

Beyond the Monthly Cycle: Examining Typical Menstrual Complications, Herbs Management and Their Effects on Female Health

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Abstract

Menstrual disorders are a major yet under-appreciated societal health problem that afflicts women of various ages, especially the teenagers and those within the reproductive age group. Dysmenorrhea, menorrhagia, amenorrhea, and PMS are conditions caused by complex interplays of hormonal imbalances, inflammatory events, lifestyle habits, and underlying medical issues that cause significant physical pain, psychological problems, and socio-economic issues. The traditional methods of management, which include non-steroidal anti-inflammatory drugs (NSAIDs) and hormonal treatment, are useful but have been attributed to side effects and long-term restrictions. It is in this regard that herbal medicine has been receiving growing interest as a complementary and alternative therapy in the light of its natural source, low cost, and multi-targeted effects. This review critically analyzes the types and impacts of menstrual disorders, the role of the widely used medicinal plants (*Zingiber officinale*, *Curcuma longa*, *Saraca asoca*, *Trigonella foenum-graecum*), and their mechanisms of action (anti-inflammatory, antispasmodic, and hormone-regulating activities). The results show that herbal remedies have a potential to be promising in the treatment of menstrual and reproductive health but issues like non-standardization, variability in preparation and insufficient clinical validation are still major challenges. The research advocates the necessity to combine traditional herbal knowledge with contemporary scientific research to create safe, effective, and evidence-based measures of menstrual health management to help increase the quality of life and sustainable healthcare practices in women.

Keywords: Menstrual disorders, dysmenorrhea, herbal medicine, premenstrual syndrome (PMS), amenorrhea, medicinal plants, women's health, natural therapy, hormonal imbalance, reproductive health

Received: Jan. 27, 2026

Revised: Feb. 18, 2026

Accepted: March 21, 2026

Published: April 25, 2026

DOI: <https://doi.org/10.64063/3049-1630.vol3.issue4.000242>

<https://ijphdt.com>

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International Journal of Pharmacognosy and Herbal Drug Technology (IJPHDT)

ISSN: 3049-1630 | Vol. 03, Issue-04, April -2026 | pp. 109-126

Int. J. Pharmacogn. Herb. Drug Technol.

1. INTRODUCTION

Menstruation is an essential physiological process of the female reproductive system, which is under the control of a highly coordinated interaction of hormones in the hypothalamic-pituitary-ovarian (HPO) axis. It is a complex regulating process that includes the secretion of the gonadotropin-releasing hormone (GnRH) by the hypothalamus that causes the release of follicle-stimulating hormone (FSH) and luteinizing hormone (LH) by the pituitary gland, which ultimately affect the functioning of the ovary and the preparation of the endometrium cycle¹. Although menstruation is a natural and key biological process, it is often accompanied by various disorders, such as dysmenorrhea, menorrhagia, amenorrhea, and PMS, which may have a negative effect on the physical condition of women, their mood, and the quality of life, in general.

Such menstrual complications are usually characterized by chronic pains, fatigue, mood disorders, and hormonal imbalances therefore disrupting the normal day-to-day activities, academic work and even occupational performance. Moreover, the impact of menstrual disorders goes beyond personal health to wider social and economic issues. Nevertheless, they are still grossly underreported and poorly addressed, which is, in large part, attributed to the social stigma, cultural taboos, and misconceptions about menstruation. In most communities, it is not customary to openly talk about menstrual health and as a result, diagnosis is delayed and there is also a low treatment-seeking behavior².

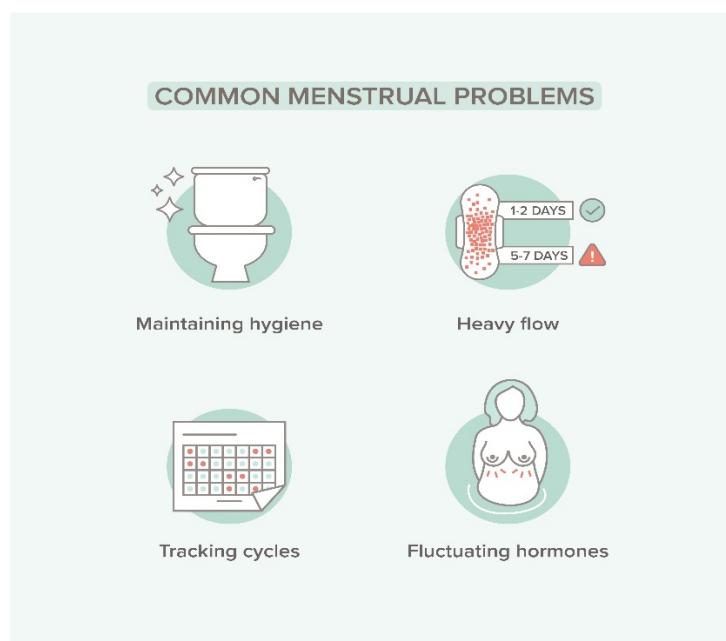


Figure 1: common menstrual complications

Moreover, lack of proper knowledge on menstrual health and hygiene, and lack of access to quality healthcare services, especially those of low-resource and rural areas, aggravates the issue. Many women are not provided with timely and appropriate interventions due to the absence of complete education and adequate healthcare facilities that support them. Thus, the aspect of menstrual health

needs not only health care but also social awareness, educational programs, and the availability of health care to achieve the full well-being of the whole person and empower women³.

1.1. Background and Context

The prevalence of menstrual health disorders is high in all age groups with an exceptionally high rate in adolescents and women of childbearing age. The disorders are very diverse and include dysmenorrhea (painful menstruation), menorrhagia (excessive or prolonged menstrual bleeding), amenorrhea (absence of menstruation), and PMS. They tend to be multifactorial in nature and tend to occur as a result of a complex interaction of hormonal imbalances, inflammatory reactions, genetic predisposition, lifestyle choices, including stress and poor diets, and (underlying medical disorders) endocrine disorders and gynecological malformations. The growing rates of these conditions are an indication that there is a need to have powerful and sustainable management strategies.

Menstrual disorders have not just physical but also emotional, cognitive, and social implications⁴. The symptoms that are often reported by women with these conditions include chronic pelvic pain, fatigue, irritability, and mood disturbances that may disrupt the daily lives, academic performance, and the productivity of occupations. In addition to this, untreated or improperly treated menstrual disorders can have long-term health effects such as anemia, infertility, and psychological distress which can be a point in highlighting the significance of timely and appropriate intervention⁵.

Traditional methods of treating menstrual disorders are mainly based on pharmacological treatment using NSAIDs, hormonal therapy, and oral contraceptives. To alleviate pain and inflammation, NSAIDs are prescribed to prevent the production of prostaglandins, and hormonal therapies and contraceptives are prescribed to control menstrual cycles and treat hormonal disorders⁶. Despite the fact that these treatments may be effective in terms of managing the symptoms, they are commonly coupled with negative effects like gastrointestinal problems, hormonal side effects, and possible risks in the long-term use. Also, not every patient reacts positively to these treatment methods, and some of them can also have contraindications⁷.

Table 1: Overview of Menstrual Disorders, Impacts, and Management Approaches

Category	Key Aspects	Description
Prevalence and Scope	Common Disorders	Dysmenorrhea, menorrhagia, amenorrhea, and PMS are highly prevalent among adolescents and women of reproductive age.
	Contributing Factors	Hormonal imbalance, inflammation, genetic predisposition, lifestyle factors (stress, poor nutrition), and underlying medical conditions.
Health Impact	Physical Effects	Chronic pelvic pain, fatigue, anemia, and reduced physical performance.

	Psychological Effects	Mood disturbances, irritability, anxiety, depression, and cognitive impairment.
	Social Effects	Reduced participation in education, work, and daily activities; decreased productivity.
Conventional Treatment	Pharmacological Methods	Use of NSAIDs, hormonal therapies, and oral contraceptives to manage symptoms and regulate cycles.
	Limitations	Problems with the digestive system, hormonal imbalance, and incompatibility with long-term usage are some of the side effects.
Herbal Medicine Approach	Traditional Systems	Herbal remedies are an integral part of Ayurveda, TCM, and Unani systems of medicine.
	Therapeutic Actions	Anti-inflammatory, analgesic, antispasmodic, and hormone-regulating effects.
	Advantages	Natural origin, affordability, accessibility, and holistic treatment approach.
Research and Challenges	Scientific Advancements	Increasing research validating pharmacological properties of medicinal plants.
	Limitations	Discordant practices, inconsistent quality standards, and a dearth of solid clinical data.
Future Perspective	Integration Approach	Integrating conventional medical understanding with cutting-edge scientific research to provide treatment backed by solid evidence.

1.2.Objectives of the Study

The main goals of this evaluation are:

- To examine the major types of menstrual complications and their underlying physiological and pathological causes
- To explore the role of herbal medicine in the management of menstrual disorders
- To analyze existing literature on the efficacy, mechanisms, and safety of commonly used medicinal plants
- To critically evaluate the strengths and limitations of herbal treatments
- To identify gaps in current research and suggest directions for future studies

1.3. Importance of the Study

This review is valuable as it is a holistic view of the health of menstruation outside traditional views⁸. As the scientific and holistic healthcare systems develop more interest in the topic of natural and holistic remedies, there is a need to review the scientific foundation and the therapeutic value of herbal remedies in the treatment of menstrual disorders.

The research adds to the accumulated knowledge by mentioning the effectiveness, low cost, and accessibility of the herbal treatments, especially in the resource-constrained environment. It also underlines the necessity of the merging of the traditional and modern scientific knowledge in the creation of safe, standardized, and evidence-based treatment methods.

Moreover, this review will assist healthcare professionals, researchers and policymakers in enhancing better menstruation health management and supporting the overall well-being of women⁹.

2. CLASSIFICATION AND EFFECTS OF MENSTRUAL COMPLICATIONS

Menstrual disorders are a broad range of gynecological disorders that occur in women in their reproductive age, indicating a disruption in the normal working of the menstrual cycle. The disorders may be categorized in a systematic manner depending on a number of parameters such as the nature and type of symptoms, the duration and frequency of the cycles and the physiological or pathological mechanisms that are involved. These conditions include menstrual abnormalities and the regularity of menstrual cycles as well as pain-related conditions and hormonal disorders. Along with breaking the cyclic nature of menstruation, the conditions have far-reaching impacts, having a tremendous effect on physical health, emotional state, and social functionality¹⁰. The women with menstrual disorders usually have restrictions in their daily lives, decreased working efficiency, and quality of life. This is why it is necessary to understand their classification so that they can be diagnosed correctly, subjected to specific treatment measures, and systems of effective management can be created.

The causes of menstrual complications are often multifactorial in nature and involve a complex interplay of hormonal imbalances, lifestyle choices (stress and physical inactivity), nutritional (especially iron deficiency) and underlying medical (endocrine and gynecological abnormalities) cases. They can also be caused and exacerbated by environmental factors and genetic predispositions¹¹. Unattended or improperly addressed, these disorders may have long-term health outcomes such as chronic anemia, infertility, metabolic imbalances, and psychological, such as anxiety and depression. The cumulative effects of these complications underline the need to identify them early, thoroughly evaluate them, and treat them properly. In turn, a deeper insight into the nature, origins, and consequences of menstrual disorders is essential to enhance the health outcomes of women and provide them with an improved quality of life¹².

2.1. Types of Menstrual Disorders

Menstrual disorders can be categorized into several types, each with distinct clinical features and underlying causes.

- 1 Metrorrhagia (Bleeding between periods)
- 2 Oligomenorrhea (Infrequent periods)
- 3 Amenorrhea (Absence of period)
- 4 Menorrhagia (Heavy periods)
- 5 Dysmenorrhea (Painful periods)
- 6 Hypomenorrhea (Light periods)
- 7 Polymenorrhea (Frequent bleeding)
- 8 Hypermenorrhea (Excessive menstrual bleeding)

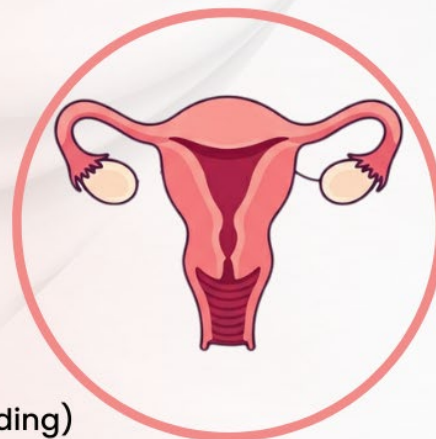


Figure 2: Types of Menstrual Disorders

- **Dysmenorrhea:**

Dysmenorrhea can be considered one of the most common menstrual disorders in women of reproductive age and is mainly manifested by severe pain during menstruation in the lower abdomen¹³. This state is mostly ascribed to the overproduction and secretion of prostaglandins especially prostaglandin F₂ in the endometrial lining. These biochemical mediators cause severe uterine contractions, which cause decreased uterine blood flow (ischemia) and increase the pain perception.

The symptoms may be of severity that greatly affects the day to day activities, performance at school and productivity at work thus lowering the quality of life. Prolonged or acute forms can also have an effect on psychological distress, which can be highlighted by the need to implement effective and timely management strategies¹⁴.

- **Menorrhagia:**

Menorrhagia or heavy menstrual bleeding is excessive or prolonged bleeding of the menstrual blood that normally takes more than seven days or is beyond the normal volume thresholds¹⁵. This disorder is often linked with the hormonal disbalances, especially the distortion of estrogen and progesterone that influence the process of endometrial growth and shedding. Menorrhagia is also caused by structural abnormalities of the uterus, including fibroids, polyps and adenomyosis; and systemic conditions including thyroid dysfunction and coagulation disorders.

Common symptoms in women with menorrhagia include chronic fatigue, weakness, dizziness, and shortness of breath, which is mostly caused by iron-deficiency anemia caused by chronic blood loss¹⁶. The condition can require constant replacement of sanitary products causing discomfort and interruption of normal activities. Unattended, menorrhagia may lead to severe anemia, diminished physical ability, and chronic health problems. That is why it is necessary to diagnose and intervene early to avoid negative consequences and enhance the well-being of patients.

- **Amenorrhea:**

The absence of menstrual cycles is known as amenorrhea, and there are two types of the condition: primary and secondary. In primary amenorrhea, the failure to start menstruation before the age of 15–16 years is typically caused by endocrine, genetic, or anatomical abnormalities. Secondary amenorrhea, on the other hand, is an amenorrhea that occurs in a woman who had regular menstrual cycles but over three or more months, her menstrual cycles stop.

Etiology of amenorrhea is multifactorial and could encompass hormonal imbalances (hypothalamic pituitary ovary axis, HPO axis), overexercise, psychological stress, nutritional deficiencies and eating disorders like anorexia nervosa. Also, common contributors are medical conditions like PCOS, thyroid disorders and hyperprolactinemia. Amenorrhea is not simply a reproductive problem but can be a sign of a more general malfunction of the system. Long-term menstrual deficiency may result in infertility, bone mineral depletion (osteoporosis), and predispose to metabolic disorders¹⁷. Therefore, it is essential to recognize the root cause to manage it and maintain health over the long term.

- **Premenstrual Syndrome (PMS):**

The condition is strongly associated with hormonal variations that occur in cycles with fluctuations of estrogens and progesterones that affect the activity of neurotransmitters such as serotonin, thus affecting mood and behavior.

The degree of PMS is extremely different in people with some having a mild discomfort and others having serious disability in their daily operations. In more severe forms, PMS may develop into premenstrual dysphoric disorder (PMDD), a disorder characterized by strong emotional imbalances, such as severe depression, anger, and anxiety, which may severely affect interpersonal relations and general mental well-being.

The fact that PMS is multifactorial highlights the need to employ an overall approach to management, including lifestyle changes, psychological support and, under certain conditions, pharmacological or other types of therapeutic interventions¹⁸.

2.2. Effects on Female Health

Menstrual disorders have a profound impact on multiple dimensions of women's health, extending beyond physical discomfort to psychological and socio-economic challenges.

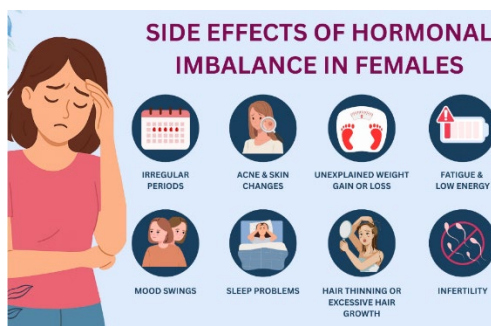


Figure 3: Menstrual disorders effect on females

- **Physical Effects:**

Menstrual complications have a significant effect on physical health, and they may be characterized by constant pain, fatigue and overall weakness. Dysmenorrhea, especially is linked to severe lower abdominal cramps, which can extend to the lower back and thighs and restrict mobility and physical activity to a considerable extent¹⁹. This discomfort may disrupt normal activities and diminish physical performance. In conditions like menorrhagia, excess of menstrual blood loss is a common cause of iron-deficiency anemia, a condition that causes a low level of hemoglobin in the body and thus leads to dizziness, shortness of breath, palpitations, and loss of stamina. Extended anemia may also diminish immune system and general energy. Moreover, frequent menstrual abnormalities can also lead to chronic problems with reproductive organs, highlighting the significance of early medical care and proper management²⁰.

- **Psychological Effects:**

Menstrual disorders are inextricably connected with psychological and emotional disorders, which is partly caused by hormonal changes and the discomfort that is chronic with such disorders. Menstruating women are known to have higher rates of anxiety, depression, irritability, and mood swings. PMS, specifically, is linked with neurotransmitter activity changes, such as serotonin disequilibrium which can substantially influence emotional functioning. These mental symptoms can deteriorate mental processes like focusing, memory, and decision making capacity, which in turn impacts the performance in school, and work. More seriously, in some cases, such conditions as premenstrual dysphoric disorder (PMDD) may result in the most significant emotional distress, which adversely affects interpersonal relationships and mental health in general. The combination of physical pain and psychological pressure further adds to the load of menstrual disorders.

- **Social Impact:**

Social consequences of menstrual disorders are significant, as such conditions may interfere with the everyday life and restrict the involvement in educational, professional, and social practices. Women who are in excruciating pain, excessive bleeding or have lost their energy, may be forced to skip school, college, or work, resulting in absenteeism and low productivity. This does not only impact individual performance but also has more general implications on societal and economic development²¹. Moreover, the cultural stigma and taboos that characterize menstruation in society tend to deter free conversation and thus lack of awareness and delayed healthcare seeking behavior. Menstruation remains a personal or a sensitive matter in most communities and this limits access to factual information and proper care. Consequently, this means that most women are still silent victims and therefore more awareness, education and conducive social environments are needed²².

- **Economic Burden:**

Menstrual disorders are also a huge economic burden to individuals, families and healthcare systems. The high cost of treatment of these conditions covers medical consultations, diagnostic tests, medications, and even surgery in some instances. Long-term treatment is another added economic burden in chronic or severe conditions. Along with the direct healthcare expenses,

indirect economic costs are a loss of productivity, absenteeism at work or in schools, and inefficiency at work. All these are leading to a significant economic impact on both an individual and societal level. In low-resource locales, the financial burden is further aggravated by the lack of access to affordable healthcare services, and managing it becomes even more difficult. Thus, it is not only medically necessary to address menstrual health, but also an economic and social concern²³.

3. METHODOLOGIES AND FINDINGS

Research on the effectiveness of herbal medicines for menstruation diseases is extensive, drawing from a variety of experimental, observational, and traditional knowledge-based investigations. Dysmenorrhea, menorrhagia, amenorrhea, and premenstrual syndrome (PMS) are menstruation problems that can be helped with plant-based interventions.

Pharmacological qualities of medicinal plants, including the identification of bioactive chemicals with anti-inflammatory, analgesic, and hormone-controlling effects, have been the primary foci of experimental research. On the other hand, observational studies have shown that herbal medicines work in practice, particularly in communities that heavily rely on mainstream care. The preservation of indigenous knowledge on the use of herbs for menstrual health has also been aided by ethnobotanical research²⁴.

Herbal treatment has shown promising outcomes in a number of studies for improving reproductive health, symptom severity, and menstrual cycle regularity. Although the results are encouraging, drawing a generalizable conclusion is difficult due to inconsistencies in the study's design, sample size, and preparation procedures.

3.1. Herbal Management Techniques

One definition of herbal management is the practice of utilizing medicinal plants and plant derivatives for the purpose of preventing and treating menstruation diseases. Ayurveda and other traditional medical systems rely heavily on the use of herbs to alleviate symptoms and restore physiological harmony in the body, which forms the basis of these modern treatments.

The medicinal plants' therapeutic properties are due, in large part, to the wide variety of bioactive chemicals they contain, including essential oils, tannins, alkaloids, and flavonoids. By acting on many biological processes, these compounds help regulate inflammation and hormone levels while also reducing spasms in the uterine muscles²⁵.

3.1.1. Common Medicinal Plants

Several medicinal plants have been widely studied and traditionally used for managing menstrual complications:

- **Ginger (*Zingiber officinale*):**

There has been a lot of study on ginger as a remedy for dysmenorrhea. The active ingredients, which include gingerols and shogaols, have potent analgesic and anti-inflammatory effects. These

compounds inhibit prostaglandin synthesis, thereby reducing uterine contractions and menstrual pain. An additional benefit of ginger for pain reduction is its ability to increase blood circulation.

- **Turmeric (*Curcuma longa*):**

Curcumin, the main ingredient in turmeric, is famous for its antioxidant and anti-inflammatory capabilities. It is essential for balancing hormone levels and alleviating premenstrual syndrome symptoms like inflammation and mood swings. Turmeric bolsters the immune system and improves reproductive health in general.

- **Aloe vera:**

The traditional use of aloe vera includes its ability to improve uterine health and regulate menstrual cycles. Its purported benefits include a more balanced hormonal system and increased blood flow to the pelvic area. Overall, it helps keep the reproductive system healthy because to its calming and purifying effects.

- **Ashoka (*Saraca asoca*):**

Popular among Ayurvedic practitioners, Ashoka is a plant with a focus on gynecological issues. Because it regulates endometrial activity and strengthens uterine muscles, it is very useful in controlling dysmenorrhea and menorrhagia. Compounds found in Ashoka tree bark help regulate excessive bleeding and decrease inflammation.

- **Fenugreek (*Trigonella foenum-graecum*):**

The phytoestrogens found in abundance in fenugreek seeds contribute to a more stable hormonal environment. They have several typical uses, including alleviating period cramps, decreasing weariness, and enhancing metabolic function generally. As an added bonus, fenugreek helps alleviate period pain by acting as an anti-inflammatory and antispasmodic.

3.1.2. Mechanisms of Action

The therapeutic effectiveness of herbal remedies in menstrual disorders can be attributed to multiple biological mechanisms:

- **Anti-inflammatory Effects:** Many medicinal plants inhibit the production of inflammatory mediators such as prostaglandins, thereby reducing pain and swelling associated with menstruation.
- **Hormonal Regulation:** Certain herbs contain phytoestrogens and other bioactive compounds that help maintain hormonal balance, ensuring regular menstrual cycles and reducing PMS symptoms.
- **Antispasmodic Activity:** Herbal compounds relax uterine muscles, reducing the intensity and frequency of contractions that cause menstrual cramps.
- **Improved Blood Circulation:** Enhanced blood flow to the pelvic region helps in reducing pain, promoting tissue oxygenation, and supporting overall reproductive health.

3.1.3. Advantages of Herbal Remedies

Herbal management offers several advantages over conventional pharmacological treatments:

- **Natural and Safe:** Herbal remedies are derived from natural sources and are generally associated with fewer adverse effects when used appropriately.
- **Cost-effective:** They are more cheap than synthetic medications, which means they can be used by more people, especially in areas with little resources.
- **Easily Accessible:** Many medicinal plants are readily available and can be cultivated locally, ensuring sustainability and convenience.
- **Minimal Side Effects:** Unlike synthetic medications, herbal treatments are less likely to cause severe side effects when used in appropriate dosages.

3.1.4. Limitations

Despite their potential benefits, herbal remedies also have certain limitations that need to be addressed:

- **Lack of Dosage Standardization:** There is no universally accepted dosage for most herbal formulations, leading to inconsistencies in therapeutic outcomes.
- **Limited Scientific Validation:** Many herbal treatments are supported by traditional knowledge but lack sufficient clinical trials and scientific evidence to confirm their efficacy and safety.
- **Variability in Preparation Methods:** Differences in extraction techniques, formulation processes, and plant quality can result in variations in effectiveness.

Table 2: Summary of Literature on Herbal Management of Menstrual Disorders

Author Name	Topic Covered	Research Study Title
Fisher et al. (2018) ²⁶	Examined practitioner experiences in using Western herbal medicine for managing menstrual disorders such as dysmenorrhea and irregular cycles. Highlighted individualized treatment approaches and perceived effectiveness of herbal therapies.	Period Pain and Other Common Menstrual Issues: A Review of Western Herbal Medicine Consultations and Their Effectiveness
Jiao et al. (2022) ²⁷	Compared herbal medicines used globally for menstrual disorders, emphasizing similarities in plant usage and pharmacological properties across different cultures.	Herbal Remedies for Period-Related Disorders in Women: A Global Comparison
Romm (2017) ²⁸	Provided comprehensive insights into botanical medicine for women's health, focusing on herbal	Botanical Medicine for Women's Health

	treatments for menstrual irregularities and hormonal balance.	
Gorai (2025)²⁹	Conducted a comparative analysis of herbal remedies for menstrual disorders, highlighting their effectiveness and the need for scientific validation and standardization.	A Comparative Analysis for Herbal Remedies for Menstrual Disorders in Women
Brown et al. (2024)³⁰	Reviewed nutritional practices for managing menstrual symptoms and emphasized the role of diet in reducing inflammation, fatigue, and mood disturbances.	A Systematic Review on Nutritional Practices for the Management of Symptoms Related to the Menstrual Cycle

4. DISCUSSION

The current review has highlighted that menstrual disorders are a major health issue in the world with a considerable number of women in various age groups and socio-economic statuses having the condition. The impact of dysmenorrhea, menorrhagia, amenorrhea, and PMS is not only a debilitating physical state but also has significant psychological and social impact. Although modern medicine has improved, most traditional therapies have side effects, are expensive and have limited effectiveness in the long run³⁰.

In this regard, herbal remedies stand as a potential solution because of their therapeutic properties, low cost and cultural acceptance especially in places where traditional systems of medicine like Ayurveda are well established. Synthesized findings in this review indicate that medicinal plants have great potential in the management of the menstrual complication using their anti-inflammatory, analgesic, and hormone-regulating effect. Nevertheless, these traditional practices need to be scientifically validated to be translated into evidence-based medicine³².

4.1. Interpretation and Analysis

The literature review shows that herbal remedies, especially those with plants like ginger (*Zingiber officinale*) and turmeric (*Curcuma longa*) have been found to be relatively effective at relieving menstrual symptoms. Ginger, by suppressing the production of prostaglands, can be instrumental in the inhibition of uterine contractions and the pain associated with them, and as such would be very effective in the treatment of dysmenorrhea³³. Likewise, turmeric, which contains an active ingredient, curcumin, helps balance hormones and decrease inflammation, thus, relieving PMS symptoms and irregular menstrual cycles.

Along with these herbs that are widely researched, the traditional preparations using herbs such as *Saraca asoca* and *Trigonella foenum-graecum* have demonstrated the possibility of controlling menstrual activity and excessive bleeding. These results emphasize the multi-targeted effect of herbal remedies that frequently have a response to the symptoms and the pathology of menstrual disorders³⁴.

Nevertheless, even with these encouraging results, a number of issues prevent the wider adoption of herbal remedies. The variability in the method of preparation such as differences in sources of plants, methods of extraction and formulation is one of the largest challenges.

4.2. Implications and Significance

The findings of this review have several important implications for healthcare systems, public health strategies, and sustainable medical practices:

- **Healthcare Integration:**

Herbal medicine has the potential to complement conventional treatments, offering a more holistic approach to managing menstrual disorders³⁵. Integrating herbal therapies with modern medical practices could enhance treatment outcomes, reduce side effects, and provide personalized care options.

- **Public Health Awareness:**

Increasing awareness about menstrual health and available treatment options is essential for reducing stigma and encouraging early intervention. Educational initiatives can empower women to make informed decisions regarding both conventional and herbal therapies.

- **Sustainable Healthcare:**

By decreasing reliance on synthetic pharmaceuticals and increasing utilization of replenishable natural resources, plant-based therapies contribute to sustainable healthcare practices. This method is in line with worldwide initiatives aimed at healthcare solutions that are both affordable and kind to the environment.

- **Cultural Relevance:**

Herbal remedies are deeply embedded in traditional practices and are widely accepted in many societies. Their cultural compatibility enhances patient compliance and acceptance, particularly in rural and resource-limited settings.

4.3. Gaps and Future Research Directions

Despite the promising role of herbal management in menstrual health, several gaps in current research need to be addressed to ensure its scientific credibility and broader applicability:

- **Need for Large-Scale Clinical Validation:**

Most existing studies are limited to small sample sizes or observational data. There is a critical need for well-designed, large-scale clinical trials to validate the efficacy and safety of herbal treatments.

- **Standardization of Herbal Formulations:**

Herbal remedies have a wide range of effects because there are no universally accepted guidelines for their manufacture, dosage, or quality. For consistency and dependability, it is crucial to establish standardized practices.

- **Long-Term Safety Studies:**

Herbal treatments are generally safe to use, but we need to learn more about their interactions with conventional drugs and how they can affect people over the long run.

- **Integration with Modern Pharmacology:**

Future research should focus on identifying active compounds in medicinal plants and understanding their mechanisms of action at the molecular level. This integration can bridge the gap between traditional knowledge and modern scientific approaches.

- **Development of Evidence-Based Guidelines:**

Creating clinical guidelines for the use of herbal remedies in menstrual disorders will facilitate their acceptance among healthcare professionals and improve patient outcomes.

5. CONCLUSION

Menstrual complications are a very serious but poorly-known common health problem in the world that can impact physical, psychological and social health of women³⁶. Menstrual disorders, including dysmenorrhea, menorrhagia, amenorrhea, and PMS not only disrupt the normal functioning of the body, but also have long-term health effects, such as anemia and hormonal imbalance, and lowering of the quality of life. Although conventional medical therapies exist, their shortcomings, including side effects, high price, and lack of accessibility, have led to increasing popularity of alternative therapies³⁷.

This review demonstrates the significant potential of herbal management as a safe, cost-effective and culturally acceptable approach in managing menstrual disorders. *Zingiber officinale*, *Curcuma longa*, *Saraca asoca*, and *Trigonella foenum-graecum* are medicinal plants showing great pharmacological effects, like anti-inflammatory effects, analgesic effects, and hormone-regulating effects. These properties allow herbal remedies to not only relieve the symptoms but to treat underlying physiological imbalances³⁸.

Nevertheless, scientific validation, unavailability of standardized preparations and variability of preparation procedures are some of the factors that limit the popular use of herbal therapies in mainstream medicine despite their promising potentials³⁹. It is thus necessary to combine conventional knowledge systems with contemporary scientific studies so as to guarantee the safety, effectiveness, and dependability of these treatments⁴⁰. Closing this gap will not only improve the healthcare of women, but help to build sustainable and holistic medical practices.

5.1. Summary of Main Insights and Conclusions

The key insights derived from this review can be summarized as follows:

- Menstrual disorders are highly prevalent and have multidimensional impacts on women's health, affecting physical comfort, emotional stability, and social participation.
- The wide variety of pharmacological effects found in herbs makes them useful for treating a wide range of symptoms, including pain, heavy bleeding, and hormonal imbalance.
- Standardized usage of herbal remedies is not supported by strong scientific evidence or large-scale clinical validation, despite their extensive traditional use.

- Developing safe, effective, and evidence-based therapeutic solutions requires the merging of traditional herbal therapy with current medical research.

5.2. Reiteration of the Importance of the Review

This review underscores the importance of addressing menstrual health as a critical component of overall women's healthcare:

- It brings attention to a frequently neglected yet essential area of health that has significant implications for quality of life and societal participation.
- It highlights the potential of natural and accessible treatment options, particularly in low-resource settings where conventional healthcare may be limited.
- It contributes to the growing body of knowledge supporting the use of herbal medicine in reproductive health.
- It provides a foundation for future research, policy development, and healthcare innovations aimed at improving menstrual health management.

5.3. Recommendations

In order to move the area of menstrual health and herbal therapy forward, this review suggests the following measures:

- **Conduct Clinical Trials:** Rigorous, large-scale clinical studies are needed to validate the efficacy and safety of herbal remedies and establish their role in evidence-based medicine.
- **Develop Standardized Formulations:** Standardization of herbal products in terms of dosage, preparation, and quality control is essential to ensure consistent therapeutic outcomes.
- **Increase Awareness and Education:** Public health initiatives should focus on improving awareness about menstrual health, reducing stigma, and promoting informed decision-making regarding treatment options.
- **Encourage Interdisciplinary Research:** Collaboration between researchers in pharmacology, gynecology, botany, and traditional medicine is crucial for advancing knowledge and innovation in this field.
- **Promote Policy Support:** Legislation and research funding should be provided by governments and healthcare organizations to facilitate the incorporation of proven herbal remedies into healthcare systems.

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