic active release therapy demonstrating a stronger effect on reducing PD symptoms. This supports the hypothesis that myofascial release, targeting the pelvic floor and other related muscles, may alleviate menstrual pain by addressing muscle hyperactivity and trigger points.

The evidence for the relationship between PFM activity and PD is still inconclusive. Some studies suggest that hyperactive pelvic floor muscles, marked by increased tension and dysfunction, could contribute to the severity of PD symptoms. Others argue that PFM dysfunction may not be directly related to PD but could exacerbate the pain through the presence of MTrPs. Given the complexity of the condition, it is likely that multiple factors including hormonal fluctuations, neural pathways, and muscular dysfunction work together to influence pain perception and severity.

Mechanisms of pain and muscle activity:

Deodato et al. **[28]** explored the efficacy of manual therapy and pelvic floor exercises for pain reduction in PD and found that both interventions led to a reduction in pain. The authors hypothesized that manual therapy might help in releasing tension in the pelvic floor, while pelvic floor exercises could improve muscle tone and function. This suggests that managing PFM tone and activity could play a role in mitigating the severity of PD. However, the study also pointed out the need for more rigorous trials to confirm these effects and better understand the specific mechanisms involved.

Critique of the current literature:

While the studies reviewed provide valuable insights into the potential relationship between PFM activity and PD, there are several limitations in the existing literature. First, there is significant variability in the methodologies used, including the assessment of PFM activity and the classification of PD severity. Some studies focused on abdominal or general pelvic muscle activity, while others explored myofascial trigger points without directly measuring pelvic floor muscle activity. These differences in approach complicate the ability to draw definitive conclusions.

Additionally, many studies are cross-sectional or case-control in nature, limiting their ability to establish causality. Longitudinal studies are needed to investigate whether chronic PFM dysfunction or hyperactivity leads to long-term changes in muscle structure and function, thereby contributing to the development or worsening of PD. Furthermore,

many studies fail to account for other factors that could influence PFM function and pain perception, such as lifestyle, physical activity, or hormonal influences, all of which may interact with PFM activity.

Another limitation is the lack of a standardized assessment of PFM dysfunction. While some studies used ultrasound or electromyography (EMG) to assess PFM activity, these methods are not universally adopted, and their findings may vary depending on the equipment and protocols used. A more standardized and comprehensive approach to measuring PFM function is needed as ultrasonography to improve the reliability of findings.

Conclusion:

The relationship between PFM activity and PD remains an area of ongoing research with promising but inconclusive results. While some studies suggest that PFM dysfunction, particularly hyperactivity and myofascial trigger points, may contribute to the severity of PD symptoms, other research indicates that PFM dysfunction may not be directly related to pain sensitivity. Given the multifactorial nature of PD, it is likely that PFM activity is just one component of a complex pain mechanism involving hormonal, neural, and muscular factors. Further research, including longitudinal studies with standardized assessment methods, is needed to clarify the exact role of PFM activity in PD and to explore the most effective interventions for managing this condition. Addressing PFM dysfunction through non-pharmacological treatments, such as pelvic floor exercises and myofascial release therapy, could provide a valuable adjunct to existing treatment strategies for PD.

References

1- ITANI R., SOUBRA L., KAROUT S., RAHME D., KAROUT L. and KHOJAH H.M.J.: Primary Dysmenorrhea: Pathophysiology, Diagnosis, and Treatment Updates. Korean Journal of Family Medicine, 43 (2): 101–108, 2022. https://doi.org/10.4082/kjfm.21.0103.

2- GUIMARÃES I. and PÓVOA A.M.: Primary Dysmenorrhea: Assessment and Treatment. Revista Brasileira de Ginecologia E Obstetrícia / Gynecology and Obstetrics, 42 (08): 501–507, 2020. https://doi.org/10.1055/s-0040-1712131.

3- BERNARDI M., LAZZERI L., PERELLI F., REIS F.M. and PETRAGLIA F.: Dysmenorrhea and related disorders. F1000 Research, 6 (6), 1645, 2017. https://doi.org/10.12688/f1000research.11682.1.

4- NÚÑEZ-TROCONIS J., CARVALLO D. and MARTÍNEZ-NÚÑEZ E.: Primary Dysmenorrhea: Pathophysiology. Investigación Clínica, 62(4), 378–406, 2021. https://doi.org/10.22209/ic.v62n4a08.

5- KAROUT S., SOUBRA L., RAHME D., KAROUT L., KHOJAH H.M.J. and ITANI R.: Prevalence, risk factors, and management practices of primary dysmenorrhea among young females. BMC Women's Health, 21 (1), 2021. https://doi.org/10.1186/s12905-021-01532-w.

6- NAGY H., CARLSON K. and KHAN M.A.B.: Dysmenorrhea. [Updated 2023 Nov 12]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK560834/

7- HORVAT M., DOROTEJA PAVAN JUKIĆ, LOVRO MARINOVIĆ, BURSAĆ, D., RIBIĆ R., NEUBERG M. and DANIJEL BURSAĆ: Prevalence of Primary Dysmenorrhoea and Its Impact on Academic Performance among Croatian Students during the COVID-19 Pandemic, 1–7, 2023. https://doi.org/10.1155/2023/2953762.

8- S. SALEH H. and E. MOWAFY H.: Stretching or Core Strengthening Exercises for Managing Primary Dysmenorrhea. Journal of Womens Health Care, 05 (01): 295-301, 2016. https://doi.org/10.4172/2167-0420.1000295.

9- FERRIES-ROWE E., COREY E. and ARCHER J.S.: Primary Dysmenorrhea. Obstetrics & Gynecology, 136 (5): 1047–1058, 2020. https://doi.org/10.1097/aog.0000000000004096.

10- BURNETT M. and LEMYRE M.: No. 345-Primary Dysmenorrhea Consensus Guideline. Journal of Obstetrics and Gynaecology Canada, 39 (7): 585–595, 2017. https://doi.org/10.1016/j.jogc.2016.12.023.

11-GAMMOH O., ROB A., ABDELRAHIM ALQUDAH, AL-SMADI A., MOHAMAD OBADA DOBAIN, REHAM ZEGHOUL, ALAA A.A. ALJABALI and MERVAT ALSOUS: Risk factors for severe dysmenorrhea in Arab women: A focus on war displacement and mental health outcomes. AIMS Public Health, 11 (1): 209–222, 2024. https://doi.org/10.3934/publichealth.2024010.

12- LAYCOCK J. and JERWOOD D.: Pelvic Floor Muscle Assessment: The PERFECT Scheme. Physiotherapy, 87 (12): 631–642, 2001. https://doi.org/10.1016/s0031-9406(05)61108-x.

13- ROCCA ROSSETTI S.: Functional anatomy of pelvic floor. Archivio Italiano Di Urologia E Andrologia, 88 (1): 28, 2016. https://doi.org/10.4081/aiua.2016.1.28.

14- RAI A., SHARMA N., JAIN S.K., LALWANI A. and SHARMA S.: Accuracy and Reliability of Different Approaches for the Assessment of Pelvic Floor Muscle Strength: A Systematic Review. Journal of Pharmacy & Bioallied Sciences, 15 (Suppl 2): S856–S861, 2023. https://doi.org/10.4103/jpbs.jpbs_241_23.

15- KELLY M., TAN B-K., THOMPSON J., CARROLL S., FOLLINGTON M., ARNDT A. and SEET M.: Healthy adults can more easily elevate the pelvic floor in standing than in crook-lying: An experimental study. Australian Journal of Physiotherapy, 53 (3): 187–191, 2007. https://doi.org/10.1016/s0004-9514(07)70026-0.

16- WHITTAKER J.L., THOMPSON J.A., TEYHEN D.S. and HODGES P.: Rehabilitative Ultrasound Imaging of Pelvic Floor Muscle Function. Journal of Orthopaedic & Sports Physical Therapy, 37 (8): 487–498, 2007. https://doi.org/10.2519/jospt.2007.2548.

17- SHERBURN M., MURPHY C.A., CARROLL S., ALLEN T.J. and GALEA M.P.: Investigation of transabdominal real-time ultrasound to visualise the muscles of the pelvic floor. Australian Journal of Physiotherapy, 51 (3): 167–170, 2005. https://doi.org/10.1016/s0004-9514(05)70023-4.

18- TIM S. and MAZUR-BIALY A.I.: The Most Common Functional Disorders and Factors Affecting Female Pelvic Floor. Life, 11 (12): 1397, 2021. https://doi.org/10.3390/life11121397.

19- SERRANO-IMEDIO A., CALVO-LOBO C., CASAÑAS-MARTIN C., GARRIDO-MARIN A. and PECOS-MARTIN D.: Myofascial Pain Syndrome in Women with Primary Dysmenorrhea: A Case-Control Study. Diagnostics, 12 (11): 2723, 2022. https://doi.org/10.3390/diagnostics12112723.

20- MEISTER M.R., SHIVAKUMAR N., SUTCLIFFE S., SPITZNAGLE T. and LOWDER J.L.: Physical examination techniques for the assessment of pelvic floor myofascial pain: A systematic review. American Journal of Obstetrics and Gynecology, 219 (5): 497.e1–497.e13, 2018.

21- LIMA V., DOS S.G., ARRUDA G.T. DE, STRELOW C.S., FROELICH M.A., SACCOL M.F. and BRAZ M.M.: Comparison of the pain pressure threshold on the pelvic floor in women with and without primary dysmenorrhea. Brazilian Journal of Pain, 2 (2): 101-4, 2019. https://doi.org/10.5935/2595-0118.20190019.

22- ITZA F., ZARZA D., SERRA L., GÓMEZ-SANCHA F., SALINAS J. and ALLONA-ALMAGRO A.: [Myofascial pain syndrome in the pelvic floor: A common urological condition]. Actas Urologicas Espanolas, 34 (4): 318–326, 2010. https://pubmed.ncbi.nlm.nih.gov/20470693/.

23- PASCOE M.C., THOMPSON D.R., JENKINS Z.M. and SKI C.F.: Mindfulness mediates the physiological markers of stress: Systematic review and meta-analysis. Journal of Psychiatric Research, 95: 156–178, 2017. https://doi.org/10.1016/j.jpsychires.2017.08.004.

24- SRINIVASAN M., TORRES J.E., MCGEARY D. and NAGPAL A.S.: Complementary and Alternative (CAM) Treatment Options for Women with Pelvic Pain. Current Physical Medicine and Rehabilitation Reports, 8 (3): 240–248, 2020. https://doi.org/10.1007/s40141-020-00264-6.

25- ELLEN CAROLINE NAVROSKI, EMANUELLA MILDE-MBERGER FRANCO, FERNANDA APARECIDA PENTEADO, DE F. and LOPES J.: Dysmenorrhea and pelvic floor muscular dysfunctions in young nuliparaus women: Is there an association? Brazilian Journal of Physical Therapy, 28: 100713–100713, 2024. https://doi.org/10.1016/j.bjpt.2024.100713.

26- GUPTA S., ARORA M. and YADAV P.: Comparative Evaluation of Effectiveness of Pelvic Floor Strengthening and Myokinetic Active Release of Trigger Points in Reducing Dysmenorrhea. RGUHS Journal of Medical Sciences, 13 (3): 112-116, 2023. https://doi.org/10.26463/rjms.13_3_5.

27- HOYOS-CALDERON Y.-T., MARTÍNEZ-MERINERO P., NUNEZ-NAGY S., PECOS-MARTÍN D., CALVO-LOBO C., ROMERO-MORALES C., ABUÍN-PORRAS V., & SERRANO-IMEDIO A.: Myofascial Trigger Points and Central Sensitization Signs, but No Anxiety, Are Shown in Women with Dysmenorrhea: A Case-Control Study. Biology, 11 (11): 1550, 2022. https://doi.org/10.3390/biology11111550.

28- DEODATO M., GROSSO G., DRAGO A., MARTINI M., DUDINE E., MURENA L. and BUOITE STELLA A.: Efficacy of manual therapy and pelvic floor exercises for pain reduction in primary dysmenorrhea: A prospective observational study. Journal of Bodywork and Movement Therapies, 36: 185–191, 2023. https://doi.org/10.1016/j.jbmt.2023.07.002.

29- DANTAS A., BARBOSA I., CASTRO S., FERREIRA C., CAMARA S. and DANTAS D.: Prevalence and factors associated with constipation in premenopausal women: A community-based study. Arq Gastroenterol., 57 (2): 188–192, 2020.

Appendix I
Keywords

Key concepts	Concept 1	Concept 2	Concept 3
Free Text Terms Synonyms UK/US terminology Medical terms Abbreviations Searching proximity Operators Truncation Wildcard Controlled vocabulary Mesh Emtree term Explode Major heading Subheading	*Pelvic Floor:* • PFMs [Tw] • Pelvic floor muscle* [Tw] • Pelvic Floor, [MESH] • Pelvic Diaphragm [MESH] • Abdominal Core [MESH] • Pelvic floor Muscle [MESH] • Diaphragm, Pelvic [MESH]	*Females:* • Women • Femininity • Female Individuals • Adult Females • F (Females) ♀ *Truncation:* • Femal* • Wom* • Girl* *Wildcard:* • Female • Women Gender *Operators: "OR"* • Females [MESH] • Women's Health [MESH] *Emtree Term:* • Female Population • Woman • Gender Differences *Explode:* • Females • Women's Health • Female Physiology *Major Heading:* • Female Health • Gynecology • Reproductive Physiology *Subheading:* • Epidemiology • Physiology • Pathophysiology	*Primary Dysmenorrhea (PD):* • Idiopathic Dysmenorrhea • Functional Dysmenorrhea • Spasmodic Dysmenorrhea • Essential Dysmenorrhea • Primary Menstrual Cramps • Menstrual Pain Syndrome • Menstrual Cramps • Cyclic Pelvic Pain • Uterine Hypercontractility • Prostaglandin-Induced Dysmenorrhea • PD – Primary Dysmenorrhea • ID – Idiopathic Dysmenorrhea (less common) • SpD – Spasmodic Dysmenorrhea *Truncation:* • Dysmenorrhe* • Menstrual Cram* *Wildcard:* • Dysmenerrhea • Menstrial Pain • Uterine Hypercontractility *Operators: "OR"* • Dysmenorrhea [MESH] • Menstrual Disorders [MESH] • Uterine Contractions [MESH] • Prostaglandin-Induced Dysmenorrhea [MESH] *Emtree Term:* • Spasmodic Dysmenorrhea • Idiopathic Dysmenorrhea • Menstrual Cramps *Explode:* • Primary Dysmenorrhea • Uterine Hypercontractility • Menstrual Pain Syndrome *Major Heading:* • Gynecological Conditions • Menstrual Cycle Disorders • Pelvic Pain *Subheading:* • Etiology • Pathophysiology • Management & Treatment

نشاط عضلات قاع الحوض فى عسر الطمث الأولي

يُعد عسرالطمث الأولى (PD)، الذي ينطوي على تشنجات الحيض الحادة التي تنشأ في الرحم، حالة مرضية نسائية منتشرة للغاية بين النساء في سن الإنجاب. ولكن، على الرغم من شيوعها، لا تطلب العديدمن النساء المساعدة الطبية، لذلك غالباً ما لايتم تشخيصها بشكل كافٍ. ويوصف هذا المرض بأنه تشنجات متقطعة ومؤلمة في أسفل البطن تحدث قبل أوعند بدء الدورة الشهرية مباشرة في غياب أي مرض في الحوض. وتبدأ عادةً في سن المراهقة، بين ٦ أشهر و٢٤ شهراً بعد الحيض. هذا الألم له نمط محدد ودوري، وعادةً ما يكون قويًا خلال اليوم الأول من الحيض ويستمر حتى ٧٢ ساعة.

والأنواع الرئيسية لعسرالطمث هي عسرالطمث الأولي والثانوي، وعسرالطمث الأولي هو أكثر الحالات النسائية انتشاراً. على عكس عسر الطمث الثانوي، يقل انتشاره مع التقدم في العمر ويكون أكثر بروزاً في العقدين الثاني والثالث من العمر.

بالإضافة إلى آلام أسفل البطن/الحوض، عادةً مايرتبط عسرالطمث بأعراض شائعة يمكن أن تكون جسدية أو نفسية. الأعراض الجسدية الجهازية والجهاز الهضمي والأعراض الجسدية المتعلقة بالتخلص من الفضلات هي الأكثر شيوعاً. بالإضافة إلى آلام الركبتين وداخل الفخذين والألم العضلي وألم المفاصل وتورم الساقين، تشمل الأعراض الجهازية أيضًا الصداع والخمول والتعب والنعاس/الأرق والتهاب الثديين وثقل أسفل البطن وآلام الظهر. الإمساك والإسهال وكثرة التبول والتعرق من الأعراض المرتبطة بالإخراج، في حين تشمل أعراض الجهاز الهضمي الغثيان والقيء والانتفاخ وزيادة أو انخفاض الشهية بينما تشمل الأعراض النفسية تقلبات المزاج مثل القلق والاكتئاب والتهيج.

يرتبط عسرالطمث الأولي بانخفاض جودة الحياة؛ فهو يؤثر على العلاقات الأسرية والصداقات والأنشطة الاجتماعية والرياضية ،وكثيراً مايؤدي إلى التغيب عن المدرسة أوالجامعة أوالعمل، فضلاًعن انخفاض الأداء الأكاديمي. ويؤثر الاضطراب العاطفي القهري على العديد من عناصر الأداء الأكاديمي، بما في ذلك الحضورفي الصف، وكتابة الواجبات المنزلية، واجتياز الامتحانات، والدرجات، على الرغم من أن بعض الأبحاث تظهرأن التركيز في الصف هو الأكثر تأثراً. وتكشف الدراسات الطولية السابقة أن معدلات التغيب بسبب عسرالطمث الأولي لدى الشابات تتراوح بين ٣٤٪ و٥٠٪، مع تقدير أن ١٠-٣٠٪ من جميع الطالبات والشابات العاملات المصابات بعسرالطمث يتغيبن عن العمل من يوم إلى يومين في الشهر. يؤدي الاضطرار إلى أخذ يوم إجازة إلى خسارة في الإنتاج، مما يؤدي في النهاية إلى خسائر اقتصادية، كما تشير بيانات بعض الأبحاث القديمة. على سبيل المثال، تم حساب خسارة سنوية قدرها ٢,٦ مليار دولار في اليابان . يتميزالألم عمومًا بنوعية منهكة بشكل عام، مما يساهم في الطابع المجهد لعسر الطمث ويصبح مصدرًا مهمًا للتهيج لدى العديد من الإناث، خاصة أولئك اللاتي يعانين من عسرالطمث. وتسمح المسكنات لبعض الإناث بالاستمرار في العمل في حين أن البعض الآخرلا يتحركن تمامًا ويقتصرن على أسرّتهن .

وبشكل أكثر شيوعاً، تركزالدراسات على فحص منطقة البطن لدى النساء المصابات بالحيض. ومع ذلك، تشيرالأبحاث الحديثة إلى أن التقلبات الهرمونية أثناء الدورة الشهرية قد تؤثرعلى آليات التحسس من الألم في الجهاز العصبي المركزي (CNS)، مما قد يؤدي إلى زيادة حساسية قاع الحوض طوال الدورة الشهرية.

وقداستخدم أخصائي والعلاج الطبيعي مؤخرا الموجات فوق الصوتية عبرالبطن كنهج غير جراحي لتقييم وظيفة "رفع" قاع الحوض. توفرهذه التقنية رؤى قيمة حول نشاط العضلات دون الحاجة إلى تدريب متخصص أو إجراءات جراحية تعمل تمارين كيجل على تحسين وظيفة عضلات قاع الحوض وتخفيف أعراض عسرالطمث من خلال تعزيز تدفق الدم والنبضات العصبية. ومن المحتمل أن تقلل من إفراز البروستا غلاندين، مما يخفف من تقلصات الرحم وآلام الدورة الشهرية. وعلاوة على ذلك، تعمل تمارين كيجل على تنشيط المستقبلات السمبثاوية والباراسمبثاوية، إلى جانب تقليل الطلب على الأكسجين ومستويات حمض اللاكتيك، وتحفز إفراز الإندورفين تخفيف الألم. تقلل ممارسة تمارين كيجلا المنتظمة بشكل كبيرمن شدة الألم وتحسن من جودة الحياة بشكل عام لدى النساء المصابات بالحيض .

من ناحية أخرى، تشير الأدلة الحديثة إلى أن إطلاق اللفافة العضلية العضلية قد يكون أكثر فعالية من تمارين قاع الحوض في تخفيف حدة الألم. يستهدف علاج تحريراللفافة العضلية والنسيج الضام المحيط بالعضلات، بهدف تحرير التوتر وتحسين حركة الأنسجة. يُعتقد أن هذا النهج يعالج نقاط التحفيز العضلي ويقلل من توترعضلات قاع الحوض بشكل مباشر أكثرمن تمارين قاع الحوض التقليدية وحدها. من خلال تحرير اللفافة المشدودة وتعزيز وظيفة العضلات والدورة الدموية بشكل أفضل في منطقة الحوض، قد يوفر العلاج بتحريراللفافة العضلية راحة كبيرة من آلام الدورة الشهرية وعدم الراحة.