
Review on Dysmenorrhea and Effect of Moringa Oleifera

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Abstract

Adolescent girls' quality of life is significantly impacted by dysmenorrhea. The range of prevalence is twenty-five to ninety percent. This research therefore sought to assess the impact of soups made from this plant (MO) upon teenage girls' primary dysmenorrhea.

The subject of this treatment approaching investigation were teenage girls planning to attend college. The established standard questionnaires were largely used to gather information on age, anthropometric characteristics (weight, height), age at menstruation, periods that are not regular, primary menstrual cramping (PD), and other related signs. Forty primary dysmenorrheal participants were chosen based on the data gathered. Information was then gathered about symptoms associated with primary dysmenorrhea, such as headache, leg cramps, back pain, acne, mood swings, anger, fatigue, Vomiting and feeling sick, bowel movements, sleeplessness, or changes in desire to eat. The PD participants' amount of red blood cell count and hemoglobin levels have been assessed. Prior to and following MO leaf soup administration, the hematological and dysmenorrhea-related parameters were evaluated.

According to the findings of our study, 36% of women experience dysmenorrhea. The menstrual cycle was more painful, irregular, prolonged and frequent (occurring every month) in those with dysmenorrhea. The dysmenorrheal discomfort was most common, shorter, somewhat severe, and more common in the bottom side, below pelvic region, and at various sites. Participants experiencing dysmenorrhea were more likely to experience symptoms such as fatigue, mood swings, anger and irritability, back pain, leg cramps, and abdominal pain. Participants with Parkinson's disease (PD) have significantly higher hemoglobin and red blood cell counts after receiving MO leaf soup. Additionally, it alleviates the PD symptoms related to pain and menstruation.

Keywords - Dysmenorrhea, Moringa Oleifera, painful menstruation.

INTRODUCTION

Menstrual dysphoria, characterized by painful menstruation, impacts between 50 to 90 percent of women and girls of adulthood are adolescents.^[1]

Reduced life quality, absenteeism, and a higher chance of anxiety and sadness are all consequences of dysmenorrhea. Up to 50% of patients who suffer from dysmenorrhea miss work or school at least once, and 10% to 15% miss work or school frequently when they menstruate. In support of the classification of dysmenorrhea as a central sensitization syndrome, this paper emphasizes the sensitivity to pain experienced by the women. In the second part of the article discussed about Ayurvedic treatment on the primary dysmenorrhea. The impact of this plant on teenage females' main dysmenorrhea. In the family Moringaceae which has just one genus of Moringa, the medium-

sized tree *Moringa Oleifera* is a member. Parietal placentation, three-valved fruit, and winged seeds have all been reported for this family. A total of ten different species have been recorded by various individuals. The tripinnate leaves of the *Moringa Oleifera* plant.^[2]

Types of dysmenorrhea

Primary dysmenorrhea

Secondary dysmenorrhea



Figure 1: Dysmenorrhea

Primary dysmenorrhea

When pelvic pathology is absent, primary dysmenorrhea develops. It is caused by inflammation with increased amounts of prostaglandin and leukotrienes, which results in painful cramping and uterine contractions.^[3]

Secondary dysmenorrhea

Ten percent or so of cases of dysmenorrhea are secondary, meaning they result from pelvic pathologies or a recognized clinical illness. Endometriosis is the most frequent reason. Anatomical normalizations that are obstructive or non-obstructive that are congenital or acquired are among the other etiologies.^[4]



Figure 2: Endometriosis

Women having menstrual cramps and a reaction to discomfort

Phases of cycles Compared to nondysmenorrheic women, Women with dysmenorrhea showed decreased sensation sensitivities when a thumb compression trigger was applied. at all menstrual cycle phases.^[5]

Risk factors of dysmenorrhea

The following factors raise the incidence of primary dysmenorrhea: age under 30, measurement of muscle mass below .20 kg/m², cigarette use, a past of domestic violence, lengthier monthly periods, high menstrual bleeding, and a previous menstruation (as early as the age of 12). Premenstrual syndrome, infertility and a track record of inflammation in the pelvis illness are more factors connected to the disorder. Using oral contraceptives, getting older, being more paranoid, exercising are protective factors.^[6]

The serious effect of this dysmenorrhea is Nulliparity (women who is not able to give birth to the child) .it is also lead to pelvic inflammatory disease. this is lead to the intense pain at abdominal region.^[7]

| Risk Factors |
|---------------------------------|
| 1.Nulliparity |
| 2.Heavy menstrual flow |
| 3.smoking |
| 4.Irregular menstrual cycle |
| 5.Low body mass index |
| 6.Premenstrual symptoms |
| 7. Age<30 |
| 8.Menarch before 12 year of age |
| 9.Sexual abuse |

Table 1: Risk Factor

Symptoms of dysmenorrhea

Lower abdominal cramps that start between 8 to 72 hours after the start of menstruation. are the most common description of dysmenorrhea. It frequently comes with symptoms including headaches, dizziness, cramping in the muscles, low back pain, nausea, vomiting, diarrhea, and in more extreme situations, insomnia. 47 percent on an analogous equivalent range of 0–10. of the more than 400 dysmenorrhea patients in the research experienced moderate pain, while 17% reported severe pain.^[8]

Every monthly cycle, primary dysmenorrhea tends to return. It usually starts six-to-twelve-month post menstruation, which corresponds with the start of phases of ovulation.^[9]

Secondary symptoms of menstrual may appear further during life or shortly after menarche. One Changes in oral gradual increase of ovarian discomfort, irregular menstrual blood loss vaginal pus, and weakness are signs more typical with additional dysmenorrhea.^[10]

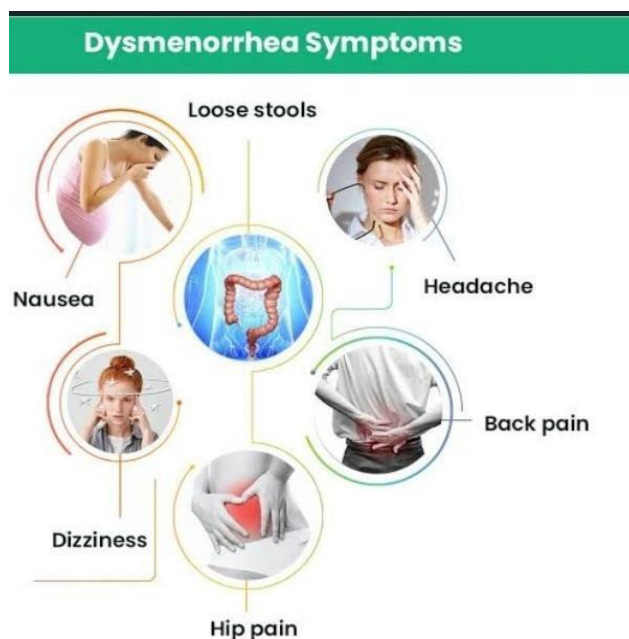


Figure 3: Symptoms

Primary dysmenorrhea: the case for central sensitization

Central sensitization is a condition where the body's sensitivity to normal peripheral stimuli is considerably amplified. It is described as an abnormal increase in discomfort caused by the neurological processes.^[11]

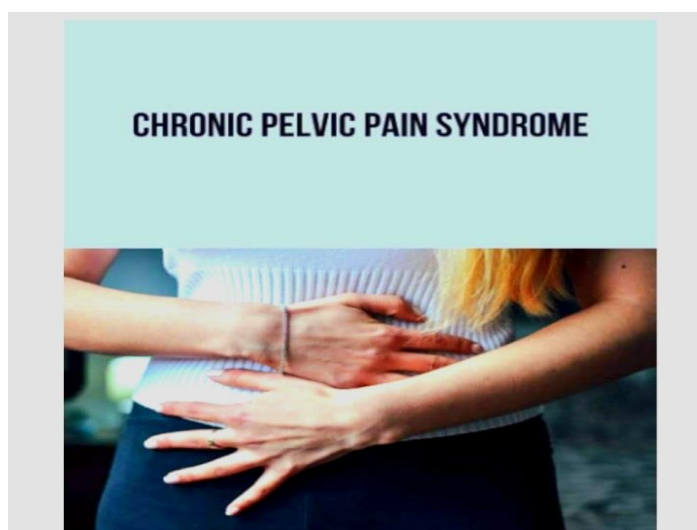


Figure 4: CPP syndrome

CPP means chronic pelvic pain it occurs in abdominal so but it severe in women but it known as the primary dysmenorrhea in women. For instance, A newly thorough the ten-year monitoring research found IBS-afflicted women are inclined to than those without IBS to develop dysmenorrhea. IBS is irritable bowel syndrome. Comparatively speaking, women who suffer from higher amounts of pain during your period, irritable bowel discomfort, and stomach muscle anxiety, or greater rates of period pain, bladder discomfort, and spinal and stomach muscle excessive pain, are found in patients with both menstrual cramps & irritable bowel or menstrual cramps and urine calculus's. Researchers also hypothesized recently that menstrual cramps could make a person to a long-term discomfort state.^[12]

Primary dysmenorrhea will give severe effect on women's body like severe pain in abdominal region, headache and it also gives impact on the day to days life of women. we can reduce the pain

of primary dysmenorrhea by using soup of *Moringa Oleifera*. it can be also reduced by eating dark chocolate, fennel.^[13]

Impact of primary dysmenorrhea on QoL (quality of life)

Emotions, Quality of life, and workday operating

Periodic pain negatively affects many Parts of the individual life of those who experience it, such as familial connections, Friendships, performance at work, school, social and recreational activities. This has been shown in Many extensive longitudinal investigations with upwards of thousands of women as well as female adolescents have been carried out globally.^[14]

Numerous long-term research projects involving Female teenagers who experience problems with menstruation possess demonstrated that Levels of attendance among these women extend between 34 and 50%, and 10 to 30% of women who are employed or enrolled at school experiencing 1-2 missed workdays per monthly.^[15]

The impact of Depression and mental health, including emotions, are additionally impacted by dysmenorrhea discomfort. into account, since Anguish cannot be simply a physical encounter, yet in addition to a psychological event. Pain makes psychological discomfort worse, and psychological distress makes pain worse.^[16]

Primary dysmenorrheal women have noticeably higher level so agitation. and have worse mood states whilst menstruating as opposed to both they're during the limited research which examined mental anguish in women claiming get periodic main periods, the follicle stage with the menstrual period of without discomfort control individual's dysmenorrheal women pain. Also, depression and anxiety are strongly associated with menstrual pain (in both primary and secondary dysmenorrhea).^[17]

Sleep: this also effect on sleep of women

The majority of research on sleep and pain has been done on individuals with chronic, long-term pain conditions including osteoarthritis and rheumatoid arthritis. Evidence suggests that pain is linked to lower Sleep metrics that are both arbitrary and subjective, which supports the theory that pain is the main reason for sleeplessness in people in a variety of health illnesses. Compared with different times of the monthly cycle, women stated increased sleepiness throughout the initial several days following their cycles, as 28 percent of those surveyed claimed that sleep was disrupted by painful periods or contractions. These findings were reported by the Women with Nap Survey by the National Sleep Foundation (1998). Dysmenorrheal pain did not significantly affect slow waves sleep, but it did cause women with the condition to sleep considerably less during fast eye movements while asleep than during without discomfort periods. Comparing the second trial to a painless period, it was shown that Women having acute primary menstrual cramp experienced higher Stage 1 symptoms, lower sleep quality, and impaired effectiveness of sleep. when they experienced menstrual pain. by experiencing severe pain women's sleep will be disturbed.^[18]



Figure 5: Quality of life

Diagnosis of Dysmenorrhea

First and foremost, a thorough medical, gynecological, menstrual, family, and surgical history should be taken. dysmenorrhea symptoms running in the family can suggest attachments, but are cord of pelvis treatment might suggest endometrial It is important to carefully elicit symptoms because many Clients feel that discomfort is atypical aspect of menstruation. Between the identification and the beginning of signs, here is often a significant delay, lasting anywhere from 19 years for adults to 54 years for teenagers. Whenever a client presents an examination of the pelvis is not necessary if the signs are typical for main menstrual cramps by the symptoms of primary dysmenorrhea, we will diagnose the dysmenorrhea.^[19]

Ayurvedic Treatment on Primary Dysmenorrhea

Funnel and *Moringa Oleifera* are two examples of Ayurvedic treatments for primary dysmenorrhea. *Moringa Oleifera* soup might ease the discomfort associated with dysmenorrhea.^[20]

Moringa Oleifera

With just one genus, *Moringa*, the family *Moringaceae* contains the medium-sized tree *Moringa Oleifera*. It has been stated that the family produces winged seeds, three-valved fruit, and parietal placentation. There have been reports of four to ten different species from various sources. Tripinnate leaves are a distinctive feature of *Moringa Oleifera* leaves. According to reports, this plant may be eaten and has been used for millennia as medicine and food in Asian and African nations. Necessary amino acids, plus nutrients A, as well as C, as well as D potassium, calcium, phosphorus, iron, and antioxidants (flavonoids, β -carotene, and vitamin C) are abundant in the leaves. Leaf extracts have also been shown to exhibit antioxidant action. greater than that of the other plant sections; it has the highest ascorbic acid content (107 mg/100 g), the maximum amount of flavonoids (31 mg per 100 g) also highest total aromatic content (105 mg Gallic acid equivalents/100g). As compare with other plants *Moringa Oleifera* is very useful and rich in important chemical compounds.^[21]



Figure 6: Moringa Oleifera

Preparation of Moringa Oleifera soup

Once the large, thick stems of MO were removed, the fresh leaves were thoroughly washed twice in fresh water. 200ml of boiling water was added to the 30gm of leaves, and the combination was allowed to boil up until approximately ten minutes. Next, during a menstrual cycle, the subjects received 100c c of the soup a piece, filtered, on an empty stomach in the early morning. This soup gives its effect at morning when stomach is empty.^[22]

Effect of Moringa Oleifera soup

The following symptoms are more common during menstruation: fatigue (97%), irritation and anger (68%), back pain (82%), abdominal discomfort (95%), cramps in the legs (60%), pimples (57%), and depression or changes in mood (47%). All other symptoms, excluding Periodic pain's start prior to menstruation, were successfully treated with soup made from Moringa Oleifera leaves. [table no.2]^[23]

| Dysmenorrheal | Symptoms | Pretreatment | Post treatment | Changes |
|-----------------------------|-----------------------------------|--------------|----------------|---------|
| Onset of menstrual pain | Before menstruation | 4(10) | 5(13) | +03% |
| | After menstruation | 21(53) | 10(25) | -20% |
| | Before and after | 15(37) | 7(17) | -20% |
| Length | 1-2 days | 23(58) | 18(45) | -13% |
| | 2-3 days | 12(30) | 8(20) | -10% |
| | Entire days | 5(12) | 3(7) | -05% |
| Pain severity | Mild | 24(60) | 18(45) | -15% |
| | Moderate | 33(83) | 13(33) | -50% |
| | Severe | 4(10) | 2(5) | -05% |
| Pain location | L. Abdomen | 28(70) | 5(12) | -58% |
| | Low back | 7(17) | 4(10) | -07 |
| | S. Abdomen | 9(23) | 8(20) | -03% |
| | At.diff.loc | 9(23) | 2(5) | -18% |
| Illness during menstruation | Mood swings/emotional disturbance | 19(47) | 13(32) | -15% |
| | Headache | 4(10) | 3(7) | -03% |
| | Back pain | 33(82) | 26(65) | -17% |
| | Leg cramp | 24(60) | 18(45) | -15% |
| | Tender breast | 6(15) | 0(0) | -15% |
| | Acne | 23(57) | 13(32) | -25% |
| | Tiredness | 39(97) | 29(72) | -25% |
| | Insomnia | 9(22) | 5(12) | -10% |
| | Diarrhea | 3(8) | 2(5) | -03% |
| | Appetite | 11(27) | 5(12) | -15% |
| | Nausea/vomiting | 7(18) | 5(12) | -06% |
| | Short temper | 27(68) | 16(40) | -28% |
| | General pain | 15(38) | 5(13) | -25% |

Table 2: Effect Range

The impact of MO leaves curry is being served. hemoglobin and red blood cell levels in individuals with main symptoms of menstrual cramping was displayed in [Table 3] Following therapy, showed a noteworthy ($p < 0.001$) rise in HB and RBC levels compared to the pretreatment levels.

| Sr. no | Parameters | Before treatment | After treatment | Difference in changes |
|--------|------------|------------------|-----------------|-----------------------|
| 1. | Hb(g/dl) | 10.23+1.61 | 12.60+1.71 | 2.36+1.02 |
| 2. | RBC (mm) | 3.98+0.89 | 5.53+0.38 | 1.51+0.38 |

Table 3: Changes in RBC and HB Count

Moringa Oleifera's Health Benefits

Flavonoids, dietary fiber, quercetin-3-glucoside, phenols, and glucomoringin have all been linked to *M. Oleifera*'s antidiabetic properties. The juices using the leaves of *M. Oleifera* were observed to demonstrate significant hypoglycemic and anti-hyperglycemic actions in rats with diabetes and normal rats that were induced with Alexon.^[24]

An oral dosage of *M. Oleifera* leaf powder caused our bodies weight average to drop significantly in comparison with the management.^[25]

Taking an alcohol-based extract of *M. Oleifera*'s stems and growl, an experiment was conducted to determine the plant's antiulcer properties. In rat models, stomach ulcers were created by pylorus ligation and ethanol. Following this, three groups were given oral medication: *M. Oleifera*, synthetic medicine omeprazole, and normal saline for the control group. The inflammation score had been computed together with analyses of pH, Acidity of the stomach, free astringency, and overall acidity volume. 3.92 ± 0.11 was the command team's inflammation score the team administered omeprazole demonstrated an ulcers core of 0.44 ± 0.003 and offered 88.47% ulcer prevention.; in contrast, the group administered *M. Oleifera* (500 mg kg^{-1}) demonstrated an ulcer index of 0.84 ± 0.16 and provided 78.51% protection against ulcers.^[26]

Extracts from *M. Oleifera*'s bark had anti-inflammatory properties into those of the medication diclofenac in a photo edema model induced by carrageenan.^[27]

In trials employing models where the disease was generated by colchicine, the extracts from *M. Oleifera* leaves utilized a fluid solvent to extract provided protection against Alzheimer's disease.^[28]

M. Oleifera's Meals and Additional Products:

Because The plant *M. Oleifera* food items were found to have low fat content and high dietary fiber, this species became employed in a variety of methods to provide Examples of foods with limited calories. [Figure no.7] To illustrate Just

1. **stem** Gum: it functions as a booster Bark: employed in the tanning business
2. **seed** Grains: to strengthen them Oil: used to make soups and fragrances
3. **Leaves:** Powder is used to make soup, bread, and Amla meal more robust
4. **root** starch: a biomaterial in the pharmaceutical sector. [Figure no 7]^[29]

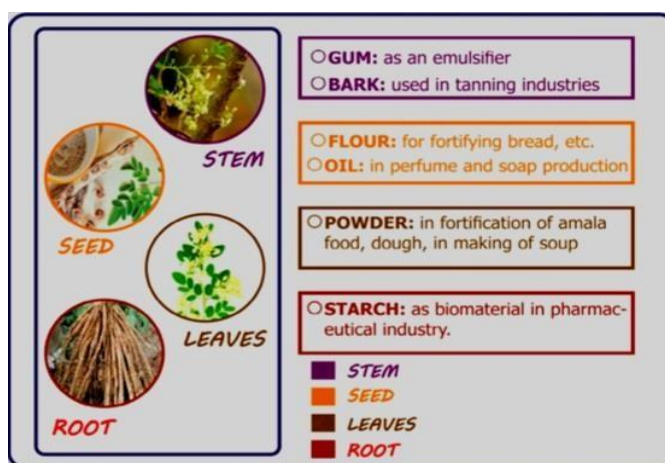


Figure 7: Additional Products

Other Preparations of *Moringa Oleifera*

Prior to being administered to the mammal participants, the most widely used research rodents (mouse & hamsters) are prepared in a variety of methods using *Moringa Oleifera* leaves (MOL). Aqueous, alcohol-extracted, air-dried, and ground forms are among the several forms of extracts. Given that the stated yield of the extract varies from 1.34% to 17.49%, the alcohol extracted form appears said that it is the form most commonly employed. Flavonoids, phenolic compounds, vitamins, and certain amino acids were found by certain writers through additional examination or fractionations. Normal administration of extracts was done by *Oleifera*.^[30]

Studies on Toxicity, Medicinal Potential, and MOL's LD50

According to blood tests, the aqueous extract of MOL at 3000mg/kg was found to be genotoxic in a different as are et al. (2012) research. This dosage exceeds what people typically take in an additional study, the same authors used People mononuclear cells located in the peripheral circulation in vitro and found harmful effects at doses of 20mg/kg.^[31]

Other writers have determined the LD50 and documented extremely large dosages of the aqueous extract in mice. In research conducted on acute patients, A waddle et al. (2012) gave 1500 mg/kg through the intestine and 6400 mg/kg mouth. According to Bakreet al.(2013) and Oyagbemi et al. Prevalence. (2013), there are additional documented toxicological consequences associated with extended usage of the alcoholic extract of MOL. Bakreet al.(2013) revealed that while there was an increased an oxygenic impact and better learning, The leaf's extract from alcohol exhibited a substantial reduction in top dips, development, raising them, and movement that is dose-related. The leaves' CNS depressive and anti-convulsant effects were determined by the authors, who speculated that the increase of the central inhibitory mechanism may have been a possible cause for these effects. This likely explains why traditional medicine has used the leaves to treat epilepsy. Chronic leaf administration has been shown by Oyagbemi et al. (2013) to put the personate risk for renal and liver damage.^[32]

Applications of *M. Oleifera* in industry

In the fragrance sector

Because *M. Oleifera* oil can absorb the scents of volatile oils, it was once considered the greatest base oil for making perfume. Because of the oil's extraordinary ability to capture and hold on to scents, even transient ones, perfume designers still hold it in high regard.^[33]

The transportation and Lubricant sectors

It's interesting to note that biodiesels can be mixed with diesel to increase efficiency, but they can also be used in their pure, unblended state. From 3000 kg of seeds, the oil from *M. Oleifera* seed scan produce 2000L of biodiesel.^[34]

Agriculture-related Industries

Like a natural bio stimulant Numerous substances present in *M. Oleifera*, particularly the photochemical, exhibit stimulating properties in plants. These compounds have been shown to reduce stress and speed up rates of biochemical and photosynthetic activity.^[35]

CONCLUSION

In conclusion, by considerably correcting the participants' lowered heamoglobin and red blood cell counts, the administration with *Moringa Oleifera* leaf soup substantially improves both the menstrual features and the pain-associated symptoms. By blocking the cyclooxygenase enzyme, M O's prostaglandins inhibition has primarily mediated its analgesic effect. Because of the elevated

concentration of polyphenols and other antioxidant chemicals found in *Moringa Oleifera* leaves, which provide brain protection via boosting the body's antioxidant defense system or collecting damaging free radicals, it is likely that these substances are the mechanism of action of the leaves. With enormous potential for application in medicine and other fields of life, *M. Oleifera* is an extremely valuable nutrient resource.

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