



**INTERNATIONAL JOURNAL OF
PHARMACEUTICAL SCIENCES**
[ISSN: 0975-4725; CODEN(USA): IJPS00]
Journal Homepage: <https://www.ijpsjournal.com>



Research Article

Preparation And Evaluation Of Polyherbal Topical Gel For Dysmenorrhea

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ARTICLE INFO

Published: 17 July. 2026

Keywords:

Dysmenorrhea, Primary
Dysmenorrhea, Menstrual
Pain, Polyherbal Gel,
Topical Drug Delivery

DOI:

10.5281/zenodo.21415517

ABSTRACT

Dysmenorrhea is one of the most common gynecological disorders affecting women reproductive age and is characterized by painful menstrual cramps accompanied by symptoms such as nausea, fatigue, headache and lower abdominal pain. It has a significant impact on physical, social and emotional well-being of women and often interferes with their daily activities and quality of life. Conventional treatment including non-steroidal anti-inflammatory drugs and hormonal therapies are effective in reducing pain but associated with various adverse effects and limitations during long term use. The present study was undertaken to formulate and evaluate a polyherbal gel containing flaxseed gel, lavender oil, and peppermint oil for management of Dysmenorrhea. Flaxseed is rich in ligands, flavonoids, phenolic compounds and omega 3 fatty acids which possess anti-inflammatory properties and help in reducing prostaglandin synthesis responsible for menstrual pain. Lavender oil exhibit analgesic, sedative, and antispasmodic activities whereas peppermint oil contain menthol which provide analgesic, anti-inflammatory and muscle relaxant effects. Flaxseed gel was prepared by heating flaxseeds with distilled water and filtering viscous extract through muslin cloth. The polyherbal gel was formulated by cold method using Carbopol 940 as gelling agent. other ingredients such as methyl paraben and propyl paraben were used as preservative, sodium metabisulphite as antioxidant, sodium formaldehyde as reducing agent, ethanol as a solvent. Lavender oil and peppermint oil were incorporated into formulation with continuous stirring to obtain a homogeneous and stable gel.

INTRODUCTION

Dysmenorrhea painful menstruation, is a common chronic condition of pain that affects a wide range

of young women capable of reducing their quality of life, decrease their ability to function at a 100 percent and ultimately causing reduction in productivity for the affected person for a period of

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Relevant conflicts of interest/financial disclosures: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.



time.[1] Based on studies, dysmenorrhea is the primary cause for frequently occurring short-term absence from school in adolescent girls and that the incidence of primary dysmenorrhea in this population varies from 16% to approximately 93%.2 [2] Pain referred by the International Association an unpleasant sensory and emotional experience related to actual or possible tissue damage Dysmenorrhea has a major effect on women's lives, restricting daily activities decreasing academic performance in adolescents and causing poor sleep quality. It also adversely impacts mood, resulting in anxiety and depression.[3]

It is classified into two types on the basis of pathology

1. Primary dysmenorrhea
2. Secondary dysmenorrhea

Primary dysmenorrhea

Primary dysmenorrhea (PD) is defined by pain and spasm. One of the most common signs in both young and adult females is lower abdominal pains which begin just before or at the start of menstrual without any pelvic pathology. It usually occurs in

adolescence, six to two years after a menarche. A unique and cyclic pattern describes dysmenorrheic pain, which typically rises on the first day of menstruation and lasts for up to 72 hours. While being relatively common and have an impact on day-to-day activities, it is frequently ignored or handled improperly as many young women prefer to suffer in silence without approaching a doctor.[4]

Etiology

While the exact reason of primary dysmenorrhea is not known, uterine prostaglandins, especially PGF₂ α , may be responsible for a large number of symptoms. Once menstruation starts, PGF₂ α gets released by the destroying endometrial cells during endometrial expulsion. Myometrial contractions, ischemia, and nerve ending sensitization are all produced by PGF₂ α . PGF₂ α levels in menstrual fluid are greater in women with more severe dysmenorrhea. first two days of menstruation, when symptoms are at their the most severe, are when these levels are at their highest. Further, a remarkable effectiveness of NSAIDs, that operate by decreasing prostaglandin synthetase, has been displayed in several of examinations.[5]



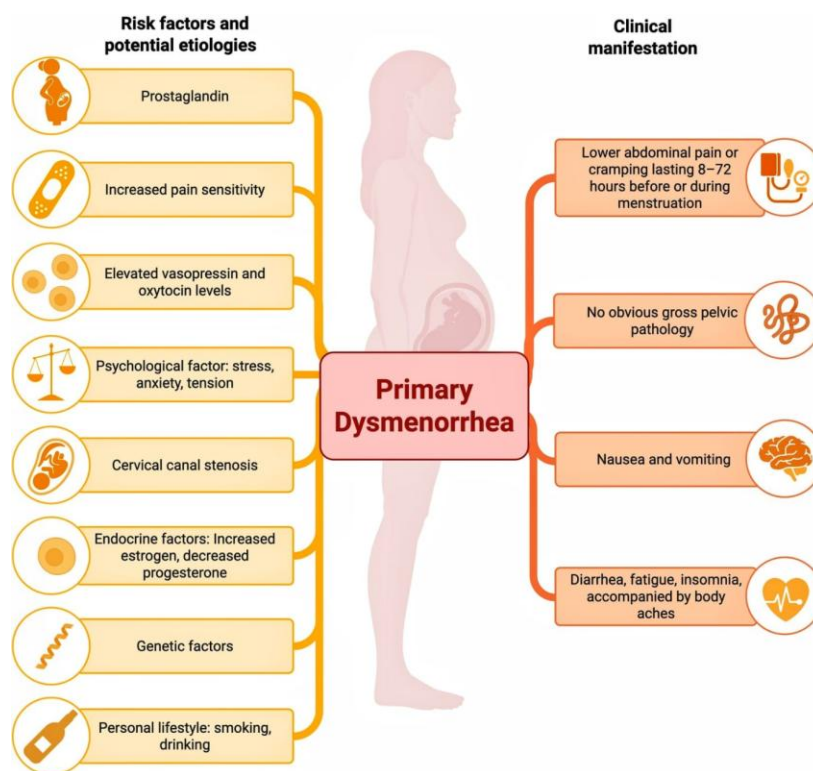


Fig no. 1 Primary dysmenorrhea

Secondary dysmenorrhea

Endometriosis, chronic pelvic inflammatory disease, adenomyosis, endometrial polyps, ovarian cysts, congenital defects, and intrauterine contraceptive device issues are among the medical disorders that lead to Secondary dysmenorrhea. It generally appears in older girls (>24 years) who have never had dysmenorrhea. It is related to

dispersed or chronic pain, that does not always occur during menstruation. These include a big uterus, pain during sex, and resistance to effective treatment. Endometriosis, that is known as the presence of endometrial tissue outside the uterus, is considered to be one of the most common causes of SD. So the fundamental pelvic pathology is utilized to describe the evaluation and course of treatment for SD. [6]

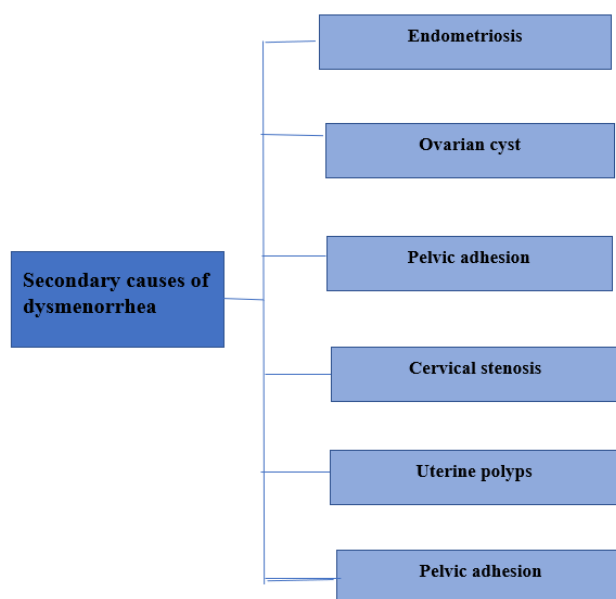


Fig no.2 Secondary Dysmenorrhea

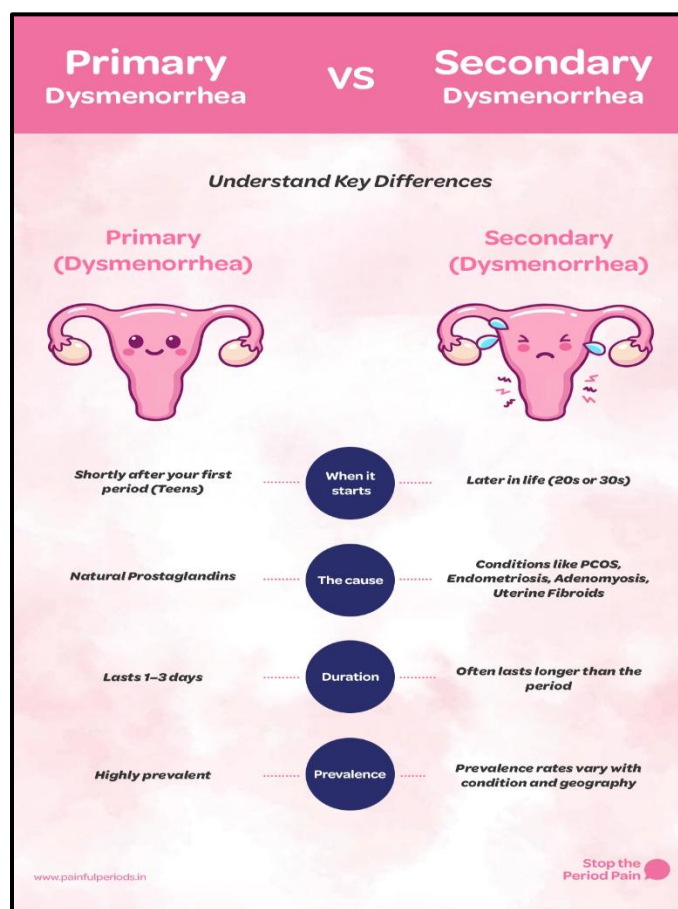


Fig no .3 difference between primary and secondary dysmenorrhea

Pathophysiology

Dysmenorrhea occurs by increased prostaglandin $F2\alpha$ ($PGF2\alpha$) and prostaglandin $E2$ ($PGE2$) release in the uterus during endometrial sloughing. Anaerobic metabolite synthesis and uterine ischemia are promoted by these prostaglandins' increased vasoconstriction and myometrial contractions. It causes pain fibres to become hypersensitive, which ultimately results in pelvic

pain. Arachidonic acid produces greater prostaglandins by means of the cyclooxygenase (COX) process. By activating the lysosomal enzyme phospholipase A₂, levels of progesterone regulate the synthesis of arachidonic acid. [16] Progesterone levels rise during the second half of the luteal phase, the last stage of the menstrual cycle that occurs after ovulation. If conception is unsuccessful, the corpus luteum shrinks and blood progesterone levels decrease.[17]

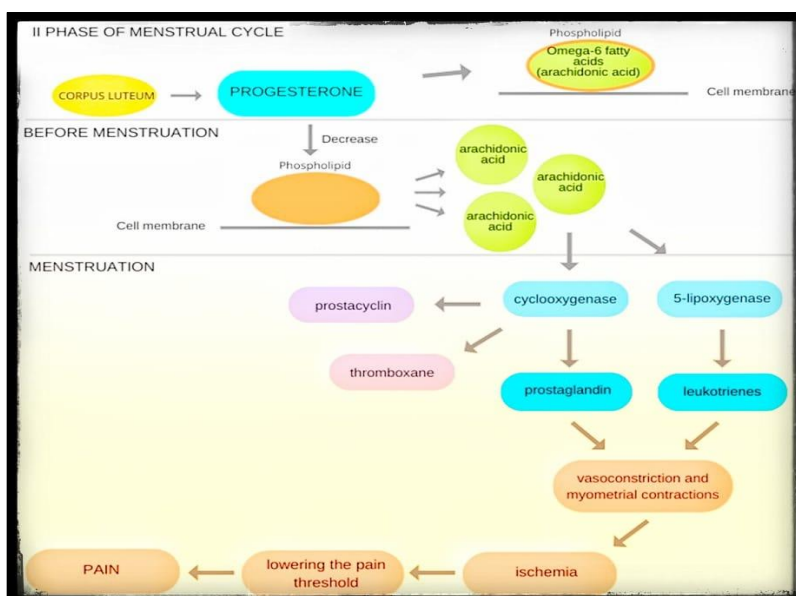


Fig no .4 Pathophysiology of dysmenorrhea

Herbal medicine

Medications such prostaglandin synthesis inhibitors, nonsteroidal anti-inflammatory drugs, and contraceptives tablets are used irregularly for treating dysmenorrhea due to fears regarding their adverse effects. In addition, Iranian culture has rejected some of them. Therefore, it seems that a new and simpler dysmenorrhea treatment is necessary. Some herbal medicines work effectively for dysmenorrhea and symptoms that goes along with it. Some plants have a potential to prevent the release of prostaglandins, while some have anti-spasmodic effects.[18]

Herbs are frequently utilized by women for the treatment of primary dysmenorrhea. In a systematic evaluation, Gholami analyzed 24 papers on effects of herbs on dysmenorrhea and found that Primary dysmenorrhea was reduced by chamomile tea , fennel (*Foeniculum vulgare*), cinnamon (*Cinnamomum*), dill (*Anethum graveolens*), saffron (*Colchicum*), celery (*Apium graveolens*), anise (*Pimpinella anisum*), balm (*Balsamum*), valerian (*Valeriana oicinalis*), mint extract (*Menthe longifolia*), and organic honey.[14] These medications are used to treat side effects of dysmenorrhea Five categories of

herbs are used to reduce menstrual pain. These groups include discomfort, spasm, and inflammation, all of which are factors in the cramps that occur during this time. It alleviates pain, inflammation, and tension. Herbs consisting of turmeric, ginger, cumin, and jatamansi are used

to reduce the discomfort of spasms. The active constituents of these plants, which provide them with their anti-inflammatory qualities, comprise terpenoids, essential oils, alkaloids, vitamin C, and amino acids.[19]

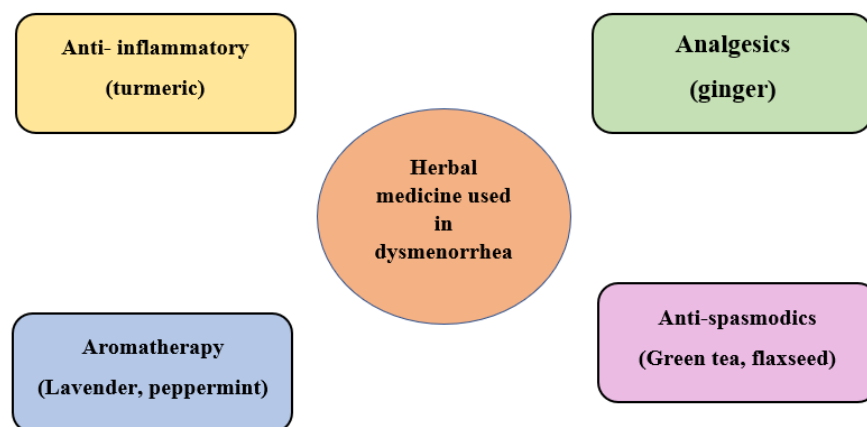


Fig no.5 herbal medicine in dysmenorrhea

Herbal plants used in treatment of dysmenorrhea

Sr no	Plant name	Biological source	Active constituent	Description
1	Fenugreek	Leguminaceae	Lysine, trigonelline	It has role in reduction of dysmenorrhea symptoms as well as abdominal cramps [20]
2	Peppermint	Labiatae	menthol	It has antispasmodic properties it also used to treat irritable bowel syndrome [21]
3	Ashwagandha	Solanaceae	Withafetin, withanolides	Reduces menstrual discomfort by reducing pain and swelling [22]
4	Tulsi	Laminaceae	Oleanolic acid	Help in reducing menstrual cramping, bloating and nausea [23]
5	Fennel	apiaceae	Essential oil, estragol	Fennel help in uterine contraction and prevent prostaglandin synthesis [24]
6	Turmeric	Zingiberaceae	Curcumin	It inhibits formulation of prostaglandin and cyclooxygenase which reduce inflammation [25]

Gel

Gels are as semi-rigid systems in which are three-dimensional network of interlacing particle or dissolved molecules of the dispersed phase restricts the dispersing medium's movement. Gels are composed of two interpenetrating systems where the colloidal particles, also known as the

gelat or or gallant, are uniformly distributed throughout a dispersion medium or solvent forming a three-dimensional matrix known as the gel. The gels are prepared by adding a gelling agent (gelator) which could be natural, synthetic or semi-synthetic polymer or low molecular weight small molecules, into an organic, inorganic or aqueous solvent or solvent systems. [26]

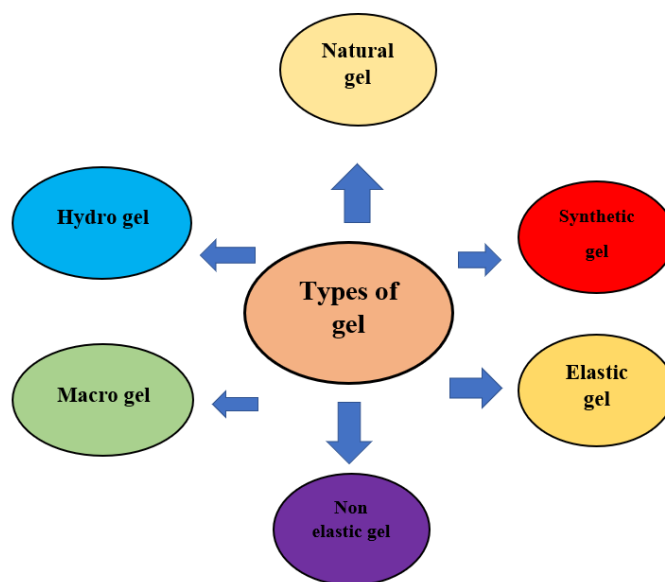


Fig no.6 Types of gel

Characteristics

Gel are easy to formulate as compared to other semisolid dosage form.

Gel is a non-greasy of formulation.

They are biodegradable and biocompatible.

They form protective layer on application site.

They are washable and nontoxic.

They provide excellent spreadability and cooling effect.

They can be used administer both polar and nonpolar drugs.[27]

Material and methods

Lavender oil

One of the medicinal herbs that is often studied is lavender also known as lavandula which is a species of lamiaceae family. The purple blue shrub flower has been utilized for treatment of variety of diseases. Lavender angustifolia, lavender latifolia, lavenderstoechas and lavender intermedia are most widely used species. [28]

It is cultivated for commercial use all over the world. It is cultivated in indian states of himachal Pradesh, uttar pradesh and kashmir valley. [29] Its essence is mad from distilling flowers from blossoming plants and its muscle relaxant and antispasmodic effects have been confirmed by



many studies. Its essence is made from distilling flowers from blossoming plants, and its muscle relaxant and antispasmodic effects have been confirmed by many studies. [30]



Fig no.7 lavender

Peppermint oil

Since ancient greek , roman , and egyptian times peppermint as ben considered one of the most widely used medicinal plants in traditional medicine . Nasal congestion, cough,sore throat , toothache,migrane

headaches,musculoskeletalpains,stess,anxiety,nau sea and vomiting bloating and abdominal pain ar just few of symptoms that it has been used to treat this herb has also been utilized to treat dysmenorrhea and induce menstruation. Research indicate antioxidant and anti-inflammatory, antibacterial, antispasmodic, analgesic and anxiolytic properties of peppermint. Menthol the main element in peppermint posseses analgesic

and antispasmodic effects which influence smooth muscle and nerve tissue of many bodies system [31] On smooth muscles, peppermint decreases spasmodic activity. The antagonistic effects against calcium and the menthol component are the cause of this feature.

Also, peppermint's menthol component affects Kappa Opioid receptors, which reduces pain sensations. It also contains its own cell membrane receptor type, which reduces cellular inflow while the cells are at rest and increases the cells' sensitivity for stimulation. Menthol reduces pain by lowering synaptic stimulation and transmission.[32]



Fig no.8 peppermint oil

Flax seed

Linum usitatissimum is botanical name for flaxseed. Flaxseed have high concentration of prostanoids particularly lignans and small quantity of phenolic acids, flavonoids and cyanogenic glycosides based on phytochemical. The anti-inflammatory properties of lignans, flavonoids, and alpha-linoleic acid proved that flaxseed could lessen the severity of breast pain. Menstrual pain

and migraines can be successfully treated with flaxseed oil. [33] As they include natural substances and have few adverse effects, herbal supplements are being increasingly utilized as alternative treatments. The effects of herbal remedies continue to be investigated and require further study. It prove the efficiency of flaxseed and chamomile in reducing pain on endometriosis patients pelvic pain, dyspareunia, and dysmenorrhea [34]



Fig no.9 flaxseed

Chemicals

Sr No	Name	Use	Amount
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1	Carbopol 940	Gelling agent	0.5mg
2	Methyl paraben	Preservative	0.10mg
3	Propyl paraben	Preservative	0.10mg
4	Sodium metabisulphite	Antioxidant	0.05mg
5	Sodium formaldehyde	Reducing agent	0.025mg
6	Ethanol		2.5 ml
7	Triethanolamine	Ph adjuster	2 drops
8	Distilled water		q.s

Procedure

Preparation of flax seed gel

Step

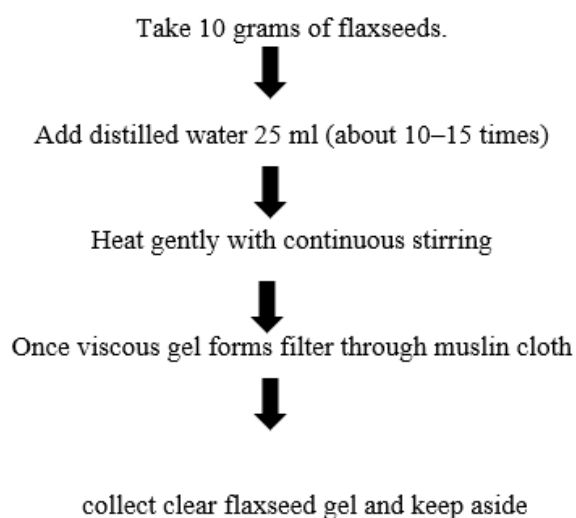


Fig no.10 Heating flaxseed gel



Fig no.11 Filtration of gel



Fig no.12 Flaxseed gel

Step 2

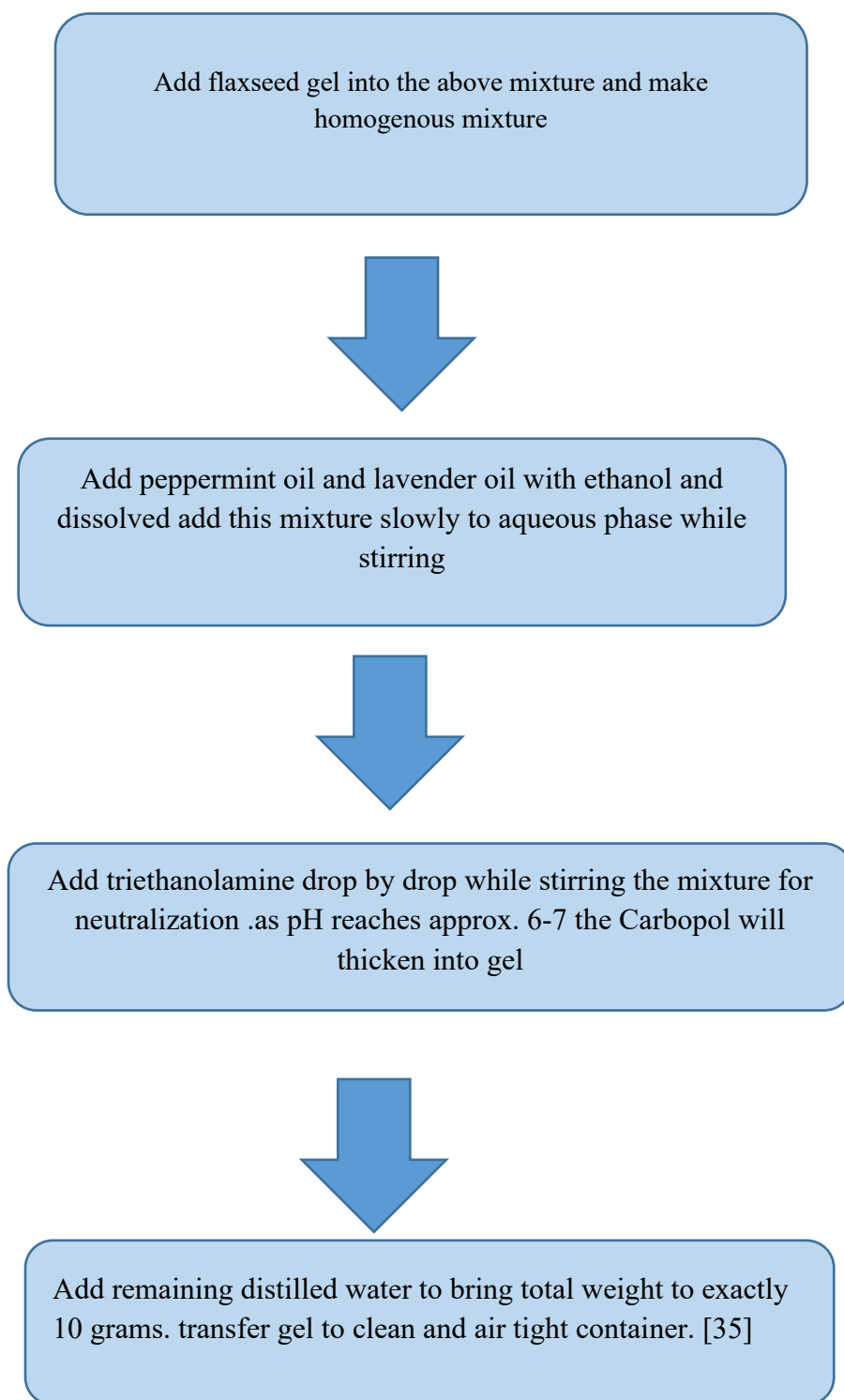
Preparation of polyherbal gel

Carbopol934 and purified water were taken in beaker and allowed to soak for 1hours for swelling



Add methylparaben, propylparaben, sodium metabisulphite and sodium formaldehyde into Carbopol dispersion stir until completely dissolved and mixture is clear





Evaluation test

Odour =lavender

1.Physical appearance

Appearance =smooth [36]

Colour =transparent





Fig no.13 Physical appearance

2.Spreadability test

T=20sec

M=Weight put on upper slide

$S = \frac{M \times L}{T}$

L=length of slide

=1.68

T=time taken for separation

Spreadability = 1.68g cm/sec [37]

M=4.50

The polyherbal gel exhibit good spreadability spreading easily and uniformly on skin surface indicating satisfactory application properties.

L=7.4

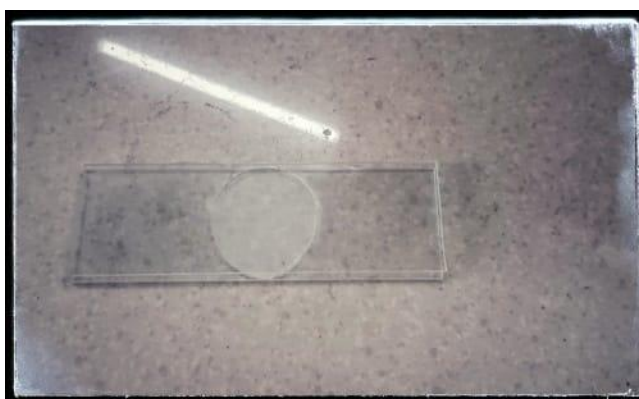


Fig no.14 Spreadability test

3.pH

The pH was determined by using pH strip. The strip was deep into the gel and the obtained colour was compared with the chart provided with strip. Normal pH of polyherbal gel is 5-6.[38] The observed Ph of

polyherbal gel is 6 i.e the polyherbal gel is neutral in nature.

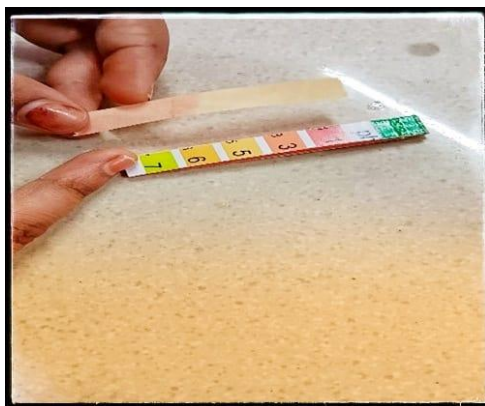


Fig no.15 pH

4.Washability test

The product was applied on hand and observed under running water.[39] The polyherbal gel was easily washable with water and was completely removed

from skin surface without leaving excessive residue. The polyherbal showed good washability indicating user convenience and easy application.



Fig no.16 Spreadability test

5.Viscosity

The viscosity of individual polyherbal gel was measured by Brookfield viscometer at 100rpm using spindle no 6[40]

Viscosity = dial reading * factor
 $13907.1 * 100 = 1390710 \text{ poise (p)}$



Fig no.17 Viscosity

RESULT

The formulated polyherbal gel containing flaxseed gel, lavender oil, and peppermint oil was successfully prepared and evaluated. The gel was transparent in color, smooth in appearance, and possessed lavender odour. The spreadability value found to be 1.68g.cm/sec, indicating easy application on skin. The pH of gel was 5-6, making it suitable for topical use. The washability test demonstrated easy removal of gel with water, and microbial test indicates absence of contamination. These evaluation results found that prepared polyherbal gel possesses desirable physiochemical properties for topical application and may be effective in managing dysmenorrhea-related pain and discomfort.

CONCLUSION

The present study successfully formulated and evaluated a polyherbal gel containing flaxseed gel, lavender oil, and peppermint oil for management of dysmenorrhea. The formulation includes appropriate pH, good spreadability, acceptable viscosity, and microbial safety. The herbal ingredients possess anti-inflammatory, analgesic, and antispasmodic properties that help reduce menstrual pain. Therefore, the developed polyherbal gel can be considered a safe, effective, and patient-friendly herbal alternative for symptomatic relief of dysmenorrhea.

REFERENCES

1. Baighi P, Dehbozorgi Z. The survey of dysmenorrhea in adolescent girls. In: Proceedings of the 5th Congress of Zahra Nursing Faculty; 2002; Shiraz, Iran. Persian.
2. De Sanctis V, Soliman A, Bernasconi S, Bianchini L, Bona G, Bozzola M, et al. Primary dysmenorrhea in adolescents: prevalence, impact and recent knowledge. *Pediatr Endocrinol Rev.* 2015;13:512-20.
3. ACOG Committee on Practice Bulletins—Gynecology. ACOG Practice Bulletin No. 51: Chronic pelvic pain. *Obstet Gynecol.* 2004;103(3):589-605.
4. Sharghi M, Mansurkhani SM, Larky DA, Kooti W, Niksefat M, Firoozbakht M, et al. An update and systematic review on the treatment of primary dysmenorrhea. *JBRA Assist Reprod.* 2019;23(1):51-57.
5. Dawood MY. Nonsteroidal anti-inflammatory drugs and changing attitudes toward dysmenorrhea. *Am J Med.* 1988;84(5A):23-29.
6. Abreu-Sanchez A, Parra-Fernandez ML, Onieva-Zafra MD, Ramos-Pichardo JD, Fernandez-Martinez E. Type of dysmenorrhea, menstrual characteristics and symptoms in nursing students in southern Spain. *Healthcare (Basel).* 2020;8(3):302.



7. Greene R, Stratton P, Cleary SD, et al. Diagnostic experience among 4,334 women reporting surgically diagnosed endometriosis. *Fertil Steril*. 2009;91(1):32-39.
8. Patel V, Tanksale V, Sahasrabhojane M, et al.: The burden and determinants of dysmenorrhoea: a population-based survey of 2262 women in Goa, India. *BJOG*. 2006; 113(4): 453–63
9. Value Food. Nutrition and health benefits of mint [Internet]. Available from: <http://valuefood.info/Herbs-and-Spices/Nutrition-Health-Benefits-Herbs/healthbenefits-of-mint.html> [Accessed 2026 Jun 17].
10. Serap E, Sevban A, Reva B, Ayda C. Effect of aromatherapy massage on dysmenorrheal In Turkish students. *Pain Manag Nurs* 2010;13:236-40..
11. Dayana B A A, & Sabeetha S. (2020). Effectiveness of Mint and Fenugreek Paste for Reduction of Dysmenorrhea among the Adolescent Girls in Selected Areas. *International Journal of Research in Pharmaceutical Sciences*, 11(SPL4), 126–129. <https://doi.org/10.26452/ijrps.v11ispl4.3753>
12. Archives of Gynecology and Obstetrics. Springer Berlin Heidelberg, 296(2), hal. 277–283. doi: 10.1007/s00404-017-4409-6.
13. Della Corte L, Di Filippo C, Gabrielli O, Reppuccia S, La Rosa VL, Ragusa R, et al. The burden of endometriosis on women's lifespan: A narrative overview on quality of life and psychosocial wellbeing. *Int J Environ Res Public Health* 2020;17:4683. doi: 10.3390/ijerph 1713468
14. Moriyama H, Iizuka T, Nagai M and Satoh, Antiinflammatory activity of heat-treated *Cassia alata* leaf extract and its flavonoid glycoside, *Yakugaku Zasshi*, 2003, 123 (7), 607-611.
15. ACOG Committee Opinion No. 760. Dysmenorrhea and endometriosis in the adolescent. *Obstet Gynecol*. 2018;132(6):e249-e258. doi:10.1097/AOG.0000000000002978.
16. Bernardi M, Lazzeri L, Perelli F, Reis FM, Petraglia F. Dysmenorrhea and related disorders. *F1000Res*. 2017;6:1645
17. Wong CL. Health-related quality of life among Chinese adolescent girls with dysmenorrhoea. *Reprod Health*. 2018;15:80.
18. Mirabi P, Doulatian M, Mojab F, Namdari M. Effects of valerian on bleeding and systemic manifestations of menstruation. *J Med Plants*. 2012;4:125-134.
19. Mirabi P, Alamolhoda SH, Esmailzadeh S, Mojab F. Effect of medicinal herbs on primary dysmenorrhoea: a systematic review. *Iran J Pharm Res*. 2014;13:757-767.
20. Goel B, Maurya NK. Overview on herbs use in treatment of primary dysmenorrhea (menstrual cramps). *Adv Zool Bot*. 2019;7(3):47-52. doi:10.13189/azb.2019.070302.
21. Pal RS, Pal Y, Wal P, Saraswat N, Wal A. A novel approach on review of herbal menstrual cramps relievers. *Curr Womens Health Rev*. 2019;15(3):179-187. doi:10.2174/1573404815666190110102659.
22. Pellow J, Nienhuis C. Medicinal plants for primary dysmenorrhoea: a systematic review. *Complement Ther Med*. 2018;37:13-26. doi:10.1016/j.ctim.2018.01.001.
23. Kirk-Smith M. Clinical evaluation of aromatherapy. *Int J Aromather*. 2004;14(3):102-109. doi:10.1016/j.ijat.2004.06.007.
24. Priya L, Reshma S, Sripriya S, et al. Assessment of the effectiveness of *Trigonella foenum-graecum* (fenugreek seeds) on management of dysmenorrhea among late adolescent girls at selected villages, Tamil Nadu, India. *Ann Trop Med Public Health*.



- 2021;24(23):232383.
doi:10.36295/asro.2020.232383.
25. Bahl AS. Topical use of plant extract-based oil blend in relieving the symptoms of primary dysmenorrhea: an independent clinical study. *Int J Health Syst Tradit Med*. 2021;1(1):47-61. doi:10.4018/IJHSTM.2021010102.
26. Joshi VK, Joshi A. Rational use of Ashwagandha in Ayurveda (Traditional Indian Medicine) for health and healing. *J Ethnopharmacol*. 2021;276:114101.
27. Jiao MJ, Liu XQ, Ren YS, et al. Comparison of herbal medicines used for women's menstruation diseases in different areas of the world. *Front Pharmacol*. 2022;12:751207. doi:10.3389/fphar.2021.751207.
28. Namavar Jahromi B, Tartifzadeh A, Khabnadideh S. Comparison of fennel and mefenamic acid for the treatment of primary dysmenorrhea. *Int J Gynaecol Obstet*. 2003;80(2):153-157. doi:10.1016/S0020-7292(02)00372-7.
29. Tabari NS, Kheirkhah M, Mojab F, Salehi M. An investigation of the effect of curcumin (turmeric) capsule on the severity and duration of dysmenorrhea in students of Iran University of Medical Sciences. *J Evol Med Dent Sci*. 2020;9(46):3444-3451. doi:10.14260/jemds/2020/755.
30. Allen LV Jr. *Ansel's Pharmaceutical Dosage Forms and Drug Delivery Systems*. 10th ed. Philadelphia: Lippincott Williams & Wilkins; 2014.
31. Kaur LP, Gupta GD. Topical gels: a review. *Res J Pharm Technol*. 2010;3(2):[page numbers not available].
32. Anxiolytic- and antidepressant-like activities of a methanolic extract of *Morinda citrifolia* Linn. (noni) fruit in mice: Involvement of benzodiazepine-GABAergic, serotonergic and adrenergic systems Megala Narasingam, ..., Vijayapandi Pandey *Biomedicine & Pharmacotherapy* • Volume 96 • 2017 • Pages 944-952
33. Cavanagh HM, Wilkinson JM. Biological activities of lavender essential oil. *Phytother Res*. 2002;16(4):301-308. doi:10.1002/ptr.1103.
34. Mahboubi M, Shah CF, Feyzabadi M. Bactericidal effects of essential oils from clove, lavender and geranium on multidrug-resistant isolates of *Pseudomonas aeruginosa*. *Iran J Biotechnol*. 2006;4:137-140.
35. Nikfarjam M, Parvin N, Asarzadegan N. The effect of *Lavandula angustifolia* in the treatment of mild to moderate depression. *Shahrekord Univ Med Sci J*. 2010;11:66-73. Persian
36. Maghami M, Afazel MR, Azizi-Fini I, Maghami M. The effect of aromatherapy with peppermint essential oil on nausea and vomiting after cardiac surgery: a randomized clinical trial. *Complement Ther Clin Pract*. 2020;40:101199.
37. Nowak W, Jeziorek M. The role of flaxseed in improving human health. *Healthcare (Basel)*. 2023;11:395-415.
38. Jafarnejhad F, Adib Moghaddam E, Ahmad Emami S, Saki A, Hami M, Mohammadzadeh Vatanchi A. Comparative effect of flaxseed and evening primrose oil with vitamin E on severity of cyclic mastalgia in women. *Iran J Obstet Gynecol Infertil*. 2016;19:8-16.
39. Mate A, Ade P, Pise A, More S, Pise S, Kharwade R. Formulation and evaluation of polyherbal gel for the management of acne. *Int J Curr Res Rev*. 2021. Available from: IJCRR.2021.13432.
40. Seervi KL, Choudhary V, Kamalja M. Development and evaluation of anti-inflammatory herbal formulation. *Int J Sci Res*. 2018;7(2).



41. Mate A, Ade P, Pise A, More S, Pise S, Kharwade R. Formulation and evaluation of polyherbal gel for the management of acne. Int J Curr Res Rev. 2021. Available from: IJCRR.2021.13432..

HOW TO CITE: Namrata Patil*, Samruddhi Patil, Gayatri Patil, Pooja Deshmane, Ruksar Mulla, C.M.Jangme Preparation And Evaluation Of Polyherbal Topical Gel For Dysmenorrhea , Int. J. of Pharm. Sci., 2026, Vol 4, Issue 7, 3553-3570. <https://doi.org/10.5281/zenodo.21415517>

