ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24SEP1375

The Efficacy of Ginger and Fennel in Alleviating Primary Dysmenorrhea: A Pilot Study

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Abstract:- Primary dysmenorrhea is a prevalent condition affecting many young women, characterized by debilitating menstrual pain that can significantly impair daily activities. Despite the widespread use of natural remedies, systematic comparisons of their efficacy remain limited. This pilot study aims to investigate the effects of ginger and fennel on pain severity, intensity, and duration in a sample of 60 women. Results suggest that both ginger and fennel can alleviate symptoms, with ginger showing greater efficacy. This study highlights the potential of natural remedies in managing primary dysmenorrhea and lays the groundwork for future research.

I. INTRODUCTION

Primary dysmenorrhea is a common gynecological condition that manifests as severe cramping pain during menstruation [1]. It often leads to significant discomfort, impacting physical, emotional, and social well-being. While many women turn to over-the-counter medications, there is a growing interest in natural remedies due to their potential efficacy and lower side effect profiles [3-6]. This study investigates the effectiveness of two widely used natural remedies—ginger and fennel—on pain severity, intensity, and duration in young women experiencing primary dysmenorrhea [7-10].

II. METHODOLOGY

➢ *Study Design*

This pilot study utilized a randomized, double-blind, crossover design involving 60 participants aged 18 to 26 who reported experiencing primary dysmenorrhea. The study was conducted over three menstrual cycles, allowing participants to experience each intervention—ginger, fennel, and a placebo.

➢ *Participants*

Eligible participants were recruited through local universities and community health centres. Inclusion criteria included regular menstrual cycles and self-reported dysmenorrhea. Exclusion criteria involved current use of hormonal contraceptives, recent use of pain medications, or known allergies to ginger or fennel.

➢ *Interventions*

- *Ginger Group:* Participants received ginger capsules (500 mg) daily during the first three days of menstruation.
- *Fennel Group:* Participants received fennel capsules (480 mg) daily during the same period.
- *Placebo Group:* Participants received inactive capsules identical in appearance to the ginger and fennel capsules.

➢ *Assessment*

Pain severity was measured using the Visual Analog Scale (VAS), where participants rated their pain on a scale from 0 (no pain) to 10 (worst pain imaginable). Pain intensity was evaluated using the McGill Pain Questionnaire, which captures both qualitative and quantitative aspects of pain. Participants also recorded the duration of pain in hours during the initial three days of menstruation.

➢ *Statistical Analysis*

Data were analyzed using ANOVA to compare the efficacy of the three interventions. A significance level of $P<0.05$ was set for all statistical tests.

III. RESULTS

➢ *Pain Severity*

Results indicated that participants taking ginger reported a significantly lower VAS score (3.15±1.18) compared to those taking fennel (4.38±1.32) and the placebo group (6.10±1.45).

➢ *Pain Intensity*

For pain intensity, ginger users averaged a score of 1.50±0.28 on the McGill Pain Questionnaire, while fennel users reported 1.65±0.35 and the placebo group averaged 2.05±0.54.

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➢ *Pain Duration*

In terms of pain duration, ginger demonstrated a statistically significant reduction, with participants reporting an average of 4.5 hours of pain compared to 6.8 hours for fennel and 8.2 hours for the placebo group ($F=105.67$, $P<0.001$).

IV. DISCUSSION

The findings of this pilot study suggest that both ginger and fennel may be effective in managing primary dysmenorrhea [11-13]. Ginger, in particular, emerged as the more effective option, significantly reducing pain severity, intensity, and duration compared to fennel and the placebo [14-15]. These results align with previous research highlighting the anti-inflammatory and analgesic properties of ginger, attributed to its bioactive compounds such as gingerols and shogaols.

V. LIMITATIONS

While promising, this pilot study has limitations. The small sample size may affect the generalizability of the results. Additionally, participants' self-reported measures may introduce bias. Future studies with larger cohorts and objective pain measurement tools are needed to validate these findings.

VI. CONCLUSION

This pilot study provides initial evidence supporting the efficacy of ginger and fennel in alleviating primary dysmenorrhea symptoms, with ginger showing particularly strong results. As young women seek effective and safe alternatives to conventional pain management, these natural remedies offer a viable option. Further research is warranted to explore the mechanisms behind their efficacy and to establish standardized treatment protocols for managing dysmenorrhea with natural interventions

➢ *Conflict of Interest:*

There is no conflict of interest to disclose.

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