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Research Article

Menstrual health: An Herbal Tea Approach

**Harshal Shewale, Vaishnavi Muthal, Sakshi Tarle, Nikita Nagare, Dr. Shivam Lale*,
Dr. M. R. N. Shaikh**

MET's Institute of D. Pharmacy, Adgaon Nashik India.

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ABSTRACT

Menstrual cramps, or dysmenorrhea, affect a significant proportion of women and can negatively impact daily activities and overall quality of life. This study explores the efficacy of herbal tea formulations as a natural remedy for alleviating menstrual pain. The tea blend, composed of anti-inflammatory and antispasmodic herbs such as chamomile (*Matricaria chamomildxla*), ginger (*Zingiber officinale*), fennel (*Foeniculum vulgare*), and peppermint (*Mentha piperita*), aims to reduce uterine muscle contractions and soothe discomfort. Preliminary findings suggest that regular consumption of the herbal tea during menstruation may significantly reduce pain intensity and duration without the side effects associated with conventional pain relievers. This paper highlights the potential of herbal teas as a complementary approach to menstrual health management.

INTRODUCTION

Menstruation, commonly known as a period, involves regular vaginal bleeding as part of a woman's monthly reproductive cycle. Many women experience discomfort during this time, often referred to as painful periods or dysmenorrhea. The most common symptom is cramping pain in the lower abdomen, which may also be accompanied by back pain, nausea, headaches, or diarrhoea. This type of pain is different from premenstrual syndrome (PMS),

which includes symptoms like bloating, mood changes, fatigue, and weight gain, typically occurring a week or two before menstruation begins. There are two main types of dysmenorrhea—primary and secondary—each with distinct causes. Primary dysmenorrhea is the most frequent form and isn't linked to any underlying medical issue. It is usually caused by an excess of prostaglandins, natural chemicals produced by the uterus. These substances cause the uterine muscles to contract, leading to cramps. The pain usually begins a day or two before

***Corresponding Author:** Dr. Shivam Lale

Address: MET's Institute of D. Pharmacy, Adgaon Nashik India.

Email ✉: shivaml_iotp@bkc.met.edu

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menstruation and may last for a few days, though it can continue longer for some women.

Symptoms

- Menstrual cramppts usually refers to a dull
- Throbbing
- Cramping pain in the lower abdomen
- Just above the pelvic bone.

Other Symptoms May Include:

- Pain in the lower back and thighs
- Nausea and Vomiting
- Sweating, Faintness and Dizziness
- Constipation
- Bloating and Headaches.

Herbal Tea

Herbal tea, commonly referred to as a tisane, is a drink made by steeping different parts of medicinal plants—such as leaves, flowers, seeds, or roots—in hot water. Unlike conventional teas that come from the *Camellia sinensis* plant, herbal teas are naturally free from caffeine and are often consumed for their health benefits. Traditionally, they have played a significant role in various healing systems like Ayurveda, Traditional Chinese Medicine, and other cultural remedies, where they have been used to alleviate issues such as indigestion, colds, stress, and inflammation. Varieties like chamomile, peppermint, ginger, and hibiscus are especially popular due to their unique therapeutic effects, which stem from active compounds like polyphenols, flavonoids, and essential oils. With rising interest in natural health products, herbal teas are increasingly studied for their role in promoting wellness and preventing disease. Herbal teas are valued for their health-promoting properties, which can vary depending on the herbs used. Here are some common health benefits:

- 1) **Antioxidant Properties:** Most herbal teas contain antioxidants like flavonoids, which combat free radicals and reduce oxidative stress.
- 2) **Digestive Support:** Ingredients such as ginger, peppermint, and fennel can promote healthy digestion and soothe stomach discomfort.
- 3) **Immune System Boost:** Herbs like echinacea and elderberry are believed to strengthen the immune system and help ward off colds.
- 4) **Relaxation and Stress Relief:** Teas like chamomile and lavender promote relaxation and help manage stress and anxiety.
- 5) **Anti-Inflammatory Effects:** Herbs such as turmeric and ginger contain compounds that reduce inflammation and joint pain

Remedies for menstrual cramps and Today's scenario:

➤ Heat therapy:

Warm baths, heating pads, or hot water bottles.

1. Relaxes uterine muscles: Reduces contractions and cramping.
2. Increases blood flow: Warmth dilates blood vessels, easing pain.
3. Blocks pain signals: Heat stimulates nerve endings, reducing pain transmission.

➤ Keeping Body Hydrated

1. Reduces bloating and water retention
2. Eases cramps and muscle tension
3. Helps regulate hormones
4. Supports digestive health
5. Boosts energy levels

➤ Exercise:



1. Yoga, swimming, or brisk walking
2. Exercise regularly: Reduces cramp severity

➤ **Herbal Teas:**

Cramp bark, dandelion, or red raspberry leaf

1. Chamomile tea: Soothes cramps and promotes relaxation
2. Ginger: Tea, capsules, or ginger ale

➤ **Over-the-Counter (OTC) Medications:**

1. Ibuprofen (Advil, Motrin)
2. Naproxen (Aleve)

➤ **Massage therapy:**

Targets lower abdomen and back

1. Abdominal massage: Targets the lower abdomen to ease cramps.
2. Lower back massage: Relaxes muscles and improves blood flow.
3. Circular motions on lower abdomen
4. Kneading and rolling on lower back
5. Decreases stress and anxiety
6. Promotes relaxation and sleep

Plant Profile

1) **Guava Leaf**

Synonym - Psidium guajava

Family - Myrtaceae family



Figure 1: Guava Leaf

Use- Antioxidant properties, Anti-inflammatory properties, Antibacterial properties, Antiviral properties, May help manage

For menstrual health: Guava leaves may help relieve menstrual cramps and pain; Guava leaves have anti-inflammatory properties that may help ease period cramps.

Synergistic use: Guava leaves have antibacterial and antioxidant properties that can help to treat skin conditions like acne. Guava leaves have antibacterial properties, which promote gut health. Guava leaves are good for those who have diabetes or have the risk of it. It will also stabilize glucose levels and prevent big spikes in blood sugar after meals. Guava leaves are rich in vitamin A, essential for good eyesight.

2) **Pomegranate Peel**

Synonym- wine apples or wine-apples

Family- Punicaceae family



Figure 2: Pomegranate Peel

Use of pomegranate peel in the herbal tea:

For menstrual health: Pomegranate peel and pomegranate flower have been used to treat menstrual disorders, including heavy or prolonged bleeding, also known as menorrhagia; Pomegranate peel and flower contain astringent agents like tannins and triterpenoids, as well as antioxidant and anti-inflammatory compounds. These compounds may suppress the synthesis of prostaglandins, which can help with bleeding.

Synergistic use: Pomegranate peel is a good source of polyphenols, dietary fiber, and vitamins. It also contains other bioactive compounds that have antioxidant, anticancer, and anti-inflammatory properties.

3) Cinnamon

Synonym – cinnamon bark , kalmi – dalchini , ceylon cinnamon .

Family – Lauraceae .

Biological Source – it is an dried inner bark of the shoots of coppiced trees of *Cinnamomum zeylanicum* (*Cinnamomum verum*).

Use-It is used as an antioxidant, anti-inflammatory, antidiabetic, antimicrobial, anticancer, lipid-lowering and cardiovascular disease lowering compound.



Figure.3: Cinnamon Powder

Use in menstrual health: Pain alleviation: Menstrual discomfort can be lessened in intensity and duration with cinnamon. Women who took cinnamon in one research reported much less pain than those who received a placebo.

Bleeding: Menstrual hemorrhage may be lessened with cinnamon. Vomiting and feeling queasy: During menstruation, cinnamon may lessen the intensity of nausea and frequency of vomiting.

Menstrual cycle: The menstrual cycle may be impacted by insulin levels, which cinnamon may help control. Cinnamon may help control the menstrual cycle in people with polycystic ovarian syndrome (PCOS).

4) Fennel Powder (*Foeniculum Vulgare*)

Synonym – Fructus foeniculi, Fennel fruit, Fenkel, Florence fennel, Sweet fennel, Large fennel.

Family – Umbelliferae



Figure 4 : Fennel Powder.

Use-It provide antioxidant, anti-inflammatory and antibacterial effect. It is used for various digestive problems including heartburn, intestinal gas, bloating, loss of appetite and colic in infants.

Use in menstrual health: Help with period pain and other menstrual issues because of their anti-inflammatory properties and ability to regulate hormones. Fennel seeds can help reduce gas and bloating, which can be common during menstruation. 10 Synergistic use: Fennel has other potential health benefits, including Fighting infection, regulating blood sugar, aiding digestion, and Helping breast milk production

Synergistic use: Cinnamon has been shown to have properties against neurological conditions including Parkinson's and Alzheimer's disease in addition to being an antioxidant, antiinflammatory, ant diabetic, antibacterial, anticancer, lipid-lowering, and cardiovascular diseaselowering substance

5) Liquorice Powder

Synonyms- Glycyrrhiza, Liquorice root, Mulethi

Family-Leguminosae (Fabaceae)

Biological source-It consists of dried roots and stolons, whole or cut, peeled or unpeeled of Glycyrrhiza glabra Linn and other species of Glycyrrhiza.



Figure 5: Liquorice Powder

Uses- Digestive issues,Respiratory problems,Skin conditions, Menstrual relief,Anti-inflammatory

Use in menstrual health: Lowers prostaglandin production to ease period pain. Mainly used as taste masking agent in herbal tea

Synergistic use: Liquorice root is promoted as a dietary supplement for conditions such as digestive problems, menopausal symptoms, cough, and bacterial and viral infections. Licorice gargles or lozenges have been used to try to prevent or reduce the sore throat that sometimes occurs after surgery

6) Ashwagandha

Synonyms- Withania root, Ashvagandha, Askandha, Asgandh (Hindi)

Family- Solanaceae.

Biological source- Withania root, Ashvagandha, Askandha, Asgandh (Hindi), It consists of dried roots and stem bases of Withania somni It consisten Phytalis somnifera Linn., P. flexuosa Linn, arborescence DC).

Use- Adaptogen, antitumour, hypotensive, respiratory stimulant, antispasmodic, antibacterial, untiarthritic, hepatoprotective etc



Figure. 6 : Ashwagandha Powder

In menstrual health : Regulate menstrual cycle. Ashwagandha has a beneficial effect on key factors that influence your menstrual cycle, such as stress, inflammation, and hormonal .

It improves the hormonal imbalance which strengthening the functioning of the adrenal glands. The antimicrobial and antibacterial properties of Ashwagandha may help deal with vaginal infections. Many experts recommend using this herb for yeast infections

7) **Ginger**

Synonyms-Adarak, Zingiber.

Family- Zingiberaceae.

Biological source-Ginger belongs to oleo gum resin category and is obtained from the rhizomes of Zingiber officinale Roscoe.

Uses-Digestive aid, Anti-inflammatory,Cold and flu relief,Menstrual relief, Anti-cancer properties.



Figure 7: Ginger Powder

In menstrual health: Ginger can be as effective as some pain medications like ibuprofen or mefenamic acid. Some studies suggest that ginger is more effective than a placebo for relieving menstrual pain. Ginger water can help reduce menstrual blood loss and prevent anemia

8) **Lemon Grass**

Synonyms- Lemongrass,Citronella Grass

Family- Poaceae family

Chemical Constituents- Citral (70-80%),Geraniol ,Linalool ,Limonene ,Beta-caryophyllene



Figure 8: Lemon Grass

Uses: Tea, soups, curries, and marinades,Digestive issues, fever, and anxiety,Essential oil for relaxation and stress relief, Citronella oil, Landscape plant.

9) **Honey Powder: [sweetener]**



Figure 9: Honey Powder

Use of honey powder in herbal tea: Use in menstrual health: Honey can help with menstrual cramps and pain which have anti-inflammatory properties. Honey can help regulate weight, which can help with irregular periods. Honey can help keep blood sugar stable, which can satisfy sweet cravings before your period. Synergistic use: It contains anti-oxidants which slow the aging process. It helps to open up and unclog the pores. It protects your skin from harmful UV rays of sun and increases the skin's ability to rejuvenate. It brightens the dull and damaged skin.

Material and Method

Aim :- To prepare and evaluate herbal tea using pomegranate peel [*Punica granatum*] and guava leaf [*Psidium guajava*]

Requirement:-

- 1]Guava leaf
- 2]Pomegranate peel
- 3]Cinnamon
- 4]Fennel
- 5]Licorice
- 6]Ashwagandha
- 7]Honey powder
- 8]Ginger
- 9]Lemon grass

Instruments: -

- 1]Hot air oven
- 2]Mortar and pestle

Methods:

Processing of herbal material

Pomegranate peel powder:

- Start by washing the pomegranate peels thoroughly to get rid of any dirt or chemicals.
- Pat them dry with a clean towel to remove surface moisture.
- Slice the peels into small, thin pieces — this helps them dry more quickly and evenly.
- Preheat your hot air oven to 50–60°C (122–140°F).
- Spread the pieces in a single layer on a baking tray, making sure they don't overlap.
- Dry them in the oven for about 6 to 8 hours. Thicker peels may need more time.
- Every couple of hours, stir or flip the peels to help them dry evenly.
- You'll know they're ready when they feel crisp and snap easily.
- Let them cool completely to room temperature before grinding.
- Grind into a fine powder using a kitchen grinder or blender.
- Store the powder in an airtight container and keep it in a cool, dry place.

Guava Leaf Powder

- Pick fresh guava leaves and rinse them well with distilled water to remove any dust or impurities.
- Blot them gently with a lint-free tissue or let them air-dry for 30 to 60 minutes to remove surface moisture.
- Preheat your hot air oven to 40–50°C (104–122°F).
- Lay the leaves flat in a single layer on a tray.
- Place the tray in the oven and dry the leaves for 4 to 6 hours. Check now and then — the leaves should feel dry, brittle, and crisp when they're done.

- After drying, let them cool down in a dry, airtight space (like a desiccator) to prevent moisture from creeping back in.
- Grind the dry leaves into a fine powder using a blender or lab grinder.
- Sift the powder if needed for a more uniform texture.
- Transfer it immediately to a moisture-proof, airtight container and store it somewhere cool and dry.

Preparation Steps:



Preparation of herbal tea

- 1) After removing and thoroughly cleaning the pomegranate skins, they are dried in a hot air oven set at 55 degrees Celsius for roughly 6 to 8 hours.
- 2) The guava leaves are dried for two to three hours at 55 degrees Celsius in a hot air oven.
- 3) Finely powdered ginger, ashwagandha, liquorice, fennel, and cinnamon
- 4) A grinder is used to dry and powder the lemon grass
- 5) Using a mortar and pestle or grinder, the dried pomegranate peels and leaves are ground into a fine powder.



- 6) The aforementioned powders are weighed and placed in a jar based on the formula.
- 7) Pour in the necessary amount of water and bring to a boil for around five minutes.
- 8) Depending on your preferred sweetness, add honey powder.

Table 1.: Role of Ingredients

Sr. No.	Ingredients	Bioactive constituents	Role
1]	Pomegranate peel powder	Anthocyanins quercetin gallic acid catechin	pomegranate peel and mefenamic acid on the treatment of Menorrhagia, the results indicated a significant reduction in women bleeding in each group during three menstrual cycles
2]	Guava leaf powder	Quercetin apigenin gallic acid catechin hyperin	The anti-inflammatory effects of guava leaves provide a natural way to ease period cramps.
3]	Cinnamon	Cinnamaldehyde cinnamade, cinnamic acid	The significant effect of cinnamon on reduction of pain, menstrual bleeding, nausea and vomiting with primary dysmenorrhea without side effects
4]	Fennel	Anethole fenchone dipentene	Can reduce menstrual pains by lowering the level of prostaglandins in blood circulation
5]	Ashwagandha	Alkaloids {isoetierine maferine and saponin}	By reducing cortisol levels, ashwagandha can help prevent elevated stress. It may also be useful for soothing cramps, reducing fatigue
6]	Liquorice	resins, sugar, starch tannis	It may be used to treat conditions including eczema, bronchitis, and menstrual cramps
7]	Ginger	Gingerols shogaols paradols, terpenes	Ginger is useful in minimizing menstrual cramps
8]	Lemon grass	citral, isoneral, isogeranial, geraniol, geranyl acetate, citronellal	Lemon grass soothing the stomach upset that often arrives with your period



Figure 10. Pomegranate Peel Powder



Figure 11. Guava Leaf Powder

Formulation Table

Table 2. Composition Of Formulation

Sr No	Ingredients	Formulation(gm)									
		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
1	Guava Leaf	0.4	0.5	0.2.	0.4	0.3	0.3	0.1	0.6	0.5	0.4
2	Pomegranate peel	0.4	0.5	0.2.	0.3	0.4	0.2	0.1	0.4	0.3	0.3
3	Cinnamon	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.2	0.2	0.3
4	Fennel	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.2	0.2	0.3
5	Liquorice	0.3	0.1	0.4	0.3	0.2	0.3	0.4	0.3	0.3	0.2
6	Ashwagandha	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.1	0.4	0.3
7	Ginger	0.2	0.2	0.4	0.3	0.4	0.3	0.3	0.2	0.1	0.2
8	Honey powder	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS

Evaluation Parameters

- 1) Aroma
- 2) Flavour
- 3) Mouthfeel
- 4) Aftertaste
- 5) Appearance
- 6) Dysmenorrhoea treating agent
- 7) Compressibility

A Scoring scale is used to rate performance of each batch

❖ 0 to 3 Scale

➤ 0 = Poor

➤ 1 = Moderate

➤ 2 = Excellent

Evaluation Table:

Scoring scale

Table 3. Evaluation Of Formulation

Sr No	Test	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
1	Aroma	2	1	1	1	1	1	1	1	1	1
2	Flavour	1	0	1	1	1	1	1	0	1	1
3	Appearance	2	1	1	1	2	2	2	1	1	1
4	Mouthfeel	1	0	2	1	1	1	1	0	1	1
5	Aftertaste	1	0	2	1	1	1	1	0	1	1
6	Compressibility	2	1	1	1	1	1	1	1	1	1
7	Dysmenorrhoea treating agent	2	2	1	2	1	1	1	1	1	2
	Total	9	4	8	7	7	7	7	3	6	7

RESULT

We found that by giving herbal tea prepared from Guava Leaf, Pomegranate peel, Cinnamon, Fennel, Liquorice, Ashwagandha, Honey powder,

Ginger, Lemon grass shows positive effect on Women menstrual Health.

DISCUSSION



This study looked at how effective herbal tea made from pomegranate peel and guava leaves is in helping with menstrual health. Out of all the different tea recipes we tested, F1 and F3 worked the best. They gave good pain relief, had a nice taste and texture, and were liked by the people who tried them. This shows that these two formulas could be useful natural remedies for period pain. Pomegranate peel is rich in natural compounds like antioxidants and anti-inflammatory agents. These can help reduce swelling and pain, and may calm the muscles in the uterus that cause cramps. Guava leaves also have helpful compounds, especially quercetin, which can reduce muscle spasms and relieve pain. The success of the F1 and F3 batches might be because of the right balance of ingredients. When pomegranate peel and guava leaves are combined in the right amounts, they seem to work well together to reduce pain. Even though the results look promising, more research is needed to be sure how these teas work, how much should be taken, and how safe they are in the long run. In short, the F1 and F3 herbal teas made with pomegranate peel and guava leaves could be a good natural choice for women looking for relief from period cramps without using medicine.

CONCLUSION

Here a new combination of herbal tea has been prepared by using the plant material like Pomegranate peel, Guava leaf, ashwagandha, fennel, Ginger, Cinnamon, Liquorice and the evaluation was performed. To prepare an ideal herbal tea we have selected the above herbs which have various beneficial uses in Menstrual Diseases. Synthetic drugs might have side effects on prolonged or long-term use. However, herbal drugs are safe and provide therapeutic effects with less or no side effects as compared to synthetic drugs we conclude that the F1 and F3 batch has maximum effect. Formulation was also appreciated in terms of Taste by majority of

people. So, we can conclude that F1, F3 Batches serve as best herbal tea. This tea can be served as ideal tea for Menstrual irregularities. So, we can conclude that this tea can help in maintaining healthy lifestyle in every Women with a cup of tea.

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