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Effectiveness of Zingiber Officinale Tea on Dysmenorrhea Among Bsc Nursing Students of PRS College of Nursing Trivandrum

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ABSTRACT

Dysmenorrhea is one of the most common gynecological problems affecting adolescent and young adult females, particularly nursing students, and it significantly interferes with their academic performance, clinical activities, and overall quality of life. Menstrual pain is primarily caused by increased production of prostaglandins, leading to uterine contractions, ischemia, and pain. Although pharmacological interventions such as non-steroidal anti-inflammatory drugs are commonly used for pain relief, their long-term use may result in adverse effects. Hence, there is an increasing interest in safe, economical, and non-pharmacological interventions for the management of dysmenorrhea. Ginger (Zingiber officinale), a commonly used herbal remedy, possesses anti-inflammatory and analgesic properties that help in reducing menstrual pain by inhibiting prostaglandin synthesis.

The current study sought to determine whether Zingiber officinale (ginger) tea was beneficial for treating dysmenorrhea in BSc Nursing students at a particular Thiruvananthapuram nursing institution. A quantitative research approach with a quasi-experimental design was adopted for the study. Sixty BSc Nursing students who experienced dysmenorrhea were selected using purposive sampling technique and divided into experimental and control groups. The experimental group received ginger tea during the first two days of menstruation, while the control group received routine care without any intervention. Data were collected using a structured demographic questionnaire and the Numerical Pain Rating Scale. Pre-

test and post-test pain scores were assessed and analyzed using descriptive and inferential statistics.

The findings of the study revealed that the majority of students in both groups experienced moderate to severe dysmenorrhea during the pre-test. After the administration of ginger tea, a marked reduction in pain intensity was observed in the experimental group during the post-test.

INTRODUCTION

Menstruation is a normal physiological process that marks reproductive maturity in females; however, it is often associated with discomfort and pain known as dysmenorrhea. One of the most common gynecological issues affecting teenage girls and young women is dysmenorrhea particularly those in academic and professional courses such as nursing. It is characterized by cramping pain in the lower abdomen that may radiate to the lower back and thighs and is frequently accompanied by symptoms such as nausea, vomiting, headache, fatigue, and mood disturbances. These symptoms can significantly interfere with daily activities, academic performance, clinical practice, and overall quality of life.[1]

Dysmenorrhea is broadly classified into primary and secondary types. Primary dysmenorrhea occurs in the absence of any pelvic pathology and is commonly associated with ovulatory cycles, whereas

Statistical analysis showed a significant difference between pre-test and post-test pain scores in the experimental group at $p < 0.05$, indicating the effectiveness of ginger tea in reducing dysmenorrhea. There was no discernible correlation between certain demographic factors and post-test pain levels. The study concluded that *Zingiber officinale* tea is an effective, safe, economical, and non-pharmacological intervention for reducing dysmenorrhea among BSc Nursing students. Incorporating ginger tea as a complementary therapy may help nursing students manage menstrual pain effectively, reduce absenteeism, and improve their academic and clinical performance.

Keyword: Dysmenorrhea, ginger tea, *zingiber officinale*, nursing students, non-pharmacological intervention

secondary dysmenorrhea results from underlying pelvic disorders such as endometriosis or fibroids. The pain experienced during menstruation is primarily due to increased production of prostaglandins, which cause uterine hypercontractility, reduced uterine blood flow, and ischemia, leading to pain. Studies have reported a high prevalence of dysmenorrhea among nursing students, with many experiencing moderate to severe pain that leads to absenteeism and decreased concentration during classes and clinical postings.[2,3]

Pharmacological management, particularly non-steroidal anti-inflammatory drugs (NSAIDs), is widely used for the treatment of dysmenorrhea. Although effective, prolonged use of these medications may cause adverse effects such as gastrointestinal irritation, renal impairment, and drug dependency. Consequently, there is a growing demand for safe, effective, and non-pharmacological interventions to manage menstrual pain. Complementary and alternative therapies have

gained popularity due to their minimal side effects and holistic approach to health care.[4,5]

Ginger (*Zingiber officinale*) is a widely used medicinal herb known for its anti-inflammatory, analgesic, and antispasmodic properties. The active compounds present in ginger, such as gingerols and shogaols, inhibit prostaglandin synthesis and reduce uterine muscle contractions, thereby alleviating menstrual pain. Ginger has been traditionally used as a home remedy for various ailments, including menstrual discomfort, and recent scientific studies have supported its effectiveness in managing dysmenorrhea.[6-8]

Nursing students face unique challenges due to their rigorous academic schedules, prolonged clinical hours, and physical and psychological stress, which may exacerbate the impact of dysmenorrhea. Effective management of menstrual pain is essential to ensure their well-being, academic success, and professional performance. Therefore, the present study aims to assess the effectiveness of *Zingiber officinale* tea on dysmenorrhea among BSc Nursing students, with the intention of providing evidence-based support for a simple, economical, and non-pharmacological intervention that can be easily incorporated into daily practice. [9]

MATERIALS AND METHODS

A quantitative research approach with a quasi-experimental design was adopted. The study was conducted among 60 BSc Nursing students of PRS College of Nursing, Thiruvananthapuram. Purposive sampling technique was used to select the samples. The experimental group received ginger tea during the first two days of menstruation, while the control group did not receive the intervention. Pain was assessed using a Numerical Pain Rating Scale during pre-test and post-test. The reliability of the tool was established using test-retest method. [10,11]

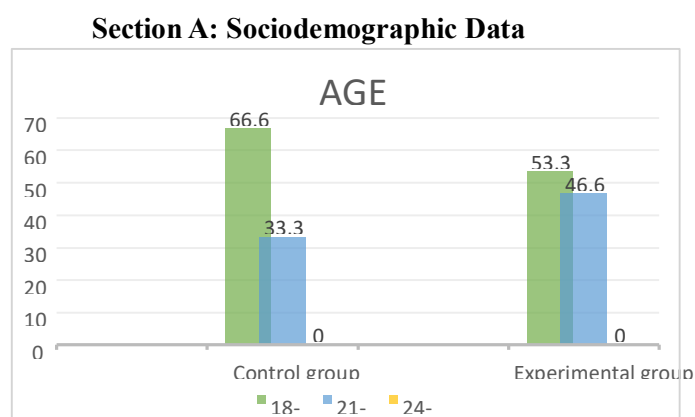
Tools And Technique

The tools consist of two sections

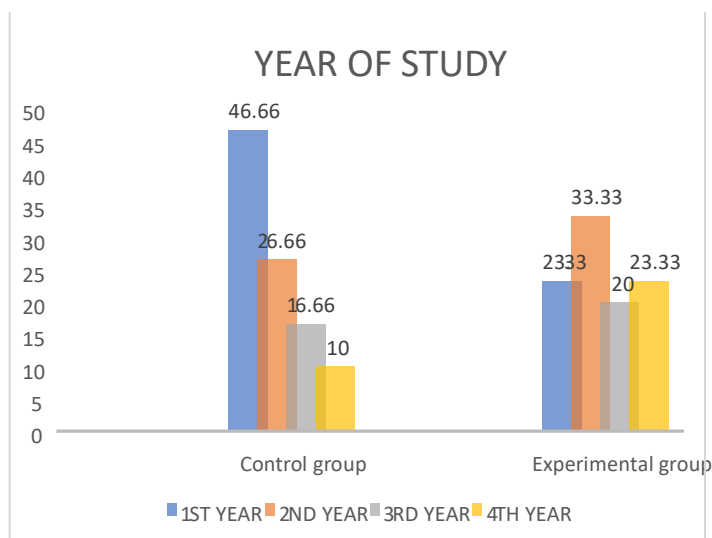
- Section A: Sociodemographic Data
- Section B: Numerical pain rating scale

Scoring

Scoring was done using the Numerical Pain Rating Scale to assess the severity of dysmenorrhea. The scale ranged from 0 to 10, with 0 indicating no pain and 10 indicating the worst possible pain. The scores were interpreted as 0 for no pain, 1–2 for mild pain, 3–4 for moderate pain, and 5–10 for severe pain. Higher scores denoted greater intensity of dysmenorrhea and were used to evaluate the effectiveness of *Zingiber officinale* (ginger) tea by comparing pre-test and post-test pain scores. [12]

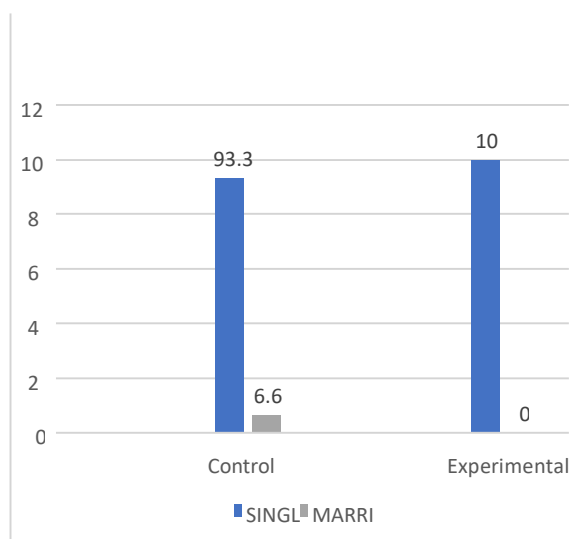


Graph 1: Frequency and percentage distribution of samples based on age



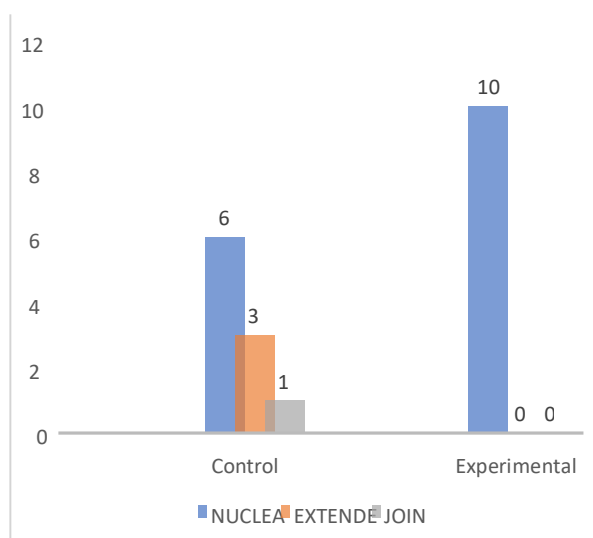
Graph 2: Frequency and percentage distribution of samples based on year of study.

The above graph reveals that majority of 46.66% of students are studying in the 1st year in control and 33.33 % of students are studying 2nd year of experimental group.



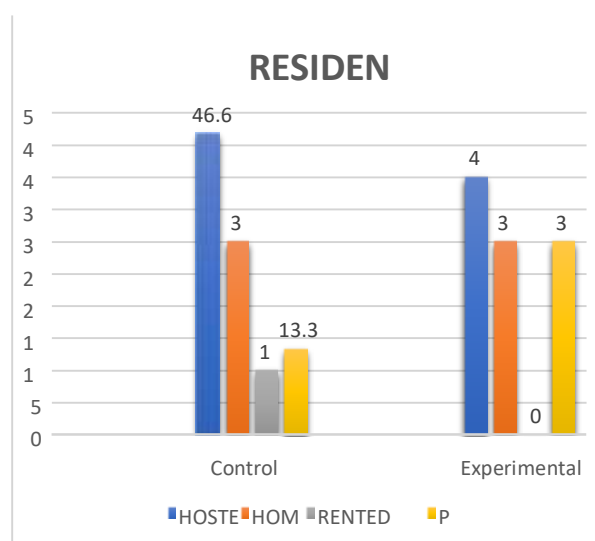
Graph 3: Frequency and percentage distribution of samples based on marital status.

The above graph reveals that majority of 93.33% of students are single in control group and 100% of students are single in experimental group.



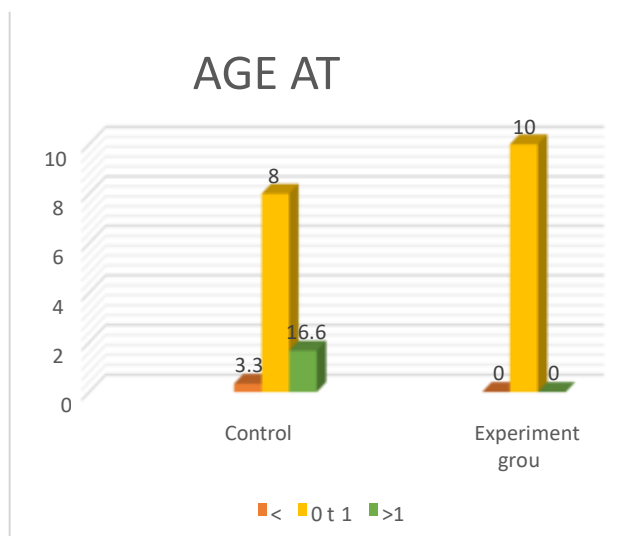
Graph 4: Frequency and percentage distribution of samples based on type of family.

The above graph reveals that majority of 60% of students are from nuclear family in the control Group and 100% of students are from nuclear family in the experimental group.



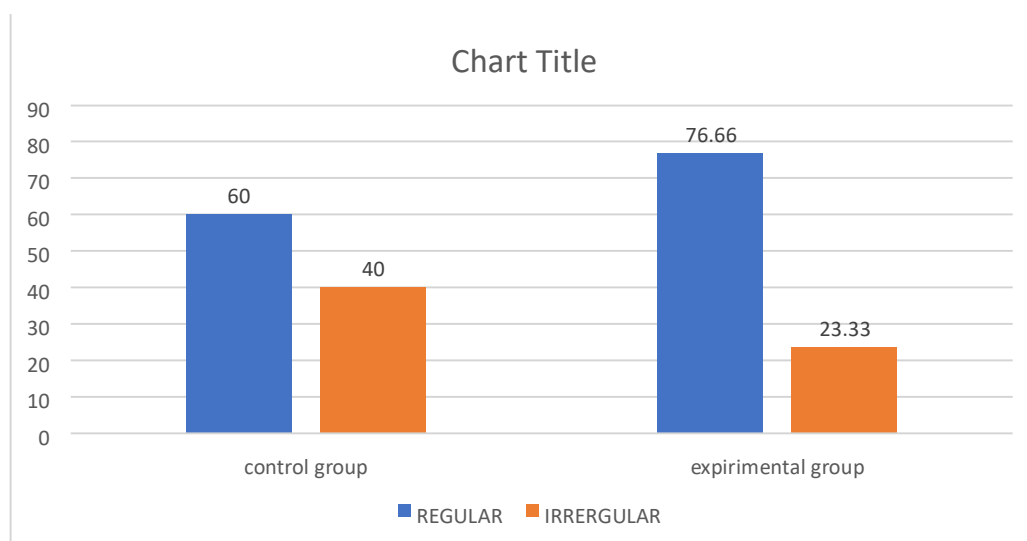
Graph 5: Frequency and percentage distribution of sample based on residence.

The above graph reveals that 46% of students in the control group stays hostel and 40% of students in the experimental group stay in the hostel.



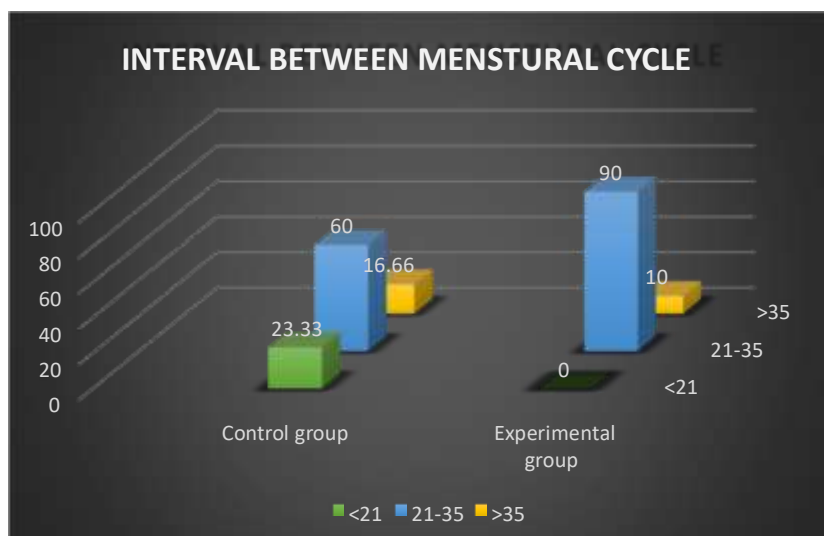
Graph 6: Frequency and percentage distribution of sample based on age of menarche.

The above graph reveals that 80% of students in the control group attained menarche during the age between 9 to 15 years of age and 100% of students in the experimental group attained menarche during age between 9 to 25 years of age.



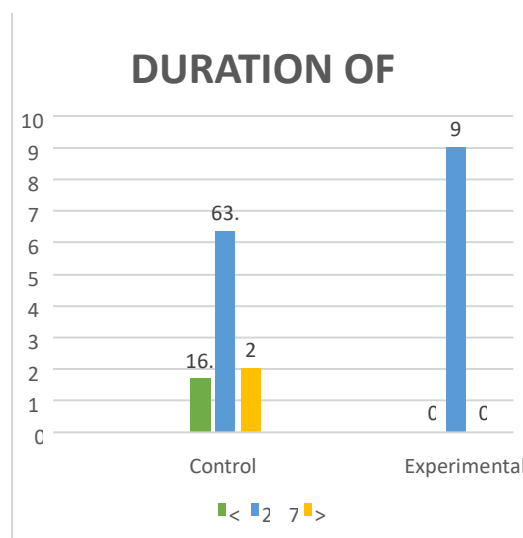
Graph 7: Frequency and percentage distribution of sample based on menstrual cycle regularity.

The above graph reveals 60% of students in the control group have regular menstrual cycle and 76.66% students in the experimental group have regular menstrual cycle



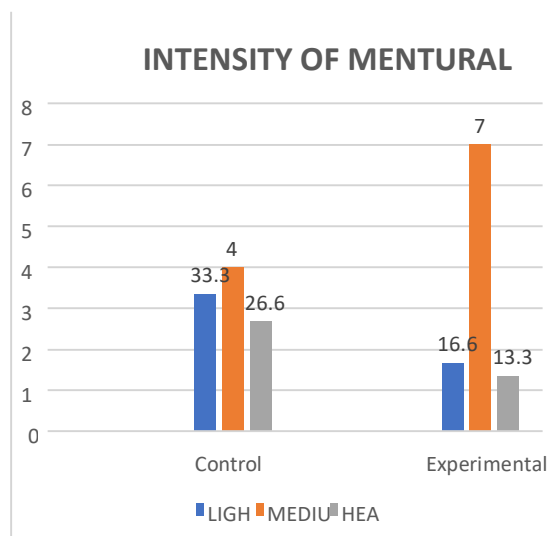
Graph 8: Frequency and percentage distribution of sample based on interval between menstrual cycle.

The above graph reveals that 60% of students in the control group have interval between mensuration of 21 to 35 days and 90% of students in the experimental group have interval between menstrual cycle between 21 to 35 days.



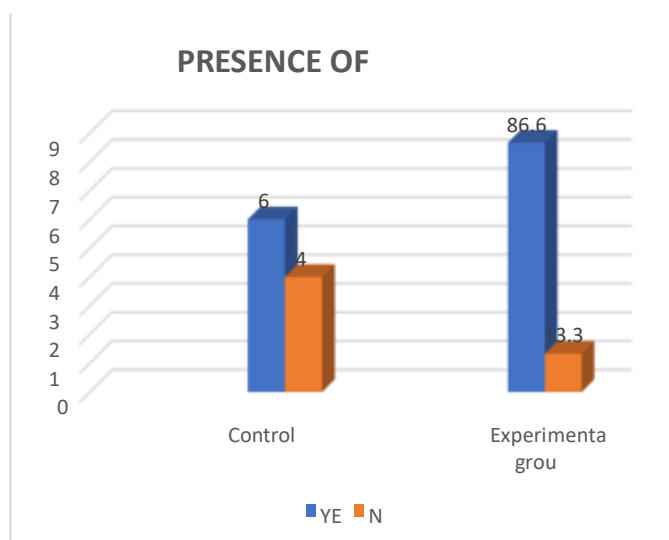
Graph 9: Frequency and percentage distribution of sample based on duration of menstrual flow.

The above graph reveals the 63.33% of students in the control group have duration of menstrual flow for 2 to 7 days and 90% of students in the experimental group have duration of menstrual flow for 2 to 7 days.



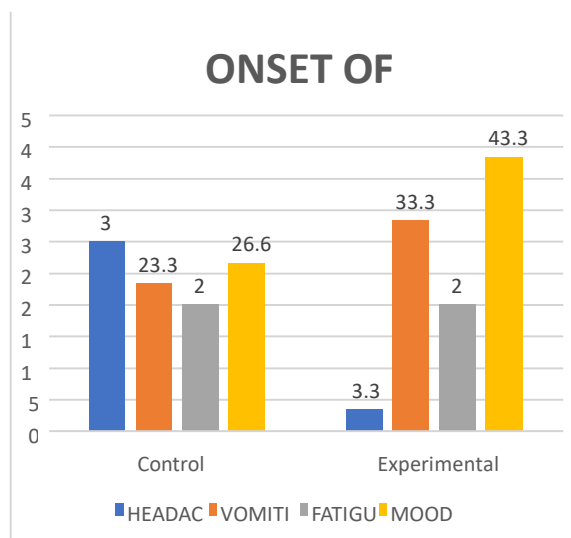
Graph 10: Frequency and percentage distribution of sample based on intensity of flow.

The above graph reveals that 40% of students in the control group have medium menstrual flow and 70% students in the experimental group have medium menstrual flow.



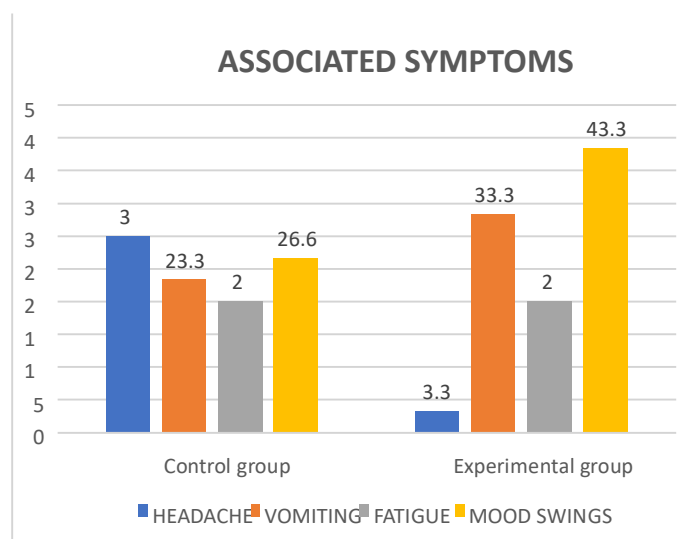
Graph 11: Frequency and percentage distribution of sample based on presence of dysmenorrhea.

The above graph reveals that 60% of students in the control group have dysmenorrhea and 86.66% of students in the experimental group have dysmenorrhea.



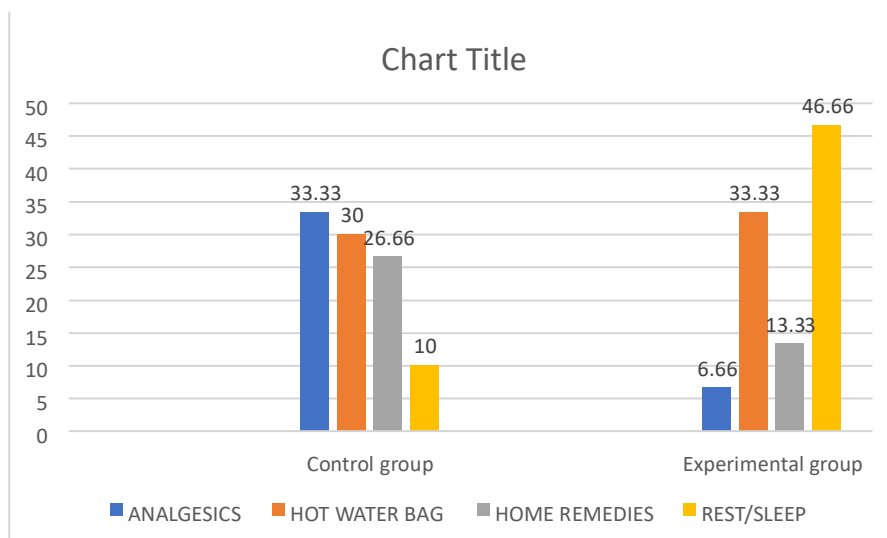
Graph 12: Frequency and percentage distribution of sample based on onset of pain.

The above graph reveals that 30% of students in the control group have headaches and 43.33% of students in the experimental group have mood swings.



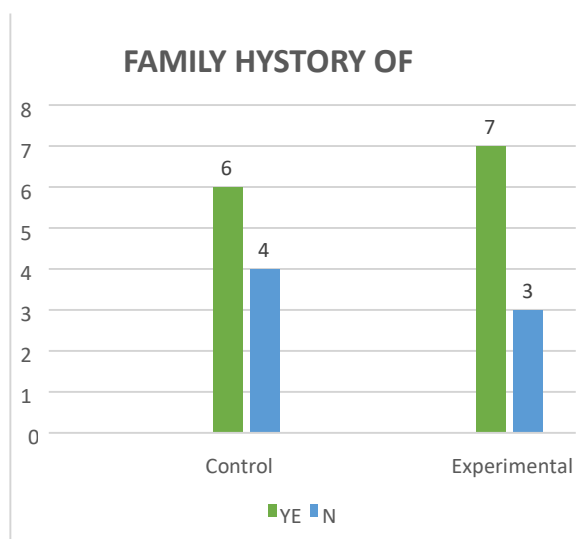
Graph 13: Frequency and percentage distribution of sample based on associated symptoms.

The above graph reveals that 30% of students in the control group have headaches and 43.33% of students in the experimental group have mood swings.



Graph 14: Frequency and percentage distribution of samples based on methods used for pain relief.

The above graph reveals that 33.33% of students in the control group uses analgesics method of pain relief and 46.66% of students in the experimental group uses rest/sleep method of pain relief.

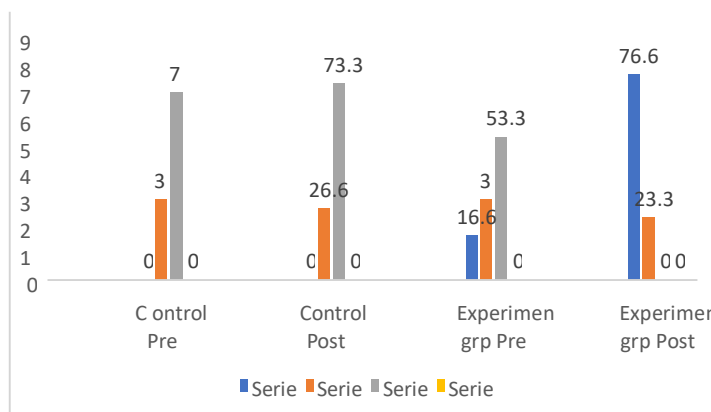


Graph 15: Frequency and percentage distribution of sample based on family history of dysmenorrhea.

The above graph reveals that 60% of students in the control group have family history of dysmenorrhea and 70% of students in the experimental group have family history of dysmenorrhea.

Section B: Numerical pain rating scale

0-10 Scale of Pain Severity



Graph 16: Frequency And Percentage Distribution of Sample Based 0 – 10 Scale of Pain Severity.

The above graph reveals that 70% of students in control group pretest have severe pain, 73.33% of students in control group posttest have also severe pain and 53.33 % of students in experimental group pretest have severe pain, 76.66 of students in experimental group post have mild pain.

DISCUSSION

- The findings of the study were discussed below in relation to the objectives of the study and with the findings of other related studies reviewed by the investigator.
- The first objective was to assess the level of dysmenorrhea among BSc Nursing students in the experimental and control groups. The findings revealed that, in the pre-test, the majority of students in both experimental and control groups experienced moderate to severe dysmenorrhea. This indicates that dysmenorrhea is a common problem among nursing students and significantly affects their daily activities and academic performance.
- The second objective was to assess the effectiveness of Zingiber officinale (ginger) tea on dysmenorrhea among BSc Nursing students in the experimental group. The findings revealed that, after the administration of ginger tea, there was a marked reduction in pain scores in the post-test. Majority of students in the experimental group reported mild or no pain in the post-test when compared to the pre-test scores. The calculated t-value was greater than the table value at $p < 0.05$ level, indicating that ginger tea was effective in reducing dysmenorrhea.
- The reduction in pain observed in the experimental group may be attributed to the anti-inflammatory and analgesic properties of ginger. Ginger inhibits prostaglandin synthesis, which plays a major role in uterine contractions and menstrual pain. These findings are consistent with previous studies which reported that ginger is effective in relieving dysmenorrhea among adolescent girls and young women.
- The third objective was to find out the association between the level of dysmenorrhea and selected demographic and menstrual variables. Chi-square test was used to determine the association. The findings revealed that there was no significant association between the level of dysmenorrhea and selected demographic variables such as age, year of study, age at menarche, and duration of menstrual cycle. This suggests that dysmenorrhea is prevalent among nursing students irrespective of their demographic characteristics.
- The findings of the present study support the use of non-pharmacological interventions for the management of

dysmenorrhea. Ginger tea, being a simple, economical, and easily available home remedy, can be effectively used to reduce menstrual pain without causing adverse effects commonly associated with pharmacological therapies.

- Overall, the study findings indicate that *Zingiber officinale* tea is an effective intervention in reducing dysmenorrhea among BSc Nursing students. The results emphasize the importance of incorporating evidence-based complementary therapies into nursing practice to promote comfort and well-being among young women.[13-15]

RECOMMENDATIONS

- The study can be conducted on a larger sample to enhance the generalization of the findings.
- A similar study can be replicated among adolescents and women in different educational institutions and community settings.
- A comparative study can be conducted between *Zingiber officinale* tea and other non-pharmacological interventions for the management of dysmenorrhea.
- An experimental study can be carried out by comparing ginger tea with pharmacological management for dysmenorrhea.
- Health education and awareness programs can be organized to educate young women

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about the use of ginger tea as a safe and effective home remedy for dysmenorrhea.

- Further studies can be conducted to assess the long-term effects of ginger tea on menstrual pain and quality of life

CONCLUSION

The study concluded that the majority of BSc Nursing students experienced moderate to severe dysmenorrhea during the pre-test period. After the administration of *Zingiber officinale* (ginger) tea, a significant reduction in the severity of dysmenorrhea was observed in the post-test among students in the experimental group. Most of the participants reported mild or no pain following the intervention, indicating the effectiveness of ginger tea in managing menstrual pain.

The findings of the study revealed that the calculated t-value was greater than the table value at $p < 0.05$ level, confirming that *Zingiber officinale* tea was effective in reducing dysmenorrhea among BSc Nursing students. The study also found that there was no significant association between the level of dysmenorrhea and selected demographic and menstrual variables, suggesting that menstrual pain was prevalent irrespective of these factors.

Overall, the study highlights that ginger tea is a simple, safe, economical, and non-pharmacological intervention that can be effectively used to manage dysmenorrhea. Incorporating ginger tea as a complementary therapy can help improve comfort, reduce absenteeism, and enhance the quality of life among nursing students.

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