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SPECIAL REVIEW ARTICLE

PHYTOCONSTITUENTS

Menstrual Health Benefits of Indigenous Plants and their Phytoconstituents: A Review

Satyabrat Sarma^{1*}, Ameena Ahmed¹

¹ Faculty of Pharmaceutical Science, Assam down town University, Panikhaiti, Guwahati, Assam-781026, India

*Corresponding author: Satyabrat Sarma Email: satyabrat.sarma@adtu.in

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Abstract

A wide variety of plants and their phytoconstituents have been used as popular medicines to treat countless clinical cases involving women's health and precarious medical care, which poses health risks to users due to insufficient pharmacological and toxicological tests. Additionally, abortion-inducing herbs are commonly used in countries where the practice is prohibited, increasing the risk. By cataloguing plants used for women's health, ethnopharmacological research might increase the spectrum of drugs available to women, especially in public health systems, while raising concerns about over-the-counter product safety. This review will uncover plants and their phytoconstituents in scientific manner which are utilized by indigenous peoples to treat menstrual cycle disorders and other women's health issues.

Keywords: Menstrual health, Disease, Phytoconstituents, Herbal medicines

1 Introduction

Menstrual health pertains to the overall physical and psychological well-being of women, commencing from the onset of menstruation. The process of menstruation induces significant hormonal fluctuations in the female body, resulting in various physiological alterations that ultimately impact the individual's mental well-being (1). Due to contemporary lifestyle, menstruating persons are often diagnosed with numerous illnesses and disorders. Global population health, SDGs, gender equality, and human rights depend on menstrual health. Over the past decade, menstruation awareness has increased, but more multi-sectorial investment is needed to serve all menstruators. The term "menstrual health" has evolved throughout time(2). This emphasizes that menstrual health issues and their effects on mental health and social isolation are not restricted to menstruation. The majority of people with a monthly period are women and girls, however this policy emphasizes menstrual health for everybody. It also recognizes that many women with a monthly cycle may not have regular bleeding, which can create worry and anguish and harm their mental health(3). The 1.8 billion reproductive-age girls, women and non-binary persons experience menstruation naturally. However, billions of menstruators worldwide

are denied respectful and healthy menstrual cycle management. This guidance is for Wash, Education, Health, and Gender experts or focal persons in country offices working with other organizations to establish menstrual health and hygiene (MHH) activities(4). Menstrual abnormalities are common in teens and can cause worry. Approximately 75 females worldwide suffer menstruation difficulties. PMS, dysmenorrhea, and menstrual irregularities are the most prevalent abnormalities. Academic, athletic, and self-confidence issues might result from these disorders(5). Menstrual hygiene management is difficult due to privacy, cultural taboos, menstrual health information, humiliation, and anxiety. suitable menstrual health knowledge, woman-friendly facilities, suitable disposal alternatives, and simple access to menstruation products can overcome this(6). In early days when menstrual health was not even in the picture people used to ignore their discomforts and continued to use unhygienic methods to prevent the menstrual flow. These caused severe damage to the menstrual health and even sometimes the damages were fatal. But in modern days the methods used are more hygienic and convenient. Sanitary pads, tampons, menstrual cups and other menstrual supplies have been a great help in maintaining a good menstrual hygiene(7). The regularity of a woman's period is an indicator of her general health. Periods of menstruation

are quite predictable. Premenstrual syndrome (PMS), dysmenorrhea, and amenorrhea are all examples of menstrual illnesses. According to ethnographic and epidemiological studies, women with menstrual disorders experience a wide range of symptoms depending on where they live. This suggests that dietary and lifestyle choices, social norms and behavior, genetic predispositions, and environmental factors all play a role in how this biological event is expressed. Hormone therapy is the gold standard in modern medicine for the treatment of menstrual cycle disorders. A growing number of women, aware of the risks associated with conventional medical treatment, are opting instead for traditional or national herbal therapy(8).

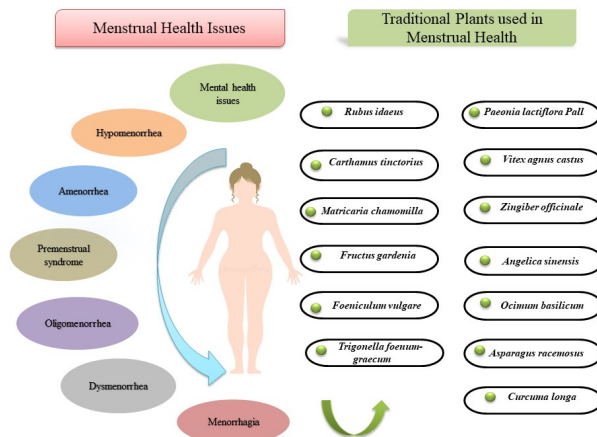


Figure 1: Menstrual Health Issues and Plants Used in the Treatment of Mensural Health

Menstrual disorders include:

1. Dysmenorrhea- Dysmenorrhea refers to painful cramps during menstruation. Dysmenorrhea is characterised by intense cramping during menstruation. The pain starts in the lower abdomen and spreads to the lower back and thighs. Dysmenorrhea is classified as either primary or secondary.
2. Primary dysmenorrhea- Menstruation causes cramping discomfort. The pains are caused by uterine contractions and are frequently more painful after heavy bleeding.
3. Secondary dysmenorrhea- Menstrual discomfort usually happens when combined with another medical or physical issue, such as endometriosis or uterine fibroids.

Premenstrual syndrome refers to physical and psychological symptoms occurring prior to menstruation. Heavy bleeding, also known as menorrhagia, can occur during regular menstrual cycles or during periods that are either excessively short or protracted. Bleeding irregularly is known as metrorrhagia, and it is most common between predicted menstrual cycles. The lack of menstruation is referred to as amenorrhea. Infrequent menstrual cycles are referred to as oligomenorrhea. Light periods are described as hypomenorrhea(9; 10).

2 Treatment Options for Menstrual Disorders

Non-steroidal anti-inflammatory medicines (NSAIDs), such as ibuprofen (Advil, Motrin), naproxen (Aleve), and acetaminophen (Tylenol) might help relieve cramping pain. Menstrual cycles can be regulated and excessive bleeding can be decreased with the aid of oral contraceptives (birth control tablets). Modern continuous-dosing oral contraceptives lessen or completely stop menstrual cycles. Injections of progesterone (Depo-Provera) are an additional choice. Heavy bleeding is frequently treated first with the progesterone intrauterine device (IUD), LNG-IUS (Mirena). An operation is endometrial ablation. If medical treatment doesn't work, a hysterectomy can be an option(11).

3 Review Methodology and Findings

A main database containing important early published texts written in electronic papers was established on ethnopharmacology and modern pharmacology. Literature review was performed on the years from 2013 to 2023 in Web of Science, PubMed, Scientific Information Database, Google Scholar. This narrative review was conducted to address different applications of herbs from the views of Ayurvedic traditional medicine and modern medicine. The plants were studied on the basis of the data collected from different databases.

4 Benefits of Plants on Mensural Health

There are verities of plants found in various regions of India which are ethnomedicinally found to have impacts on mensural health some of which are discussed below.

4.1 *Rubus idaeus*

Rubus idaeus commonly known as Raspberry belongs to the family Rosaceae. The leaf of raspberry is mainly considered to be as helpful in menstruation and pregnancy. Raspberry leaves contains high number of shielding antioxidants. In order to tone and relax the pelvic and uterine muscles, raspberry leaves include antioxidizing polyphenols such as tannins, bioflavonoids, and alkaloids. These substances assist tone and tighten the pelvic muscles. This aids in the control of cramps during menstruation and water retention, as well as the late stages of pregnancy, morning sickness, and assists during childbirth as well(12). It mainly contains the phytochemicals such as Neochlorogenic acid Figure2, Myricetin Figure3, Quercetin 3-O-glucoside Figure4, and Gallic acid Figure5, which have significant antioxidant and anti-inflammatory properties that helps in the management of menstrual cramps. It also contains a high quantity of catechin that helps in the management of PCOS and related diseases. Currently raspberry leaf tea is a popular product to boost menstrual health. Other products like Ayurvedic formulations are also there in the market(13; 14; 15).

4.2 *Carthamus tinctorius*

Southern Asia and middle East are said to be the origin of *Carthamus tinctorius*. Since then, it has been grown in Egypt, India, China and Persia. Flavonoids, alkaloids, lignans, steroids, polysaccharides, quinochalcone C-glycosides, and quinone-containing chalcones are the primary chemical components identified from *Carthamus tinctorius*(16). *Carthamus tinctorius* functions in promoting blood circulation, removing blood stasis and stopping pain, anti-inflammatory and anti-cancer treatment, gynaecological diseases, including menstrual problems. Safflower mainly eases out the blood circulation and helps in regulating the normal menstrual cycle. Compared to negative control, sunflower extract at 0.7 g/mL ($P < 0.001$) and 0.5 g/mL ($P < 0.01$) effectively inhibited PAF-induced platelet aggregation. The anti-platelet aggregation of 0.7 g/mL safflower extract was much greater than the positive control ($P < 0.001$). Two quinochalcone agents in florets of safflower have been reported having anti-inflammatory effects(17). Safflower oil is also being applied in the sanitary napkins and other essential products for menstrual health.

4.3 *Paeonia lactiflora* Pall

It is a perennial herbaceous blooming plant in the Ranunculaceae family that is often known as white peony. It is endemic to East Asia and grows along rivers and woodland edges. Paeoniflorin Figure10, albiflorin, oxypaeoniflorin, benzoylpaeoniflorin, oxybenzoyl-paeoniflorin, paeoniflorigenone, lactiflorin, galloylpaeoniflorin, paeonin, paeonolide, and paeonol are all found in white peony. *Paeonia lactiflora* affects TNF and Toll-like receptor-dominant genes VCAM1, AKT1, ICAM1, CASP3, IL6, PTGS2, RELA, JUN, CASP8, MAPK8, IKBKB, SELE, LBP, STAT1, and CD14. For example, PTGS2 controls inflammation and antioxidant response. IBD progression is connected to IL6 gene expression. Proto-oncogene JUN regulates inflammation. Several inflammatory stimuli activate JUN. JUN activation regulates inflammatory factor expression and responsiveness. *Paeonia lactiflora* improves immunity and lowers inflammation by altering these genes (18; 19). The herb's monoterpene, flavonoids, phenols, and tannins impact low progesterone, lower increased androgens (testosterone), and control oestrogen and prolactin, which eventually assists in reducing period cramps, promoting excellent sleep, and even increasing conception in women(20).

4.4 *Vitex agnus Castus*

Vitex agnus- Castus also known as Chaste Berry belongs to the family Verbenaceae, for the past 2000 years, it has been utilized in herbal therapy. *Vitex agnus-castus* is a sizable deciduous shrub that is indigenous to Central Asia, Mediterranean Europe and the southern United States(21). The main constituents of *Vitex agnus- castus* fruits are labdane type diterpenoids, including vitexilactone, rotundifuran Figure11, viteagnusin Figure12 and vitex lactam A; flavonoids like luteolin Figure13, apigenin, Figure7 3-methylkaempferol, penduletin, isoorientin, casticin, chrysopenetin and chrysosplenol; Iridoids including cymaroside, aucubin and agnuside; fatty oils like

capric acid, palmitic acid and stearic acid(19). Lonicerus wrote in 1982 that the fruit of chaste tree might increase menstrual flow. In ancient herbals, it is recommended for the relief of uterine pain. It also reduces the breast pain related to menstruation cycle but it is still to be proven scientifically. In an experimental study, *Vitex agnus- castus* L extract was tested in 50 PMS patients receiving one 20 mg native extract pill daily for three menstrual cycles which lowered PMS symptoms at the end of the study(22). Significant MMDQ score reduction (42.5%) was the major effect parameter ($p < 0.001$).

4.5 *Matricaria chamomilla* L.

Matricaria Chamomilla L. commonly known as Chamomile (Babuna in India) is a daisy-like plant from the family Asteraceae. Chamomile tea is a popular herbal drink because it contains antispasmodic properties that relieve menstrual cramps and controls dopamine and serotonin, which reduce depressive symptoms(23). A clinical randomized double-blind investigation was done on 90 Iranian dorm students who completed PMS intensity forms daily for two months. After PMS diagnosis, two groups received Chamomile capsule 100 mg or Mefenamic acid 250 mg three times a day. After two cycles, Chamomile Extract users showed significantly greater emotional symptom reduction (30.1 ± 26.6 and $33.4 \pm 25.3\%$) compared to MA users (11.6 ± 25.7 and $10.7 \pm 26.8\%$) ($p < 0.001$). Physical symptom intensity decreased similarly across groups ($p > 0.05$)(24). Chamomile extract contains the major metabolites herniarin and umbelliferon, methoxy derivatives of coumarins, chlorogenic acid and caffeic acid derivatives of phenylpropanoids, apigenin, apigenin-7-O-glucoside, luteolin, quercetin, and rutin derivatives of flavonols, and naringenin derivative of flavanone. Chamomile essential oil contains n-hexadecanoic acid, linoleic acid, and other esters (25). A study had been conducted at Mashhad University of Medical Sciences consisted of a double-blind clinical trial that included a sample size of 60 individuals suffering with mastalgia. A notable decrease was observed in both the chamomile and placebo groups following a two-month period when compared to the initial measurements. Additionally, there was a significant drop across all groups ($p < .001$). Chamomile has been found to be a safe and effective therapeutic option for the management of mild to moderate mastalgia in women(26).

4.6 *Zingiber officinale*

Ginger is *Zingiber officinale*, family Zingiberaceae which is used in severe menstrual bleeding, a study was conducted on 102 HMB patients who were randomly allocated to three groups. All patients received 200 mg ibuprofen, 300 mg frankincense, 300 mg ginger, or a placebo capsule 200 mg. Frankincense and ginger reduced monthly bleeding length (1.77 ± 2.47 days, $P=0.003$) and ginger (1.8 ± 1.79 days, $P=0.001$). Menstrual bleeding decreased in all groups ($P<0.05$), with no difference among study groups ($P>0.05$). Ginger groups exhibited better improvement (29.2 ± 3.7 ; $P<0.001$) than placebo groups (15.07 ± 3.52 ; $P<0.001$), with significant differences ($P=0.02$). A group of girls were

tested for heavy menstrual bleeding (HMB) with ginger and placebo capsules. After three intervention cycles, ginger-receiving group menstrual blood loss decreased considerably. Ginger significantly decreased blood loss compared to placebo capsules ($p < 0.001$). The adverse effects could be negotiated in this case(27). Ginger rhizomes include steam volatile oil, proteins, fixed fatty oil, resins, pungent chemicals, cellulose, pentosans, starch, and Fe, Mg, and Ca. Ginger's key components include gingerols, paradols, shogaols, zingiberene, zingiberol, zingerones, 3-dihydroshogaols, dihydroparadols, gingerenone, acetylated gingerol derivatives, gingerdiols, phellandrene, diaryl heptanoids, and ferulic acid which are used to treat nausea, osteoarthritis, chronic indigestion, weight loss, and menstruation discomfort due to its strong therapeutic value. Gingerol is also anti-inflammatory and antioxidant(28).

4.7 *Gardenia jasminoides* Ellis

The tropical and subtropical plant *Gardenia jasminoides* Ellis, often known as Gardenia Pod, is native to Africa, southern Asia, Australasia, and Oceania. Fructus gardenia from *Gardenia jasminoides* includes pharmacologically active compounds such as Geniposide Figure15, Genipin, Crocin, and Crocetin. Among all phytoconstituents, geniposide is the most thoroughly studied phytochemical. It contains anti-inflammatory qualities that assist to reduce cramps, headaches, acne, and mild mood fluctuations(29). *Gardenia* Pod has been reported to relieve menstrual cramps, migraines, acne, and mood fluctuations associated with menstruation. Using phenotypic methods to show that rutin, chlorogenic acid (CGA), and geniposidic acid (GA) stimulated ovarian granulosa cells with oestrogen found that Rutin, CGA, and GA may increase FSHR-aromatase pathway in ovarian granulosa cells(30). FSHR is involved in the estradiol stimulating activity of the three compounds isolated from Fructus gardenia, as antibodies against the receptor decreased the stimulation of oestrogen production by rat ovarian granulosa cells.

4.8 *Angelica sinensis*

Angelica sinensis, commonly known as Dong quai or female ginseng, has been used in traditional Chinese medicine for at least 20 centuries as a female reproductive tonic, menstrual regulator, and amenorrhea therapy. Dong quai is supposed to boost vitality in fatigued women. Dong quai was historically used to treat congealed blood, endometriosis, and dark, sluggish menstrual flow. It is usually used to blood-harmonising formulas(31). Medical advantages come from the plant's root. *Angelica sinensis* root extract was tested for climacteric symptoms in ovariectomized rats using vaginal epithelium cornification, uterotrophic tests, and blood LH levels. A standardized ethanol extract in ovariectomized rats increased uterine histoarchitecture, cornified the vaginal epithelium, and lowered serum LH, indicating estrogenic actions. Furthermore, 67% of intact female rats treated with the extract exhibited substantially changed vaginal smears. Ferulic acid Figure16 promotes blood circulation and manages menstruation, Z-ligustilide Figure17 relieves inflammation pain and improves blood circulation

around the uterine region, and butyl-idene-phthalide manages blood vessel contraction and menstrual cramps(32). It includes isoflavanone, an alternative treatment for hormonal problems such as breast and prostate cancer, cardiovascular disease, osteoporosis, and menopause(33).

4.9 *Foeniculum vulgare*

Foeniculum vulgare commonly known as Fennel belongs to the family Apiaceae. The seed part is basically used for its numerous benefits for health. The main compounds identified were trans-anethole, 2-pentanone, fenchone Figure18 and benzaldehyde-4-methoxy (34; 35). Trans-anethole shows neuromodulatory, anxiolytic, antioxidative, antifungal, anti-inflammatory, and immunomodulatory activities helping the menstrual cramps and regulating the menstrual bleeding(36). It can alleviate menstrual cramps by reducing the amount of prostaglandins in the blood. Primary dysmenorrhea is an especially frequent gynaecological condition in menstrual women, with a prevalence rate of up to 90%. Using the daily record of severity of issue questionnaire, 48 numbers of 16–18-year-old girls were selected where four equal groups were assigned: the first received fennel, the second aerobic exercise, the third fennel with exercise, and the fourth control group. After 8 weeks of intervention, PMS symptoms significantly decreased in experimental groups fennel, exercise, and fennel with exercise compared to the control group ($P < 0.05$).

4.10 *Ocimum basilicum*

Ocimum basilicum, also known as basil, is a plant in the Lamiaceae family. It is a widespread plant in tropical climates ranging from Central America to Southern Asia. The basil leaf is mostly utilized for medical purposes. Basil contains phytochemicals such as flavonoid, alkaloid, phenol, and essential oil. Tulsi's primary chemical ingredients include oleanolic acid, ursolic acid Figure19, rosmarinic acid Figure6, eugenol Figure9, carvacrol, linalool, and -caryophyllene(37). Consuming basil may help to alleviate the pain associated with menstrual cramps. It is a natural antioxidant that is both anti-inflammatory and antimicrobial. Tulsi's ability to modulate cortisol hormones makes it an excellent period regulator.

4.11 *Trigonella foenum -Graecum*

Trigonella foenum-Graecum, commonly referred to as fenugreek, is an annual medicinal plant in the Fabaceae family. Seed of the fenugreek is mostly used for medicinal purpose. Deals with dysmenorrhea and symptoms associated with it, antihistaminic effect may reduce premenstrual symptoms. It is native to the areas that surround the eastern Mediterranean and is mostly farmed in India, Egypt, the United States, Africa, Europe, Morocco, and England. Seeds of Fenugreek are aromatic, bitter, carminative, galactagogue, antibacterial and can be consumed raw or cooked. The chemical composition of fenugreek seeds includes a significant carbohydrate fraction (mucilaginous fibre, galactomannan); 20-30pyridine-type alkaloids; flavonoids; free amino acids (4-hydroxy isoleucine, arginine, lysine, histi-

dine); saponins; glycosides; vitamins, minerals, 28fenugreek is mostly used for medicinal purpose, cosmeceuticals and food. Deals with dysmenorrhea and symptoms associated with it. Fenugreek seed powder which has an antihistaminic action, has been used in doses of 1800-2700 mg three times for the first 3 days of menstruation, then 900mg three times daily for the remaining two monthly cycles. Fenugreek is taken orally to treat digestive issues such as anorexia, upset stomach, constipation, stomach inflammation. It is also used to treat diabetes arthritis, poor thyroid function, and obesity(38).

4.12 *Asparagus racemosus*

It is commonly known as Shatavari. It belongs to the Asparagus family which is native to Africa, northern Australia and southern Asia. Mainly roots are used to prepare concoction full of medicinal values. Phytoconstituents :- Steroidal saponins (mainly Shatavarins I, II, III and IV), Polyphenols, Flavonoids such as Glycosides of quercetin Figure 20, rutin and hyperoside are present in flower and fruits; alkaloids (racemosol); Carbohydrates like Polysaccharides, mucilage; Furan compound like Racemofuran and vitamins such as A, B1, B2, C, E, Mg, P, Ca, Fe, and folic acid makes it popular among all the medicinal plants(39). The saponins contains in *Asparagus racemosus* inhibit oxytocic activity on the uterine musculature, maintaining spontaneous uterine motility, effectiveness in treating dysmenorrhea which is characterized by painful menstruation; women at various phases of life can get benefit from Shatavari(7).

4.13 *Curcuma longa*

The common name for this culinary herb is turmeric. It belongs to the family Zingiberaceae. Rhizome is the part that is basically used for medicinal purposes. Turmeric is native to Southeast Asia and India; it is cultivated in India, China, Japan, Sri Lanka, East and West Africa, Nepal, Thailand, Malaysia. Main phytochemicals found in roots of turmeric are sugars, proteins, resins, traces of volatile oils and a compound called curcuminoids which includes curcumin (diferuloylmethane), demethoxycurcumin, and bisdemethoxycurcumin(40). Turmeric has antispasmodic effect on the body, which expands uterus and induces menstruation. It increases blood flow in the uterus. Regular intake of turmeric helps in managing period irregularities. Chemical structures of different plant base phytoconstituents that helps in improvement of mensural health are as follows.

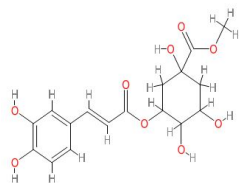


Figure 2: Neochlorogenic Acid

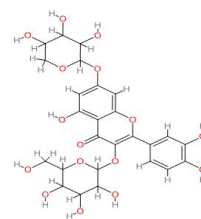


Figure 3: Myricetin

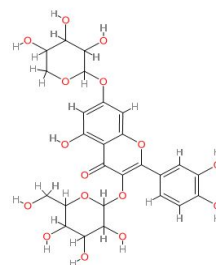


Figure 4: Quercetin 3-O-Glucoside

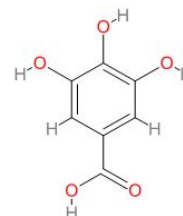


Figure 5: Gallic Acid

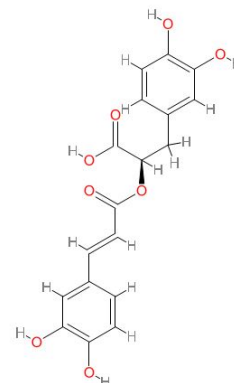


Figure 6: Rosmarinic Acid

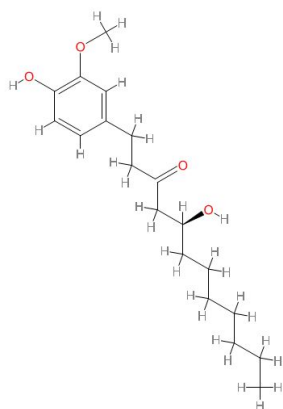


Figure 7: Gingerol

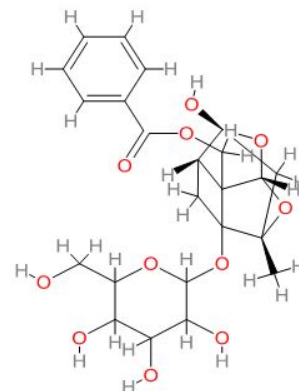


Figure 10: Paeoniflorin

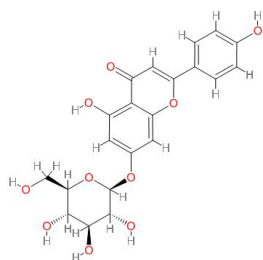


Figure 8: Apigenin

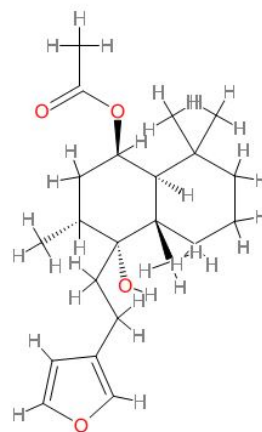


Figure 11: Rotundifuran

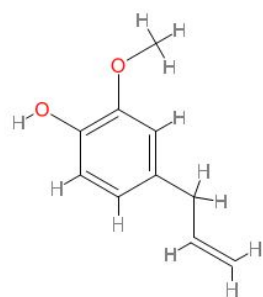


Figure 9: Eugenol

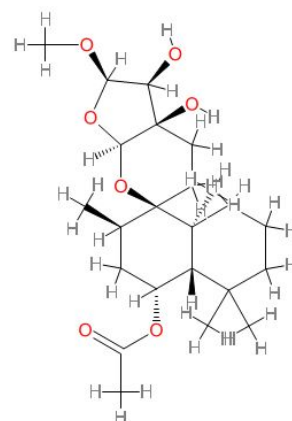


Figure 12: Viteagnusin

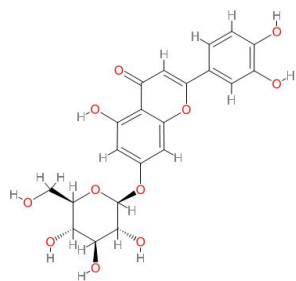


Figure 13: Luteolin

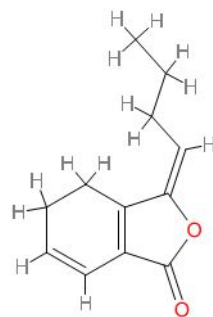


Figure 17: Z-Ligustilide

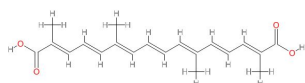


Figure 14: Crocetin

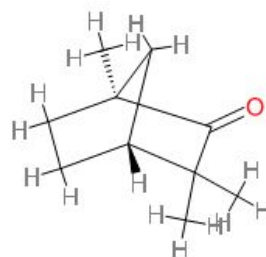


Figure 18: Fenchone

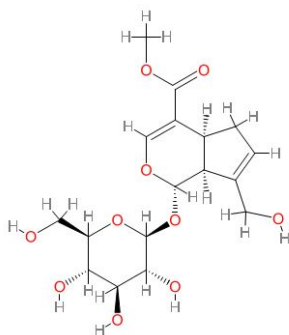


Figure 15: Geniposide

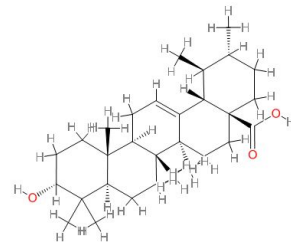


Figure 19: Ursolic Acid

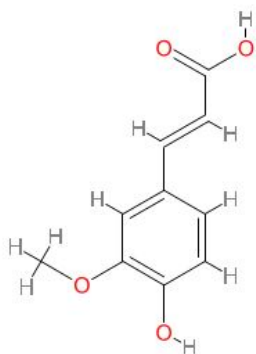


Figure 16: Ferulic Acid

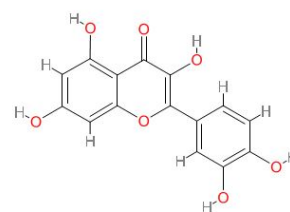


Figure 20: Quercetin

Table 1: Compilation of Botanical Species Beneficial for Menstrual Health Management

Sl No	Name of the herb	Parts used	Main phytoconstituents	Uses in menstrual health	References
1	<i>Rubus idaeus</i>	Leaves	Neochlorogenic acid, Myricetin, Quercetin 3-O-glucoside, Gallic acid, catechin	Leaves contain antioxidantizing polyphenols mainly help in menstruation and pregnancy.	(12; 13; 14)
2	<i>Carthamus tinctorius</i>	Seeds	flavonoids, alkaloids, lignans, steroids, polysaccharides, quinochalcone C-glycosides and quinone-containing chalcones	Safflower seeds oil having anti-inflammatory activity promote blood circulation and helps in regulating the normal menstrual cycle.	(16; 17)
3	<i>Paeonia lactiflora</i> Pall	Roots	paeoniflorin, albi-florin, oxypaeoniflorin, benzoylpaeoniflorin, oxybenzoyl-paeoniflorin, paeoniflorigenone, lactiflorin, galloyl-paeoniflorin, paeonin, paeonolide, and paeonol	monoterpene, flavonoids, phenols and tannins present in the roots part helps in calming the menstrual cramps, boosts fertility in woman.	(18; 20)
4	<i>Vitex agnus castus</i>	Dried fruits and Flowers	vitexilactone, rotundifuran, viteagnusin, vitex lactam A, luteolin, apigenin, 3-methylkaempferol, penduletin, isoorientin, casticin, chrysosplenetin, chrysosplenol, cymaroside, aucubin and agnuside, caprinic acid, palmitic, stearic acid	Terpenoidal lactone and flavonoids help to balance of estrogen and progesterone during menstrual cycle.	(21; 19; 22)
5	<i>Matricaria Chamomilla</i> L.	Flower head	n-Hexadecanoic acid, linoleic acid.	Anti-spasmodic properties of Chamomile tea can relieve the painful menstrual cramps.	(23)
6	<i>Zingiber officinale</i>	Rhizomes	gingerols, paradols, shogaols, zingiberene, zingiberol, zingerones, 3-dihydroshogaols, dihydroparadols, gingerenone, acetylated gingerol derivatives, gingerdiols, phellandrene, diaryl heptanoids ferolic acid derivatives	Anti-inflammatory and antioxidant activity of bioactive compound gingerol helps in menstrual pain relief.	(26; 27)
7	Fructus gardenia	Fruits	Geniposide, Genipin, crocin, crocetin,	Anti-inflammatory properties helps in reducing cramping, and moderate mood swings.	(29; 30)
8	<i>Angelica sinensis</i>	Roots	Ferulic acid, butylenephthalide, Z-ligustilide and various polysaccharides.	It has spasmolytic action on uterus that deal in the curement of dysmenorrhea.	(33; 32)
9	<i>Foeniculum vulgare</i>	Seeds	trans-anethole, 2-pentanone, fenchone and benzaldehyde-4-methoxy.	Anti-inflammatory, Antispasmodic effect reduce severity of menstruation cramp.	[(34; 41; 36)]
10	<i>Ocimum basilicum</i>	Leaves	Methyl cinnamate, linalool, beta-elemene and camphor.	Antioxidant and anti-inflammatory helps in reducing menstruation cramping	[(37)]
11	<i>Trigonella foenum-Graecum</i>	Seeds	Carbohydrates, Protein, Lipids, Alkaloids, Flavonoids, fibers, Saponins, vitamin, minerals and nitrogenous compound.	Antihistaminic action of fenugreek seed powder deals with dysmenorrhia and symptoms associated with it.	[(42; 38)]
12	<i>Asparagus racemosus</i>	Roots	Steroidal saponins, racemosol, Isoflavones, mucilage, vitamins.	Oxytocic activity of saponins in shatavari helps in treating menstruation pain.	[(39; 7)]
13	<i>Curcuma longa</i>	Rhizome	Curcuminoids and essential.	Antispasmodic effect of turmeric increases blood flow in the uterus and induces menstruation.	[(40)]

5 Discussion

Current research and practice underpin this menstrual health idea. Due to the complexity of menstrual health, additional definition components and other terminology may aid conversation, advocacy, action, and research within each area. This study examined 13 indigenous plants, including *Carthamus tinctorius*, *Paeonia lactiflora* Pall, *Vitex agnus castus*, *Matricaria Chamomilla* L., *Zingiber officinale*, *Fructus gardenia*, *Angelica sinensis*, *Foeniculum vulgare*, *Ocimum basilicum*, *Trigonella foenum-Graecum*, *Asparagus racemosus*, *Curcuma longa*, and their phytoconstituents and pharmacological activities which effects on menstrual health(43). *Rubus idaeus* contains the antioxidizing polyphenols which reduce the oxidative stress and get impacts on mensural health. *Carthamus tinctorius* contains quinochalcons which having the anti-inflammatory activity that improve blood circulation and menstrual regulation. Paeoniflorin derivatives of *Paeonia lactiflora* Pall helps in calming the menstrual cramps, boosts fertility in woman. Vitexilactone is the major phytoconstituents of *Vitex agnus castus* with helps in the balancing of estrogen and progesterone level during menstruation(44). Most ethnic groups' traditional treatments have helped women's health and gynecology. However, foundational research on these drugs is lacking, drug consumption information is not widely popularized, drug advantages are not completely utilized, and current drug research continues to lack guidance. Thus, promoting and contributing to women's health is crucial. Menstrual cramps, infertility, uncomfortable pregnancy, and other conditions are treated with the botanicals. This study encompasses a comprehensive analysis of various plants and their respective effects. Additionally, it highlights the presence of several unknown plant-based medications, which provide significant potential for extensive research within this domain.

6 Conclusion

People who menstruate worry about menstrual health. Early on, improper menstruation management caused various deadly illnesses. With current technology and medicine, these disorders may be diagnosed and treated. Menstruation management has also improved. Menstruators still have lifestyle diseases related to menstruation health owing to modern lifestyles. Modern allopathic treatments may temporarily relieve symptoms, but most have serious negative effects on menstruation and general health. Herbal medicine has long been used to manage menstruation health. Modern Ayurvedic formulations incorporate botanicals for health advantages. No negative effects from herbs. They are readily available nearby. Extraction might be expensive and time-consuming, but it is worth it.

Conflict of Interest

The authors declare no conflict of interest in this reported communication.

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