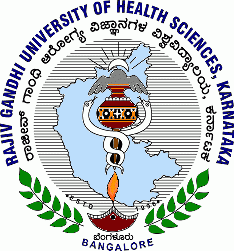
**“**A COMPARITIVE STUDY TO EVALUATE THE EFFECTIVENESS OF GINGER TEA VERSES HOT WATER ON DYSMENORRHEA AMONG NURSING STUDENTS AT KOLAR**”.**

**BY**

**MRS. V SUPRIYA**

## Dissertation submitted to the

**Rajiv Gandhi University of Health Science, Bangalore, Karnataka**



In partial fulfillment of the requirement for the degree of

# MASTER OF SCIENCE IN NURSING IN

# OBSTETRICS AND GYNAECOLOGICAL NURSING

**Under the guidance of**

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**2024**

**Rajiv Gandhi University of Health Sciences, Karnataka**

**DECLARATION BY THE CANDIDATE**

I hereby declare that this dissertation/thesis entitled **“**A COMPARITIVE STUDY TO EVALUATE THE EFFECTIVENESS OF GINGER TEA VERSES HOT WATER ON DYSMENORRHEA AMONG NURSING STUDENTS AT KOLAR**”** is a bonafide and genuine research work carried out by me under the guidance of **Professor Punitha M, HOD& Professor, Department of Obstetrics and Gynecological Nursing, Sri Devaraj Urs College of Nursing, Tamaka, Kolar.**

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**ABSTRACT**

**“A COMPARATIVE STUDY TO EVALUATE THE EFFECTIVENESS OF GINGER TEA VERSUS HOT WATER AMONG NURSING STUDENTS, KOLAR.”**

**Background and objectives**

The most prevalent Gynecological issue affecting women of reproductive age globally is dysmenorrhea. The primary causes are the women's muscles contracting, which hurt and reduce oxygen and blood flow to the uterus. It's like having birth pangs. These spasms have the potential to be extremely painful and uncomfortable. .The dysmenorrhea is characterized by continuous spasmodic pain in the pelvic region. The lower abdominal region that initiates quickly before and during menstruation. It may persist for few hours or even in days. Other symptoms Dysmenorrhea include nausea, Vomiting, Dizziness, Headache, Irritability, Depressive and Diarrheal symptoms. Dysmenorrhea is mainly classified in to two categories. That is primary and secondary dysmenorrhea. Primary dysmenorrhea means it includes In the case of Pelvic disorders, this occurs without any associated pelvic pathology related Pelvic disorder to Psychogenic aspect. In dysmenorrhea Prostaglandins are chemicals that are formed in the lining of the uterus during menstruation. These prostaglandins are cause muscle contractions in the uterus, which cause pain and decrease blood flow and oxygen to the uterus. It is similar to labor pains, these contractions can cause significant pain and discomfort. Prostaglandins may also contribute to the nausea and diarrhea, that some women experience. Therefore, a study was carried out To assess the level of Dysmenorrhea among nursing students using modified Mc Caffery numerical pain scale, compare the Ginger tea consumption and Hot water consumption for dysmenorrhea after administration of intervention and find the association between the level of dysmenorrhea after intervention with the selected demographic variables. By comparing pre-test and Post- test level of Dysmenorrheal pain score.

**PROBLEM STATEMENT**

“A comparative study to evaluate the effectiveness of Ginger tea verses Hot water for dysmenorrhea among nursing students, at Kolar.”

**OBJECTIVES OF THE STUDY**

1. To assess the level of Dysmenorrhea among nursing students using modified Mc Caffery numerical pain scale.

2. To compare the Ginger tea consumption and Hot water consumption for dysmenorrhea after administration of intervention.

3. To find the association between the level of dysmenorrhea after intervention with the selected demographic variables.

**HYPOTHESES**

**RH1-**There will be significant difference in dysmenorrheal pain among experimental group-I and II of nursing students before and after Ginger tea and Hot water.

**RH2-** There is a significant difference between ginger tea and hot water on dysmenorrhea among nursing students in Experimental group-I and experimental group-II.

**RH3-** There is a significant association between post test scores of dysmenorrheal pain among experimental group-I and II of nursing students with their demographic variables.

**METHODOLOGY**

For the present study, quasi experimental design was adopted. The dependent variable are Ginger tea versus Hot water for Dysmenorrheal pain among nursing students. The subjects consist of 64(32 Experimental –I and Experimental group-II) nursing students residing in the hostel of Sri Devaraj Urs College of Nursing by simple random sampling technique. The feasibility of the study refinement. The Dysmenorrheal pain was assessed with the M C Caffery Numerical pain scale. Ginger tea was given for Experimental group-I& Got water was given for Experimental group-II. Intervention was started 1st day of menstrual day to 3rd day of menstrual cycle twice a day. Posttest was done after intervention period of both experimental groups. the data gathered was analyzed by descriptive and inferential statistical method.

With regard to age, majority of nursing students in Experimental group-1(84%) belongs to (18-19) and 16% belongs to between the age group of (20-21). Experimental group-II (59%) belongs to the age group between (18- to19) and 25% of belongs to (20-21) and only 3% belongs to between the age group of (24-25) years.

With regard to Weight, majority of nursing students in Experimental group-1(3%) belongs to <40kg and (16%) belongs to between the Weight of (41-44 Kg) and (19%) belongs to 45- 50 kg, (62%) belongs to the weight of >50 kgs. Experimental group-II (3%) belongs to the weight of < 40kg and (6%) of between (41- 44Kg) and 22% of belongs to (45-50 Kg) and 66% belongs to between >50kgs.

With regard to religion, majority of nursing students in Experimental group-I(41%) belongs to

Hindu and (59%) belongs to Christian. Experimental group-II (22%) belongs to Hindu and (88%) belongs to Christian.

With regard to marital status, majority of nursing students in Experimental group-I and Experimental group-II (100%) belongs to Unmarried only.

With regard to Economic status , majority of nursing students in Experimental group-I (63%) belongs to Above poverty line and (37% ) belong to Below poverty line. in Experimental group-II (28%)belongs to Above poverty line and (72%) belongs to below poverty line.

With regard to type of diet, majority of nursing students in Experimental group-I (6%) belong to vegetarian and (57%) belongs to non-vegetarian and (37%) belongs to mixed diet. In experimental group-II only (12%) belongs to vegetarian, (44%) belongs to non- vegetarian and (44%) belongs to mixed diet.

With regard to type of food craving during menstrual cycle, majority of nursing students in Experimental group-I (37%) is having craving of sweet foods and (63%) is having a craving of spicy foods. In Experimental group-II belongs to (44%) is having of food craving of sweets, (56%) having a food craving of spicy foods.

With regard to pretest, the obtained mean value of Posttest in the Experimental group-I Mean was 5.28 with SD of 1.54where as in the Experimental group-II Dysmenorrheal pain the mean value was 1.12 with SD of 1.12. In this study Ginger tea is effective for to reduce the Dysmenorrheal pain compared the Hot water. To support this finding there were no studies. This shows that ginger tea is effective for the Dysmenorrhea compared the than hot water among Nursing students.

With regards Independent t- test Experimental group- I mean value

The Questions related to Dysmenorrhea is the overall n=(64) 32 in each group. Experimental group-1and experimental group-II df is 62 for both groups. Both groups independent t- value is for both groups 7.377, p value 0.390. Statistically significance of the both groups.

The fourth objective was to find the association between the levels of dysmenorrhea after intervention with the selected demographic variables. The level of dysmenorrhea pain statistically not significance for this fisher exact test done the P value is 1.000. There was no significant association between weights of nursing student. Statistically not significant with x2 = 0.794, P value is 0.3730. There is no significant with the religion x2= 0.550, P value is 0.4583 statistically not significant. There was no association between economic status x2 = 0.372, P value is 0.5421 statistically not significant. The association between type of diet for these fisher exact test done P value= 1.0000 statistically not significant. There was no association food cravings x2=2.669, P value = 0.1023. This is association of experimental group 1.

Experimental group 2 there was statistically not significant association between age for this fisher exact test done P value=0.026, There is no association between weight x2=0.794, P value=0.3730. There is no association religion fisher exact test than P=0.0236 statistically not significant. There is no association between type of diet.P=0.2923 next ther is no association between food cravings P value=1.40 statistically not significant.

**CONCLUSION**

The overall finding study revealed that utilization of fresh of Ginger tea is significantly effective in reducing the Dysmenorrheal pain among nursing students.

**Key words: Hostel residing Nursing students, Dysmenorrheal pain, effectiveness.**

**LIST OF ABBREVATION**

|  |  |
| --- | --- |
| **SLNO** | **ABBREVATION** |
| 1. | WHO: World health organization |
| 2. | F: Frequency |
| 3. | %: Percentage |
| 4. | SD: Standard Deviation |
| 5. | DF: Degree of freedom |
| 6. | NS: Not significant |
| 7. | SS: Statistically significant |

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**INTRODUCTION**



**INTRODUCTION**

**“PAIN IS TEMPORARY BUT QUTTING LASTS FOREVER”**

**Lance Armstrong**

Every phase of human existence has been defined by cycles and stages of development. Women's life journeys began with a variety of adjustments. In the lives of women, it is more significant. It generally starts at the adolescent stage. The stage of adolescence marks the point in an individual's development when they shift from childhood to adulthood. The two major events that occur at the same time are the onset of secondary sexual characteristics and menarche.1 The change from total dependence towards associated independence during adolescence is marked by an acceleration of physical, emotional, endocrine, and intellectual growth. Adolescence is a time when a female prepares physically, emotionally and psychologically for a healthy pregnancy. 2

Adolescent girls health is important for the future generation as well as for the girl herself. In India, approximately 25% of the population is under 20 years old. The commencement of menarche in girls, which is commonly linked to issues with heavy bleeding and irregular menstruation. One of the most important physiological changes that teenage girls experience is dysmenorrhea. One of the most common issues that teenage girls may experience is dysmenorrhea.2

The word "dysmenorrhea" comes from Greek. Dys, which means painful menstruation, menstruation, and orrhea, which means flow or oder. Meaning of "Monthly painful bleeding" as applied globally. Up to 50% of women who menstruate suffer from this gynecological issue, which typically manifests six to twenty-four months after menarche.3

The most prevalent gynecological issue affecting women of reproductive age globally is dysmenorrhea. The primary causes are the women's muscles contracting, which hurt and reduce oxygen and blood flow to the uterus. It's like having birth pangs. These spasms have the potential to be extremely painful and uncomfortable. Some women may also have nausea and diarrhea, which could be attributed to prostaglandins.4

The dysmenorrhea is characterized by continuous spasmodic pain in the pelvic region. The lower abdominal region that initiates quickly before and during menstruation. It may persist for few hours or even in days. Other symptoms Dysmenorrhea include nausea, Vomiting, Dizziness, Headache, Irritability, Depressive and Diarrheal symptoms. Dysmenorrhea is mainly classified in to two categories. That is primary and secondary dysmenorrhea. Primary dysmenorrhea means it includes In the case of Pelvic disorders, this occurs without any associated pelvic pathology.in few studies have related Pelvic disorder to Psychogenic aspect.5

In dysmenorrhea Prostaglandins are chemicals that are formed in the lining of the uterus during menstruation. These prostaglandins are cause muscle contractions in the uterus, which cause pain and decrease blood flow and oxygen to the uterus. It is similar to labor pains, these contractions can cause significant pain and discomfort. Prostaglandins may also contribute to the nausea and diarrhea, that some women experience.6

The pain of dysmenorrhea is crampy. This is usually located in lower abdomen and above the pubic bone. Some women also have severe pain in the back or thighs. The pain usually begins just before day or as menstrual bleeding day it begins and gradually it is diminishes with in one to three days. Pain usually occurs intermittently, ranging from mild to disabling. The diagnosis of dysmenorrhea is based upon a woman's medical history and physical examination.7

The Physical examination of women with dysmenorrhea: Dysmenorrhea Women should have to do complete abdominal and pelvic examination. During the examination, the health care provider will assess the size and shape of the vagina, cervix, and uterus, and attempt to feel the ovaries. An internal pelvic examination may not necessary in adolescent girls.8

Factors influencing about Dysmenorrhea includes Associated risk factors for dysmenorrhea include the following:

* Age (commonly at the age up to 30 years)
* Smoking
* Attempts to lose weight
* Higher or lower than normal body mass index
* Depression/anxiety
* Longer menstrual cycles
* Younger age at menarche
* Null parity
* History of sexual assault
* Previous cesarean section with incomplete uterine scar healing (uterine niche)
* Longer and heavier menstrual flow
* Family history of dysmenorrhea
* Disruption of social networks

**FIGURE-1 SHOWED THAT RISK FACTORS OF THE DYSMENORRHEA**

For this dysmenorrhea so many alternative therapies are available. Alternative therapies have gained important role in this context. There are so many home remedies there to get relief from primary dysmenorrhea. In that some of them are following like Dietary modifications, heat application, yoga, exercises, therapies and herbs. Numerous researches are being performed which is more focuses on complementary and alternative interventions for dysmenorrhea. This includes the use of muscle relaxation therapy, magnetic therapy, reflexology, hand acupuncture, aroma therapy, and acupressure 9.

Ginger is the most ayurvedic medicine in the world. . Ginger contains “Gingerol,” it contains highly potent anti- inflammatory compounds. Ginger is evidence-based natural health remedy. Ayurvedics are consider ginger is the queen of herbs available. as it is a complete medicine molded. It self-responsible for alleviating anti- inflammatory compound responsible for alleviating join and muscle pain. Ginger helps to women effectively reduce the pain associated with dysmenorrheal health remedy .10

In India traditional variety of folk medicine are used to treat the dysmenorrhea. Now a days, day to day minor disorders are include such as like Dysmenorrhea ,indigestion , nausea . among various folk medicines. Ginger is known to have out of most benefits. Ginger has been used for the treatment of dysmenorrhea. In this ginger is having like spasmodic , anti inflammatory and circulatory stimulant nature.11

**NEED FOR THE STUDY**

Adolescence girls has been recognized as a special period which signifies the transmission from girlhood to adult hood. This transitional period is marked with the onset of menarche, In important milestone. menstruation is a normal physiological process that begins during adolescence and may associated with various symptoms occurring before or during the menstrual flow.1

Dysmenorrhea, defined as painful cramps that occur with menstruation, is the most common “Gynecological” problem in women of all ages. One of the most common cause for pelvic pain. Estimates of the prevalence of dysmenorrhea vary widely (16.8% to 81%), and rates as high as 90% have been recorded. Symptoms typically begin in adolescence and may lead to school and work absenteeism, as well as limitations on social, academic, and sports activities.2

Dysmenorrhea or pain in the lower abdomen experienced during menstruation is the most common reason to seek gynecologic care, occurring in 50–90% of the female population. In a systematic review and meta-analysis of studies including over 20,000 young women from 38 different countries, the prevalence of dysmenorrhea was 71.1%. Amongst adolescents, the most common cause of dysmenorrhea is primary dysmenorrhea, which is defined as menstrual pain in the absence of pelvic pathology. Primary dysmenorrhea typically presents 6–12 months following menarche and is thought to be mediated by uterine contractions as well as prostaglandin release. In India, a telephone survey of 2721 female individuals aged 18 years and older conducted by Burnett et al identified that 60% of the 1546 respondents who reported experiencing menstrual periods met the criteria for primary dysmenorrhea.12

Dysmenorrhea is considered primary in the absence of underlying pathology. Onset is typically six to 12 months after menarche, with peak prevalence occurring in the late teens or early twenties. Secondary dysmenorrhea results from specific pelvic pathology. Endometriosis is the most common cause for secondary dysmenorrhea. The incidence is highest among girls 25 to 29 years of age and lowest among women older than 44 years. Black women have a 40% lower incidence of endometriosis compared with white women.13

Characteristic symptoms of primary dysmenorrhea include lower abdominal or pelvic pain with or without radiation to the back or legs, with initial onset six to 12 months after menarche. Pain typically lasts eight to 72 hours and usually occurs at the onset of menstrual flow. Other associated symptoms may include low back pain, headache, diarrhea, fatigue, nausea, or vomiting.[1](https://www.aafp.org/pubs/afp/issues/2014/0301/p341.html#afp20140301p341-b1) A family history may be helpful in differentiating primary from secondary dysmenorrhea; patients with a family history of endometriosis in first-degree relatives are more likely to have secondary dysmenorrhea.13

Dysmenorrhea is considered primary in the absence of underlying pathology. Onset is typically six to 12 months after menarche, with peak prevalence occurring in the late teens or early twenties. Secondary dysmenorrhea results from specific pelvic pathology. Endometriosis is the most common cause of secondary dysmenorrhea. The incidence is highest among girls 25 to 29 years of age and lowest among women older than 44 years. Black women have a 40% lower incidence of endometriosis compared with white women. 14

The prevalence of dysmenorrhea world wide varies greatly in different regions, age groups. The overall prevalence is 15% to 94%. The prevalence in married women is generally lower than that in unmarried women.15

George and Bhaduri discovered that dysmenorrhea is a prevalent issue in India, with a prevalence rate of 87.7%.Prevalence of dysmenorrhea was 70.2%. Majority of the subjects experienced pain for one or 1-2 days during menstruation. 23.2% of the dysmenorrheic girls experienced pain for 2-3 days.16

Dysmenorrhea may affect more than 50% of menstruating women, and its reported prevalence has been highly variable (eg, 45-95% ). A survey of 113 patients in a family practice setting showed a prevalence of 29-44%, but figures as high as 90% in women aged 18-45 years have been reported.14

Adolescent girls are a valuable resource, especially in India where female children are often ignored. Menarche is a stage in the intricate process of maturing. Menstruation can begin at any age between 9 and 18 years old, with the average age in the United States being approximately 12 years and 8 months. In India, however, this age is slightly lower and has been recorded to be around 12 years. The age at menarche reveals numerous socioeconomic, environmental, dietary, and geographic variations within societies.14

Dysmenorrhea is the most common gynecological problem in the worldwide among women of childbearing age.1 Dysmenorrhea is responsible for substantial financial losses, it may extends beyond the individual level for the future generations. Due to the cost of medications, medical care, impaired daily activities and decreased productivity. Among women affected by dysmenorrhea. About 15%–20% of them were unable to perform their normal day-to-day activities during each menstrual period due to dysmenorrhea.16

As per the results of a large scale survey conducted across India in 2020, about 23 percent of women respondents between the ages of 20 and 29 years suffered from menstrual problems. The number of woman suffering from menstrual problems had decreased with progressing age in 2020 across the country.15

Prevalence of dysmenorrhea was 70.2%. Majority of the subjects experienced pain for one or 1-2 days during menstruation. 23.2% of the dysmenorrheic girls experienced pain for 2-3 days. The most common symptom in both dysmenorrheic and non dysmenorrheic girls during the menstrual periods was tiredness and second most prevalent symptom was back pain.17

First-line treatments for primary dysmenorrhea include non-steroidal anti-inflammatory medications (NSAIDs) and hormonal contraceptive pills . NSAIDs show especially high efficacy for primary dysmenorrhea because they are prostaglandin synthetase inhibitors , and menstrual pain occurs in part due to the release of prostaglandins. Testing for gynecological and hormonal conditions is recommended among girls whose pain does not respond to NSAIDs and hormonal contraceptives. However, these first-line treatments are not universally available or acceptable across settings.18

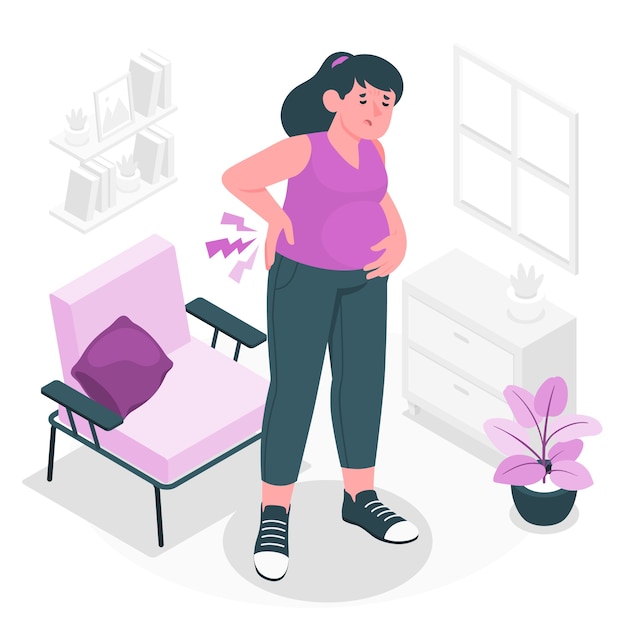
In research from SSA, the proportion of women and girls seeking medical care for menstrual disorders ranges from 9%-16%, and many women and girls report “putting up with” pain. Dysmenorrhea management strategies reported by girls in SSA have included resting, medication, herbal treatments, dietary changes, heat applied to the abdomen, exercise, and increased water intake. Across five studies, the use of medications such as analgesics ranged from 43% to 64%, with 55% of girls in Tanzania with dysmenorrhea taking medications for menstrual pain. In many cases, the non-NSAID analgesic paracetamol (i.e., acetaminophen), was the most common drug used, which is not a first-line treatment Few girls in SSA report using hormonal contraceptives to manage menstrual pain. There is evidence that sociocultural factors may serve as barriers to accessing medications: in Uganda, adolescent girls reported limited access to pain medications and beliefs that medications can be harmful to the body.19

According to studies , in the USA, around 140 million working hours are lost annually due and works absenteeism and poor quality of life dysmenorrhea. Even those women who desire to work during their cramps have been shown to have lower work output. Another studies shown that , in Japan, an estimated US$4.2 billion economic losses occur as a result of dysmenorrhea. Besides, it remains an important cause of recurrent short-term school and works absenteeism and poor quality of life dysmenorrhea.4

Alternative therapies have gained importance in this. Alternative therapies have gained importance in this context. There are many home remedies known to get relief from primary dysmenorrheal pain.10

A study was conducted by shetal G, The objectives of this study Assess the level of dysmenorrhea among nursing students, Determine the effectiveness of ginger tea on dysmenorrhea among nursing students, Find the association between level of dysmenorrhea before the administration of ginger tea and demographic variables. The research a study design was quasi-experimental design. The sample size is 50 students with moderate and severe menstrual pain as per numerical pain rating scale. Ginger tea was prepared by the researcher and administered 120 ml to the subjects; on the first 2 days of menstruation in the morning and night after breakfast and dinner, respectively. Level of different aspects of pain was assessed before the administration as well as 2 hours after administration of ginger tea using Pain Quality Assessment Scale. Pre- and post-test were taken before as well as 2 hours after administering the drink. Analysis done with Mann– Whitney U test done. The analysis showed that there was a significant difference in level of pain between the experimental and control groups (P < 0.05). the results of Wilcox on signed-rank test showed that there was a significant difference in pain measurements before and after the administration of ginger tea (P < 0.05). Chi-square test and likelihood ratio were used to find the association between baseline dysmenorrhea with demographic and clinical variables. It was found that there is no significant association (P > 0.05). conclusion was The findings indicate that ginger tea was effective in reducing menstrual pain.Pain is a natural mechanism of the body. It is unavoidable in most of the conditions. But the severity of pain can be reduced with appropriate interventions. The world is moving more toward natural therapies to cope up with pain. Dysmenorrhea is one such type of pain, which is inevitable, but with appropriate interventions can be reduced to an extent .13

OBJECTIVES



OBJECTIVES

This chapters deals with the statement of the problems, objectives of the study, operational definition ; Assumption hypothesis and conceptual frame work, which provides a frame of reference. The statement of the problem selected for the study is follows:

**STATEMENT OF THE PROBLEM**

A comparative study to evaluate the effectiveness of Ginger tea verses Hot water for dysmenorrhea among nursing students, at Kolar.

**OBJECTIVES OF THE STUDY**

1.To assess the level of Dysmenorrhea among nursing students using modified Mc Caffery numerical pain scale.

2. To compare the Ginger tea consumption and Hot water consumption for dysmenorrhea after administration of intervention.

3.To find the association between the level of dysmenorrhea after intervention with the selected demographic variables.

**1.Assess:**

In this study it refers to the way of find out the level of pain among nursing students.

**2.Effectiveness:**

In this study it refers to the positive outcome and reduction of post test pain score in experimental Group after consuming Ginger tea or hot water ..

**3.Ginger tea**

In this study it refers to preparation of tea by boiling 2 gm piece fresh ginger thinly sliced in 150 ml water along with mint leaves and boiled for ten minutes.

**4.Hot water**

In this study it refers to preparation of boiling the water in 400 C assessed with bath thermometer.

**5.Dysmenorrhea**

In this study it refers to cramping pain from moderate to severe abdominal pain during first 3 days of menstruation .

**6.Nursing students**

In this study it refers to the I B.Sc Nursing Students at Sri Devaraj Urs College of Nursing at Kolar.

**Assumption**

1 Dysmenorrhea is a painful menstruation.

2 Dysmenorrhea occurs During or shortly before menstruation.

3 Ginger act as anti-inflammatory and contains gingorols and shagaols which inhibit the prostaglandin synthesis.

4. Hot water is a muscle relaxant and it improving the blood circulation.

**HYPOTHESES**

**RH1-**There will be significant difference in dysmenorrheal pain among experimental group-I and II of nursing students before and after Ginger tea and Hot water.

**RH2-** There is a significant difference between ginger tea and hot water on dysmenorrhea among nursing students in Experimental group-I and experimental group-II.

**RH3-** There is a significant association between post test scores of dysmenorrheal pain among experimental group-I and II of nursing students with their demographic variables.

**De- limitations**;

Nursing students with Moderate and severe dysmenorrhea.

The study is restricted to nursing students in Sri Devaraj urs College of Nursing Hostel, Kolar.

Comparing the effectiveness ginger tea verses hot water on dysmenorrheal pain.

Study period is limited 12 weeks only.

**CONCEPTUAL FRAMEWORK:**

Conceptual FRAME WORK IS A THEORETICAL approach to the study of problems that are scientifically based and emphasized the selection and clarification of its concepts. A conceptual frame work states functional relationship between events and is not limited to statistical relationships.

**CONCEPTUAL FRAME WORK BASED ON IMOGENE KINGS GOAL ATTAINMENT THEORY FOR THE PRESENT STUDY**

Theoretical framework provides clear description of variables suggesting ways or method to conduct the study and guiding the interpretation, evaluation and integration of study findings.

A theoretical framework can be defined as set of concepts and assumption that integrates them into meaningful configuration.

This study is based on Imogene kings goal attainment theory,(1997) which would be relevant to reduce the level of dysmenorrheal pain by providing Ginger tea and hot water among nursing students.

Imogene kings system is an “open” system. In this system , humans are in constant interaction with their environment. According to Imogene King each individual on this system has good directed choice of perceived alternatives in made and acted by individuals or groups to attain a goal. It is a process of human interaction in which two people who are usually strangers come together in a health care organization to help and to helped to maintain a state of health that permit, functioning the roles.

The main concepts of Imogene Kings open system are:

**Perception**

A process of organizing, interpreting and transforming information from sense data and memory that gives meaning to ones experience represents ones image of reality and influences ones behavior.

**Judgment:**

Each member of the dyad perceives the other and makes judgment for goal attainment.

**3. Action**

Each member dyad makes judgment and there by action follows attain goal.

**4.Mutual goal setting**

It is an activity that includes the client and family when appropriates in prioritizing the goal care and in developing a plan of action to achieve the goal**.**

**Interaction**

**The acts of two are more persons in mutual presence a sequence of verbal and nonverbal behaviors that are goal directed.**

**Transaction;**

A process of interaction in which human beings communicate with the environment to achieve goal directed human behavior. In this model human are in constant interaction with their environment. Adjustment to the life and health are influenced by individual by individual interaction with the environment. each human being perceive the world as a total person in making transaction with the individual and things in the environment.

**APPLICATION OF CONCEPTUAL FRAMEWORK BASED ON IMOGENE KINGS GOAL ATTAINMENT THEORY FOR THE PRESENT STUDY**

The main study concepts in Imogene Kings open system are:

**Perception**

In this study the researcher the subjects were come together for an interaction, a different set of perception to exchange. The researcher perceived that nursing students dysmenorrheal pain reducing the pain, decreased activity performance and poor social interaction.

**Judgment**

The researcher wants to reduce the level of dysmenorrheal pain.

**Action**

In this study, during the action phase, investigator prepares premenstrual syndrome rating scale and to identify the level of dysmenorrheal pain among nursing students in experimental group-I and experimental group-II.

**Mutual goal setting**

It is an activity that includes the nursing students and their when the appropriates in prioritizing the goal care and in developing a plan of action to achieve the goal. The investigator administered ginger tea (Experimental group-I) and Hot water (Experimental group-II) to the nursing students on first day of menstrual cycle twice a day until 3 days.

**INTERACTION**

In this study the researcher and samples interact with each other.

After administered ginger tea (Experimental group-I) and Hot water (Experimental group-II), there were changes in in the level of Dysmenorrheal pain.

Ginger tea is having the chemical of gingirol and shagirol its act like anti inflammatory nature, its going to reduce the pain.

Hot water is going to decrease the blood circulation and decrease the dysmenorrheal pain.

**Transaction**

The transaction between the subjects researcher, post test was conducted by using Mc Caffery pain scale to assess and compare the dysmenorrheal pain among experimental group-I and experimental group-II among nursing students. The goals is achieved there is reduce the Dysmenorrhea pain among nursing students in both groups.

**STATEMENT PROBLEMS**

“A Comparative Study to Evaluate the Effectiveness of Ginger tea Versus Hot Water for Dysmenorrhea among Nursing Students at , Kolar.”

**OBJECTIVES OF THE STUDY**

1 To assess the level of Dysmenorrhea among Nursing students by using modified Mc.Caffery Numerical pain scale.

2. To compare the effectiveness of ginger tea consumption and hot water consuming in reducing the dysmenorrheal pain among Nursing Students.

3. To find the association between level of dysmenorrheal after intervention with the selected demographic variables.

**NULL HYPOTHESIS**

**H01:**There will be significant reduction in post mean score of dysmenorrheal among experimental group .

**H02****:** There will be significant association between the severity of dysmenorrhea among college students with selected socio demographic variables .

**OPERATIONAL DEFINITION**

**Assessment:**

In this study, it refers to the Measuring the level of Dysmenorrheal pain by using Mc Caffery Numerical pain scale.

**Effectiveness:**

In this study, it refers to the positive outcome and reduction of post test pain score in experimental groups after consuming Ginger tea or hot water ..

**Ginger tea**

In this study, It refers to preparation of Ginger tea, In 150 ml of water ,2gms of fresh ginger sliced boiled for 10 minutes and adding 2 spoons of sugar

**Hot water**

In this study, It refers to preparation of boiling the water in 400 C.

**Dysmenorrhea**

In this study, It refers to cramping pain before or shortly onset of menstruation.

in this study from moderate to severe abdominal pain during first 3 days of menstruation .

**Nursing students**

In this study, It refers Iyear Bsc[N] Students those who are residing in the Sri Devaraj Urs Nursing Hostel.

**Assumption**

1 Dysmenorrhea is a painful menstruation.

2 Dysmenorrhea occurs during or shortly before3 days of menstruation.

3 Fresh Ginger contains Natural chemicals gingorols and shagaols & also it as anti-inflammatory properties that inhibit the prostaglandin synthesis.

4. Consumption of Hot water it as muscle relaxant properties and helps in improving the blood circulation.

**De- limitations**;

Study period is limited 12 weeks only.

The study is restricted to I year BSc Nursing students residing in Hostel.

**Material and Methods**:

S**ource of the data:**

Nursing college students who are having moderate and severe dysmenorrhea in Sri Devaraj Urs College of Nursing .

**Research approach**:

Quantitative research approach

**Research Design**

Research design is experimental study.

**Variables under Study**;

**Dependent variables:**

The dependent variable in this study is Dysmenorrhea.

**Independent variables**:

The independent variable in this study is Ginger tea and hot water.

**Setting :**

The study will be conducted among nursing students at kolar.

**Population**:

Moderate and severe Dysmenorrhea Nursing students .

**Sample and sample Size**:

the sample size was 64 (32 Experimental group-I, Experimental group-II) who are the inmates of SDUCON.

FORMULA FOR SAMPLE ESTIMATION n = Z2pq

d2 2 score at

Z:95% confidence level= 1.96

P:prevalence of dysmenorrhea=79%

q;100-p=21 d=absolute error=10%

The sample size contains of 64 among nursing students, 32 in control group, 32 in experimental group nursing students, Kolar

**Sample technique:**

Simple random techniques

**Sampling Criteria:**

**Inclusion Criteria**:

1 Adolescent Girls Who are having regular menstrual cycle.

2. Adolescent Girls who are between the age group of 18-24 years .

3. Adolescent Girls who experience’s moderate to severe dysmenorrheal pain.

**Exclusion criteria:**

1 Adolescent Girl who are taking treatment for dysmenorrhea.

2. Adolescent Girl who are not willing to participate in the study.

**Data collection tools**:

It consist of two sections.

**Section A: Socio Demographic profile.**

**Part- I**

Socio demographic variable like age, weight, religion, type of pain, severity of the bleeding.

**Part –II**

Questionnaires to assess the level of knowledge on dysmenorrhea.

**Part – III**

. McCaffery numerical pain scale using Images.

Questionnaires : To assess the severity of Dysmenorrhea

**Method of data collection**

**Step 1**

The ethical clearance will be obtain from institutional ethical committee.

**Step 2**

Formal permission for data collection were obtained from the authority of concerned college.

**Step 3**

Total 64 sample were selected on the basis of inclusion and exclusion criteria .

**Step 4**

experimental group dividing into two A and B group A we are providing ginger tea and group B hot water.

**Step 5**

Pretest conducted on the 1st day of menstruation to assess the severity of dysmenorrhea ,

**Step 6**

Ginger tea [100ml] will be administered for experimental group for each time [ morning and afternoon]. Before the menstruation 2 days and , On the first 3 days of menstruation .

**Step 7**

Ginger tea providing for first 32 members and Hot water providing for second 32 members .

**Step 8**

Post test will be conducting for both group on third day using the pain rating scale .

**RESEARCHER**

Mutual goal

To reduce the menstrual pain by administering ginger tea for first 3 days of menstruation two times morning and evening.

**Interaction**

1.Pre treatment assessment of level of Menstrual pain experimental group-1.

2. Administer Ginger tea who those who have moderate and severe menstrual pain.

3. post treatment assessment of menstrual pain.

Experimental group I

Reduction of menstrual pain

Perception

Menstrual pain

Experimental Group 1

Experimental Group 1

Reassessment

JUDGEMENT

Reduce the level of menstrual pain

Action

Ginger tea administration

Compare the effectiveness of experimental Group I & Group II

Action

Hot water administration

**NURSING STUDENTS**

Transaction

Menstrual pain

**Mutual goal**

To reduce the menstrual pain by administering Hot water for first 3 days of menstruation for two times morning and evening.

**Interaction**

1.Pre treatment assessment of level of menstrual pain experimental group-2.

2. Administer Hot water who those who have moderate and severe menstrual pain.

3. post treatment assessment of menstrual pain.

JUDGEMENT

Reduce the level of Menstrual pain

**Experimental group**

Reduction of menstrual pain

Perception

Menstrual pain

**MODIFIED CONCEPTUAL FRAMEWORK BASED ON KINGS GOAL ATTAINMENT** THEORY-1997

Review of Literature



**Review of literature**

**Studies related to Ginger tea:**

The study was conducted by Rinzu M, Efficacy of Ginger in the Treatment of Primary Dysmenorrhea: A Systematic Review and Meta-analysis. Objectives of the study is effectiveness of ginger for pain duration and its severity among women with primary dysmenorrheal. Method of using for data collection through structured questionnaire. This study was conducted among 201 among nursing students. analysis reports shows that mean difference [MD] = 2.67, 95% CI = 3.51-1.84, P = 0.0001, I2 = 86%), although it was found that ginger and NSAIDs were equally effective in pain severity (risk ratios [RR] = 1.15, 95% CI = 0.53-2.52, P = 0.72, I2 =77%). We have not observed any significant difference between ginger and placebo on pain duration among primary dysmenorrhea women (MD = -2.22, 95% CI = -7.62-3.18, P = 0.42, I2 = 56%). The finding in this study has verified the possibility of ginger efficacy in the treatment of primary dysmenorrhea, though no/small side effects have been identified and its use is associated with health benefits. Ginger is easily accessible due to its low cost. It can also be commonly used in the treatment of primary dysmenorrheal.4

A study was conducted by Ana A S, Interference and Impact of Dysmenorrhea on the Life of Spanish Nursing Students. The main objectives of the study is to identify the degree of interference of dysmenorrhea on daily life and its impact on academic performance among Spanish nursing students, and to explore the reasons for presentation. sample size is 261 nursing students. Data were collected using a self-administered questionnaire. The analysis done with the chi square tests, chi-square linear trend, Student’s t-test, one-way analysis of variance of polynomial contrasts, and post hoc tests for the bi-variety analysis were used to compare the participants’ responses regarding their type of dysmenorrhea and pain intensity. In addition, a multivariate regression was performed to predict absenteeism. The answers to the open questions were analyzed using thematic content analysis techniques. We observed 62.8% of absenteeism and 92.7% of presenteeism due to dysmenorrhea. Absenteeism was observed to be 3.079 (confidence interval (CI): 95%1.724–5.499; p < 0.001) times more likely among women with severe menstrual pain, 2.513 (CI 95%1.314–4.807; p = 0.005) times more in those suffering from menstrual nausea and 1.936 (CI 95%1.098–3.411; p = 0.022) times more frequent in those suffering from diarrhea. The reasons for presenters were grouped into five categories: the pain was bearable, it is not a reason to be absent, others don’t consider it a reason to be absent, responsibility and guilt, and academic consequences. The conclusion of the study Dysmenorrhea can have a significant impact on academic performance. The concern among students about the academic repercussions and even feelings of guilt and incomprehension from others leads to high rates of presenteeism with potentially negative consequences for patient care.20

  The study was conducted by Mesfin T, The aim of the study provide an association between dysmenorrhea and academic performance among university students in Ethiopia. Further, the study attempts to determine the prevalence and associated risk factors of dysmenorrhea. A cross-sectional study was conducted from 1 April to 28 April 2019. A semi structured and pretested self-administered questionnaire was used to collect data. Sample size is 647.The prevalence of dysmenorrhea was 317 (51.5%). The educational status of father (adjusted OR (AOR) (95% CI) 2.64 (1.04 to 6.66)), chocolate consumption (AOR (95% CI) 3.39 (95% 1.28 to 8.93)), daily breakfast intake (<5 days/week) (AOR (95% CI) 0.63 (0.42 to 0.95)), irregular menstrual cycle AOR (95% CI) 2.34 (1.55 to 3.54)) and positive family history of dysmenorrhea AOR (95% CI) 3.29 (2.25 to 4.81)) had statistically significant association with dysmenorrhea. There was no statistically significant difference in academic performance among students with and without dysmenorrhea (F (3611)=1.276, p=247. Dysmenorrhea was a common health problem among graduating University students. However, it has no statistically significant impact on academic performance. Reproductive health officers should educate and undermine the negative academic consequences of dysmenorrhea to reduce the physical and psychological stress that happens to females and their families.21

A study was conducted by Mike, A Prevalence and Academic Impact of Dysmenorrhea in 21,573 Young Women: A Systematic Review and Meta-Analysis. Objective of the study is  systematic review and meta-analysis examines the prevalence of dysmenorrhea in young women and explores any impact it has on their academic performance and other school-related activities. This cross sectional study was conducted among 21,573 young women. Method of data analysis is used to random effects meta-analysis using and comprehensive meta-analysis .data collection is  search in Medline, Psych INFO, EMBASE, and Cumulative Index to Nursing and Allied Health Literature was carried out in June 2018.Thirty-eight studies including 21,573 young women were eligible and included in the meta-analysis. Twenty-three studies were from low-, lower middle-, or upper middle-income countries, and 15 studies were from high-income countries. The prevalence of dysmenorrhea was high 71.1% (N = 37, n = 20,813, 95% confidence interval [CI] 66.6–75.2) irrespective of the economic status of the country. Rates of dysmenorrhea were similar between students at school (N = 24, 72.5%, 95% CI 67.5–77.0) and at university (N = 7, 74.9%, 95% CI 62.9–84.0). Academic impact was significant, with 20.1% reporting absence from school or university due to dysmenorrhea (N = 19, n = 11,226, 95% CI 14.9–26.7) and 40.9% reporting classroom performance or concentration being negatively affected (N = 10, n = 5126, 95% CI 28.3–54.9): The prevalence of dysmenorrhea was high, irrespective of country, with dysmenorrhea having a significant negative impact on academic performance both at school and during higher education.22

A study was conducted by Jinu K R, effects of Ginger on dysmenorrhea among nursing students in India ,Madhya Pradesh. The study aimed to assess the effect of ginger tea on dysmenorrhea level; among nursing students. Materials and Methods: Study objectives included compare dysmenorrhea level among nursing students in the experimental and control group after posttest and find out the association between pre-test dysmenorrhea levels with selected demographic variables as age, education, family history of dysmenorrhea. Prevalence of dysmenorrhea was 79% of these 3% severe, 18% moderate and 58% were mild grade. sample size is 60. Out of 79/100 participants of dysmenorrhea 63.29% missed individual classes or their study affected, 31.64% had to take leave from work place and 51.89% reported social withdrawal during menstruation due to dysmenorrhoea.7.59% take medicines for pain relief. Conclusions: Dysmenorrhea is a very common problem among girls and it affects their quality of life and their productivity at work place. It is important to spread awareness about the causes and treatment of dysmenorrhea to avoid undue sufferings causing absenteeism from work and studies.23  .

A cross sectional study was conducted by s. Shalini, Pooja Godiyal Effectiveness of ginger tea on primary dysmenorrhea among early adolescent girls. The main objectives of the study was determine the effectiveness of ginger tea administration on dysmenorrheal pain among early adolescent girls. The study was conducted of Government Inter college, Mehuwala, Dehradun. The Quantitative research design was used for this study. Sampling method is Purposive sampling method is used Sample size is 60.. Material and methods are used for this study Self structured Socio Demographic questionnaires. Purposive sampling technique was used to collect data. Ginger tea was administered for 60 early adolescent girls by using 3gm of ginger slice boiled in 100ml of water till it remained half, i.e., 50ml. Data was collected by using Tool and Numerical Pain Rating Scale (NPRS). NPRS was administered two times a day up to three days, before administering ginger tea and 30 minutes after administration. Wilcoxon T test was used for to analyse the study findings. The Results was showed a statistically significant reduction in level of dysmenorrhea after ginger tea administration with p=0.001. A mean difference of 1.83±0.37 at day 1 (Wilcoxon T test- 7.47), 1.73±0.44 at day 2 (Wilcoxon T test- 7.62) and 1.82±0.53 at day 3 (Wilcoxon T test- 5.11) was found significant. Conclusion: The findings revealed that ginger tea is an effective method in reducing primary dysmenorrhea among adolescent girls.24

A study was conducted by [Nilakshi Bordoloi](https://typeset.io/authors/nilakshi-bordoloi-11ncrezw), [Nongmeikapam Monika](https://typeset.io/authors/nongmeikapam-monika-2lkls1j2po), [Sunday June Langstang](https://typeset.io/authors/sunday-june-langstang-2syb5uaa) a study to assess the effect of ginger tea on dysmenorrhea among b.sc nursing students in a selected college, guwahati, assam. The main objectives of the study was effectiveness of ginger tea for dysmenorrhea. The study was conducted college of nursing, Guwahati. The sample size of the study was 60. The material and methods of data collection for using structure questionnaires and numerical pain scale was used. Paired t- test was used to analysis the results. The result revealed that the mean difference of pre-test and post-test pain score was 4.77 which was statistically significant at pâ‰¤0.05 level of significance.The association findings of the study showed that demographic variables body mass index and age of menarche were found statistically significant association at p 0.05 level of significance with level of dysmenorrhea before the administration of ginger tea. The conclusion of the study On the basis of the findings the researcher was concluded that ginger tea is effective in reducing dysmenorrhea.25

A study was conducted by Savitri & Swari in the year of (2020). Effect of Spice Drinks (Red Ginger and Cinnamon) on Dysmenorrhea Pain. The aim of the study evaluate the effectiveness of ginger tea for dysmenorrhea. The sample size is 60 between the age group of 19-20 years. The research design was quasi experimental research design. Structured questionniares was used to collect the data. In this the sample was divided in to two groups one is experimental and control group. Paired t- test was used to analysis the data. The study found that a spiced drink consisting of red ginger, cloves, and cinnamon and given honey positively affected menstrual pain (dysmenorrhea) with the p-value. There is an effect of a spiced drink consisting of red ginger, cloves, and cinnamon and given honey on menstrual pain (dysmenorrhea). 26

A study was conducted by M., Naveed etal , Comparative Effect of Ginger and Vitamin E Supplements on Pain and Quality of Life among Females with Dysmenorrhea-A Randomized Controlled Trial. The aim of the study was compare the effect of ginger and vitamin E on pain Severity among females with dysmenorrhea. To compare the effect of ginger and vitamin E on quality of life among females with dysmenorrhea-A randomized controlled trial. The data collection method was randomized control group method as used. The sample size is 90. The method of data collection is self-structured questionnaires and vas scale was used. Sampling method is purposive sampling method. The anova test was used to analysis the data. The results shows that there is a significant correlation in the results of Vas scale throughout the study. The level of significance indicates that the VAS scale of pain showed various results in the pain levels of patients having ginger tea and vitamin E capsules for the pain management of menstruation of females. There is also a significance noticed in the placebo group which may lead us to believe that the mental satisfaction of patients also matters a lot. The researcher was concluded that Ginger tea and vitamin E supplements have a large effect on pain and Quality of Life among the females with Dysmenorrhea.27

A study was conducted by Mika oktarina, Nuril Agsari, Choralina Eliagita, The Effect of Administration of Ginger Decil Water on Reduce the Levels of Disminore Pain in Adolescent Women at SMAN 03 Bengkulu City. The aim of this study evaluate the effect of giving ginger water decoction to reducing the level of dysmenorrhea pain in young women in SMAN 03 Bengkulu City. This study was quasi-experimental research design. The sample size is 122. one Group pre and post-test design. The population in this study were 122 students of SMA Negeri 03 Bengkulu City, grades X and XI who experienced dysmenorrhea. Sampling method is used a purposive sampling technique of 16 female students. The data used is primary data. Data were analyzed using univariate and bivariate analysis with the Shapiro Wilk test and Wilcoxon Sign Rank test. The results of the study were obtained from 16 samples the average value of pain for the sample group before being given ginger decoction was 4.38 and for the group after being given ginger decoction was 3.38. Analysis results Wilcoxon Sign Rank Test obtained a value of z = -5.85 with a value of p = 0.000 < a = 0.05, so it was found that there was an effect of giving ginger water decoction to reducing the level of dysmenorrhea pain in young women at SMAN 03 Bengkulu City. The researchr concluded It is hoped that the school can work together with health workers in providing information about the benefits of ginger water decoction for menstrual pain, so that students' knowledge increases and can reduce dysmenorrhea pain when menstruation occurs.28

A study was conducted by Dangnanesh kinde, Edosa Jabesa Tolasa. Comparative Study on Ginger Supplement and Aerobic Exercise on Primary Dysmenorrhea: The Case of Debre Markos University Students, Amhara Regional State, Ethiopia. The objectives of the study evaluate the association between the ginger tea and aerobic exercises. The sample size is 40. Interventional group 1, and interventional group 2. The sampling technique was purposive sampling. Data collection method is self structured questinnaries. Duration of the study was 12 weeks. The paired t- test was used for analyse the data. The results of the study The data collected from subjects were analysed by SPSS version 20.0 and the comparison of mean value results were carried out by paired sample t-test. The level of significance was p ≤ 0.05%. Results: The finding of the present study indicates that MSQ test from pre to post test showed positive significant change for ginger supplement group. Also VAS pre to post test showed significant change (MD,0.900) for aerobic group and (MD,1.600) for ginger supplement group and BMI pre to post test showed (MD,0.725) for aerobic group and (MD, 0.642) for ginger supplement group. The result of the study showed that ginger group was more significant change than aerobic group in menstrual symptom questionnaires. Conclusion: It was concluded that 12 week ginger supplement and aerobic exercise had positive effect on primary dysmenorrhea to reduce pain during menstruation. Summary: Exercise causes to delay the start of prostaglandins gathering and reduced the menstrual pain by increasing endorphins and reducing stress and sympathetic nervous activity, and also by increasing the blood flow to the pelvic. Research suggests that compounds found in ginger may help to protect against the increases in inflammation, by inhibiting the body's production of prostaglandins (a class of pro-inflammatory chemicals involved in triggering the muscle contractions that help the uterus shed its lining). Treatments of primary dysmenorrhea in students with ginger tea and aerobic exercise for 12 weeks were significant effect on reducing intensity and duration of pain during menstruation and BMI. Ginger tea group shows more significant change than aerobic exercise group on reducing pain intensity during and before menstruation.29

A study was conducted by [Lavanya S](https://typeset.io/authors/lavanya-s-2d2oq5fcic), [Annie Annal M](https://typeset.io/authors/annie-annal-m-3zl28c57), [Umamaheswari R](https://typeset.io/authors/umamaheswari-r-209uanpefm), [Poongodi V](https://typeset.io/authors/poongodi-v-17ur6a5m) 8Effectiveness of Dried Ginger On Dysmenorrhea Associated Symptoms Among Adolescent Girls at A Selected College of a South Indian Town – A Non-Random Pre-Experimental Design Study. The study was conducted in Puducherry. The obectives of the study to assess the effectiveness of dried ginger on dysmenorrhea-associated symptoms among adolescent girls at a selected college, The sample size of the study was 60. Six doses of 500 mg of dried ginger were administered for 48 hours, followed by an assessment of pain scores, and the difference was noted. The fact that there was an association between demographic variables and the intensity of the disease was noted. In the pre-test mean pain score level was 5.2 ±1.2. Whereas in the post-test, after the administration of dried ginger, the mean pain score level was 4.1 ±3.97. The effectiveness was statistically tested by paired t-test (t=1.37), which was found to be highly statistically significant at p < 0.001. There is a significant association between Dysmenorrhea associated symptoms with selected demographic variables like Type of family and dietary pattern. Whereas the other demographic variables are not effective with dysmenorrhea-associated symptoms.30

A study was conducted by [Rizu Negi](https://typeset.io/authors/rizu-negi-3aecdpcfh2)1, [Suresh K Sharma](https://typeset.io/authors/suresh-k-sharma-35cp50p8ox)1, [Rakhi Gaur](https://typeset.io/authors/rakhi-gaur-5616hd0uj9)2, [Anupama Bahadur](https://typeset.io/authors/anupama-bahadur-3omij8stt3). The study was Efficacy of Ginger in the Treatment of Primary Dysmenorrhea: A Systematic Review and Meta-analysis. Effectiveness of ginger for pain duration and its severity among women with primary dysmenorrhea. The sample study was 60. Sample technique simple randomization was used data collection. We have analyzed clinical trials by comparing ginger with placebo and non-steroidal anti-inflammatory drugs in women with primary dysmenorrhea. Performed a meta-analysis of five trials examining ginger with placebo and other two randomized controlled trials comparing ginger with a non-steroidal anti-inflammatory drug (NSAID); it seems to be more helpful for relieving menstrual pain than a placebo (mean difference [MD] = 2.67, 95% CI = 3.51-1.84, P = 0.0001, I2 = 86%), although it was found that ginger and NSAIDs were equally effective in pain severity (risk ratios [RR] = 1.15, 95% CI = 0.53-2.52, P = 0.72, I2 =77%). Here not observed any significant difference between ginger and placebo on pain duration among primary dysmenorrheic women (MD = -2.22, 95% CI = -7.62-3.18, P = 0.42, I2 = 56%). Accessible information proposes that oral ginger can be a compelling treatment for primary dysmenorrhea. This meta-analysis strongly supports the requirement for high methodological quality consistency for upcoming trials.31

A study was conducted by [Dagnanesh Kinde](https://typeset.io/authors/dagnanesh-kinde-h3so5fftfm), [Edosa Jabesa Tolasa](https://typeset.io/authors/edosa-jabesa-tolasa-3j42b1y7th). The study was Exercise on Primary Dysmenorrhea: The Comparative Study on Ginger Supplement and Aerobic Case of Debre Markos University Students, Amhara Regional State, Ethiopia. The objectives of the study to analyse the association between the aerobic exercises and ginger tea. The sample size is 40 between the age group of 19-20. Sampling technique is purposive sampling technique was used. Ginger supplement group consumed ginger tea for five days per week with once a day and aerobic group underwent aerobic exercise three days a week within 60 minutes for 12 weeks. Pre and post test was conducted on variables such as VAS, MSQ and BMI. The data collected from subjects were analyzed by SPSS version 20.0 and the comparison of mean value results were carried out by paired sample t-test. The level of significance was p ≤ 0.05%. Results: The finding of the present study indicates that MSQ test from pre to post test showed positive significant change for ginger supplement group. Also VAS pre to post test showed significant change (MD,0.900) for aerobic group and (MD,1.600) for ginger supplement group and BMI pre to post test showed (MD,0.725) for aerobic group and (MD, 0.642) for ginger supplement group. The result of the study showed that ginger group was more significant change than aerobic group in menstrual symptom questionnaires. Conclusion: It was concluded that 12 week ginger supplement and aerobic exercise had positive effect on primary dysmenorrhea to reduce pain during menstruation. Summary: Exercise causes to delay the start of prostaglandins gathering and reduced the menstrual pain by increasing endorphins and reducing stress and sympathetic nervous activity, and also by increasing the blood flow to the pelvic.32

**STUDIES RELATED TO HOT WARER**

A study was conducted by [Mukhoirotin Mukhoirotin](https://typeset.io/authors/mukhoirotin-mukhoirotin-27u1d20qrq), [Siti Urifah](https://typeset.io/authors/siti-urifah-309tspv9ly) Using warm compresses to reduce IL-1β levels in dysmenorrhea: An evaluation of quasi experimental study. The aim of this study is determine the effect of warm compresses to reduce IL-1β levels in primary dysmenorrhea. Sample size is 24. Sampling technique is simple random technique. Research design used quasi experiment with pretest-posttest control group design and post test only control group design. Hot water bag were the equipment’s of this study. The instrument for measuring pain used NRS (Numeric Rating Scale), IL-1 β levels used the ELISA method. The data analyzed by using Wilcoxon test and Mann-Whitney Test with α ≤ 0.05. The results of study showed there was an effect of warm compresses on dysmenorrhea with a significant value (ρ) of 0.000 (p ≤ 0.05). There were significant differences of the intensity of menstrual pain and IL-1β levels between warm compress group vs. control group (p≤0.05). Warm compresses are effectively to reduce IL-1β levels on primary dysmenorrhea, it can be used as an alternative intervention to overcome complaints of primary dysmenorrhea.33

A cross sectional study was conducted by Aditi etal . A randomized controlled trial of excesses and hot water bottle in the management of dysmenorrhea in school girls of Chandigarh, India. The main aim of the study to estimate the prevalence of primary dysmenorrhea among school girls and to compare the impact of exercise and hot water bottle on the occurrence and severity of primary and to compare the impact of exercise and hot water bottles on the occurrence and severity of primary dysmenorrhea among the study population. Sample size is 128 girls are participated in this study. Experimental group and control group are used in this study. Comparison of baseline menstrual distress Questionnaires. Material and methods was used structured questionnaires scores and visual analogues scale for pain (VASA) scores were done with first, Second and Third month post test was conducted, Intervention post test score analysed mean, standard deviation and t- test done. Prevalence of dysmenorrhea is 60.8% .median age is 14 years. The results shows that the mean score was decreased from (14.53 – 7.85) and from 14.92- .16 at 3 months , in the exercise and both hot water bottle group respectively. The conclusion was both exercise and hot water bottle can be used in dysmenorrhea girls in home setting to prevent relief from pain and menstrual distress.34

A study was conducted by Warm water foot bath improves dysmenorrhea and heart rate variability in college students: a randomized trial. The main aim of the effect of warm- water foot bath in improving dysmenorrhea has been rarely investigated. The study aimed to examine whether a warm –water foot both effectively reduced dysmenorrhea pain and improves the autonomic nervous system(ANS) activity. The randomized control trail was registered at clinical trails. Sample size is 68 girls are participated in this study. Experimental group and control group are used in this study. Comparison of baseline menstrual distress self structured Questionnaires was used for the data collection. Material and methods was used McGill pain scale structured questionnaires scores and visual analogues scale for pain (VASA) scores were done and (HRV) was measured I ANC activity and reduced the for assessment. A warm water bath for 20 minutes on menstruation days1ans 2 is beneficial in improving the pain among college students with Dysmenorrhea.35

A study was conducted by D. R. Shankar s. dr. Ani G K, .effectiveness of hot application on dysmenorrhea. The main objectives of the study to assess the level of dysmenorrhea before and after hot application to compare the effectiveness of level of dysmenorrhea and association the level of dysmenorrhea with there demographic variables. The sample size is 30, the study design was pre-experimental, sampling techniques is purposive sampling techniques, in this study results pre and post-adolescent girls 53.33% had very severe pain, 33% had severe pain and 6.7% had worst pain but in post test 63% girls had no pain thirty hand miled pain and only .6 hand moderate pain, the analysis was done with parity test level of 20.93 which is significant at p<0.05 level, The study conclusion was the study findings revealed that there was a significant reduction in level of dysmenorrhea among adolescent girls after giving hot application with highlights the health education program is to be ventured and to be installed in areas of health care. 36

A study was conducted by Bertrand G, Mona S, Thierry B, Eric B. dysmenorrhea practices, pills or hot water bottle. The objectives of the study to effectiveness of hot water and oral pills for dysmenorrhea. The sample size was 2400 and sample technique purposive sampling technique in this results of the study the response rate was 22% the outcome of the study frequent treatments used are ibuprofene 53%, paracetamol 51%, hormonal contraception 41%, hot water bottle or hot pad 35%, food supplement or medicinal plants 23% physician only discuss a tiny population of dysmenorrhea treatment in their consultation because it is mostly a matter of self treatment, with the family has the source of information in 80% cases. Rather surprising because not mentioned in most official guidelines, hot water bottle or hot pad appears has the treatment followed by the best reported outcome satisfactory in 92% of uses.37

A study was conducted by Nurrahmaton, Dewi S the objective of the study to evaluate the effectiveness of worm compression to the reduction of menstrual pain among adolescent girls. Sample size was 30 the sampling techniques was purposive sampling techniques, the research design was pre-experimental research design, the analysis was done with paired t test. Results shows that on average of <50 of women experiencing dysmenorrhea pain. The p value=0.000 is significant <0.05. the conclusion shows that there is the effect of warm compresses on reducing miled menstrual pain in young womens. 38

A study was conducted by Junyoung Jo, Sunhl. Heat therapy for primary dysmenorrhea: A systematic review and a meta analysis of its effects on pain relief and quality of life the objectives of the study effectiveness of heat therapy for primary dysmenorrhea. The sample size was 754. The sampling technique was randomized control trials, sampling was purposive sampling technique. The analysis was done with pair t test. Md=-4.04 vas, P=0.001. However these results are based on relatively few trials with small sample size. Our reviews provided suggestive evidence of the effectiveness of heal therapy for primary dysmenorrhea, but rigorous high quality trials are still needed to provide robust evidence. 39

A study was conducted by Samantha R M. the objectives of the study selective EBM review is to determine whether or not topical heat patches are more effective at reliving pain associated with dysmenorrhea than OTC NAIDS (Ibuprofen 400 mg PO Q8h or acetaminophen 500mg PO Q6h) in menstruating women 18 and over age. The study design was randomized controlled trail, sampling was purposive sampling, the sample size 30. The questionnaires were used for data collection NRS scale was used to measure the level of pain. The results shows that topical heat patches were associated with statistically significant greater reduction in pain associated with dysmenorrhea than oral NSAIDS. However showed no statistically significant reference in pain reduction patience that topical heat causes great pain reduction than oral NSAID the conclusion the topical heat causes grater pain reduction than NSAID for the study with large sample and double blinding will we needed to determined the true effectiveness of topical heat in treating pain associated with dysmenorrhea versus oral NSAIDS.40

A study was conducted by Gyan KADS, Natalia CDOVES, Fabio M A. effects of cold versus hot compress on pain in university students with primary dysmenorrhea. The objective of the study was to identify the influence of cold or hot compresses on pain intensity and pressure pain tolerance thresholds in women with primary dysmenorrhea sample size 40, Sampling technique was a single blinding randomized clinical study, sampling was purposive sampling. Here women divided into two groups hot compress and cold compress, applied for 20 mins on the lower abdomen and lower back region. Pressure pain tolerance threshoulds were evaluated by algometry in the vastus medial is gluteus maximus, lambar para vertebral muscle and supraspinatus ligaments l4-l5 and s1. Pain intensity was assessed by the visual analogue scale results shows that no significant changes in pressure pain tolerance thresholds were observed immediately after the application of the compresses, nor 30 minutes later. The comparison of the variation in the effect of changes showed no difference between the intervention groups, either regarding pressure pain tolerance thresholds or the visual analogue scale. However both groups hand a significant reduction in the visual analogue scale right after the scale application and 30 minutes after the end of the intervention. Nevertheless, right after the use of the compresses, as well as 30 minutes after its end, The group received the group cold compress had a more significant reduction in pain intensity p=0.002 and p=0.004 respectively. The conclusion of the study cold or hot compresses did not produce changes in pressure pain tolerance thresholds, Pain perception was lower after the treatment, especially in the group using cold compresses.41

A study was conducted by Revathi J, Shweta P. immediate effect of hot pack versus Kinesiotape and hot pack on pain in primary dysmenorrhea. The objectives of the study was immediate effect of hot pack versus Kinesiotape and hot pack on primary dysmenorrhea sample size was 50 between the age group of 18-25 years, The sample technique was simple random sampling technique, Sampling was purposive sampling analysis of the study was done t test. The result showed that there was significant reduction in the pain intensity pain <0.05 in both the groups based on statistical analysis, There was no significant adjunct effect of Kinesiotape seems as compared to only hot pack, The conclusion was clinically hot pac as well as Kinesiotape both are effective in alleviating pain in primary dysmenorrhea. 42

**Review of literature related to comparative studies**

A study was conducted by Marjan Ahmad Shirvani , Narges Motahari-Tabari a, Abbas Alipour bUse of ginger versus stretching exercises for the treatment of primary dysmenorrhea: a randomized controlled trial. The objective of the study the effects of ginger and exercise on primary dysmenorrhea were compared. This randomized controlled trial was performed in Mazandaran University of Medical Sciences, Iran. Two groups of female students were recruited by simple random allocation. In each group, 61 students with moderate to severe primary dysmenorrhea with regular menstrual cycles and without a history of regular exercise were assessed. The ginger group received 250 mg ginger capsules from the onset of menstruation. In the exercise group, belly and pelvic stretching exercises were performed for 10 min, 3 times per week. Intensity of pain was assessed according to a visual analogue scale after the first and the second month. Results that Exercise was significantly more effective than ginger for pain relief (31.57 ± 16.03 vs 38.19 ± 20.47, P = 0.02), severity of dysmenorrhea (63.9% vs 44.3% mild dysmenorrhea, P = 0.02) and decrease in menstrual duration (6.08 ± 1.22 vs 6.67 ± 1.24, P = 0.006), in the second cycle. Conclusion was Stretching exercises, as a safe and low-cost treatment, are more effective than ginger for pain relief in primary dysmenorrhea.43

A study was conducted by: Kashefi F, Khajehei M, Tabatabaeichehr M, Alavinia M, Asili J. Comparison of the effect of ginger and zinc sulfate on primary dysmenorrhea: a placebo-controlled randomized trial. Pain Management Nursing. The aim of this randomized trial was to compare the effect of ginger, zinc sulfate, and placebo on the severity of primary dysmenorrhea in young women. One hundred and fifty high school students were recruited. The participants were divided into three groups. The first group received ginger capsules, the second group received zinc sulfate capsules, and the third group received placebo capsules. All participants took the medications for four days, from the day before the commencement of menstruation to the third day of their menstrual bleeding. The severity of dysmenorrhea was assessed every 24 hours by the pain visual analog scale. The severity of pain was significantly different between, before, and after the intervention in both the ginger and the zinc sulfate groups (p < .001). Compared with the placebo receiving group, participants receiving ginger and zinc sulfate reported more alleviation of pain during the intervention (p < .05). Ginger and zinc sulfate had similar positive effects on the improvement of primary dysmenorrheal pain in young women.44

A study was conducted by Gurung A, Khatiwada B, Kayastha B, Parsekar S, Mistry SK, Yadav UN. Effectiveness of Zingiber Officinale (ginger) compared with non-steroidal anti-inflammatory drugs and complementary therapy in primary dysmenorrhoea this systematic review aimed to compare the effectiveness of ginger with NSAIDs and other complementary therapies and suggests an effective dose of ginger in oral form that can be taken during dysmenorrhoea. Sample size is 394.Materials and methods was conducted using electronic databases, namely MEDLINE via PubMed, Cochrane central, Scopus, CINHAL, EBSCOhost, ProQuest Central, and Google Scholar search engine. The search terms were combined keywords related to menstrual pain, complementary therapy, NSAIDs, and ginger. Randomized or quasi-randomized controlled trials that included ginger as a comparator to assess the effect on primary dysmenorrhea. Data were extracted, and the findings were narratively synthesised. the Results of the study there was no significant difference between ginger and NSAIDs in decreasing pain intensity during menstruation. Ginger and exercises like muscle relaxation techniques, stretching, and sub-maximal aerobic exercise effectively reduce pain when combined. Dill seeds  an aromatic herb used for flavouring and medical purposes) and ginger alone were effective in dysmenorrhoea, but no effect of valerian, peppermint and cumin (spices) seeds were observed. The effect of ginger was inclusive compared to placebo.The usage of ginger up to two grams per day in divided doses of powder or dietary form for three days from the first day of the menstrual cycle can be used safely for primary dysmenorrhoea. Ginger can be combined with complementary therapies like exercise for increased effectiveness in relieving menstrual pain. The alternative therapy can reduce dependency on synthetic drugs for controlling dysmenorrhoea. 45

A stydu was conducted by Tsai IC, Hsu CW, Chang CH, Lei WT, Tseng PT, Chang KV. Comparative Effectiveness of Different Exercises for Reducing Pain Intensity in Primary Dysmenorrhea: A Systematic Review and Network Meta-analysis of Randomized Controlled TrialsThe objective of this systematic review and network meta-analysis was to evaluate the effectiveness of different exercise regimens in reducing pain associated with primary dysmenorrhea. Methods Randomized controlled trials The primary outcome was the effect of exercise on pain intensity measured by the mean difference on a 10-cm visual analogue scale at 4 and 8 weeks after intervention. The secondary outcome was the difference in risk of dropout at 8 weeks. The study protocol was registered as INPLASY202330050.Results.This systematic review and network meta-analysis included 29 randomized controlled trials, which involved 1808 participants with primary dysmenorrhea. Exercise interventions included relaxation exercise, strength training, aerobic activity, yoga, mixed exercise, and the Kegel maneuver. Relaxation exercise was the most effective in reducing menstrual pain in 4 weeks (− 3.56; 95% confidence interval: − 5.03 to − 2.08). All exercise interventions were effective in reducing menstrual pain at 8 weeks, with reductions ranging from − 3.87 (95% CI − 5.51 to − 2.22) for relaxation exercise to − 2.75 (95% CI − 4.00 to − 1.51) for yoga, compared to the control group. Relaxation exercises were found to have a significantly lower dropout risk (− 0.11; 95% CI  − 0.20 to 0.02), while none of the exercise types was associated with a higher dropout risk than the control group. Conclusion All exercise interventions were effective in reducing menstrual pain in primary dysmenorrhea after 8 weeks of intervention. However, relaxation exercise was found to be the most effective intervention at 4 and 8 weeks and had the lowest risk of dropout.46

**CHAPTER-IV**

**METHODOLOGY**

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**MATERIALS AND METHODS**

Research methodology is the conceptual structure which with in the research is conducted it is a blue print for collection, measurement and analysis of the data.in research methodology researcher specify the which design was adopted and how the sample was selected and were the sample choosen. Research methodology is a systematic way to solve the research problem and also to carry out the academic study and research in a correct manner.

The present study was conducted to compare the effectiveness of Ginger tea verses Hot water to decrease the Dysmenorrheal pain Adolescent girls in selected setting.

This chapter describes the aspects like research approach, research design, variables, setting, population, samples, sampling techniques, criteria for sample selection, development and description of instruments, description of intervention tool, reliability and validity of the tools, ethical consideration, pilot study , data collection procedure and plan for data analysis.

**4.1 RESEARCH APPROACH**

The research approach is the most essential part of any research. The entire study based on it. The research approach used in the study is an applied from of research to find out how well the intervention is effective. In this study the effectiveness of Ginger tea verses Hot water for to reduce the Dysmenorrheal pain among nursing students was evaluated. There fore on quantitative evaluation research approach was essential to test the effectiveness of the intervention for this study.

**RESEARCH DESIGN**

It refers to the overall plan for addressing a research question, including specification for enhancing the integrity of the study. The design used for the present study was experimental-1 factorial design where the group pre and post test design was selected to compare the effectiveness of Ginger tea verses Hot water for Dysmenorrheal pain in Nursing students.

Simple factorial design is an effect of varying two factors on the dependent variable. In this design the extraneous variable to be controlled by homogeneity and the independent variable, which is manipulated. Both the groups is having Experimental groups, Experimental group-1, Experimental group-2.

**DIAGRAMMATIC PRESENTATION OF THE DESIGN**

|  |  |  |  |
| --- | --- | --- | --- |
| **Lottery method selected the nursing students** | **Pre test** | **Treatment** | **Post test** |
| Experimental Group-1 | **O1**  Assess the level of Dysmenorrhea pain with the using of Mc Caffery numerical pain scale(Day 1) | X1  Ginger tea intervention start from First day of 3rd day of menstrual pain for twice a day and continued for 8 weeks First and Second menstrual cycle) | **O2**  Assess the level of Menstrual pain though MC Caffery Numerical pain scale |
| Experimental Group-2 | **O1**  Assess the level of Dysmenorrhea pain with the using of Mc Caffery numerical pain scale(Day 1) | X1  Hot water intervention start from First day of 3rd day of menstrual pain for twice a day and continued for 8 weeks First and Second menstrual cycle) | **O2**  Assess the level of Menstrual pain though MC Caffery Numerical pain scale |

**O1:** Pre test on Nursing students related to level of Menstrualpain.

**X1:** Ginger tea.

**O2:** Posttest on nursing students regarding level of menstrual pain in Experimental group-1.

**O1:** Pretest on nursing students related to level of menstrual pain.

**X2:** Hot water.

**O2:** Post test on nursing students regarding level of Menstrual pain in Experimental group-2.

**SAMPLE**

Sample refers to a portion of the population which represent the entire population.43/s

In this study the sample size consist of 2 sets of sample (Experimental group-I & Experimental group-II) and total of 64 I year Bsc Nursing students with the age group of 1-24 years.

**SAMPLE SIZE**

A sample is the basic element of the population about whom the information was collected, to represent the concept of interest. Nursing students with level of menstrual pain were selected from these I year Bsc[N] students, which fulfill the inclusion criteria were selected as the sample of the study.

**Sample size**

The sample size composed by 64 sample with Dysmenorrhea pain from Sri Devaraj Urs College of Nursing. The sample size was estimated using the power Analysis with 64. Out of 32 members is Experimental Group-1 and experimental group-232 members.

By using power of analysis

Sample Size = Za2(pxq)

d2

Za2 = 95% confidence level=1.96

P= Prevalence of Dysmenorrhea=79%

q=100-p = 21

d= absolute error = 10%

considering the attrition rate as 10% another

Total sample size = 64

Experimental group-1= 32, Experimental group-II=32.

**SAMPLE TECHNIQUE**

Purposive sampling with Simple random technique was adopted for the study.

Sampling stategy used for the selection of sample. The entire population is devided in to two groups. Experimental group 1 & experimental group 2. In this experimental group 1 is having 32 members in group. In experimental group 2 is having 32 members.

**Experimental group 1** In this nursing students selected through lottery method who has taken chit of – A (In this girl nursing students who has taken the chit with symbol of A. For this group administering the MC Caffery Numerical pain scale pain will be administering pretest and posttest of menstrual cycle.

**Experimental group 2** In this nursing students selected through lottery method who has taken chit of – B (In this girl nursing students who has taken the chit with symbol of B. For this group administering the MC Caffery Numerical pain scale pain will be administering pretest and post test of menstrual cycle.

**SAMPLING CRITERIA**

**Inclusion criteria**

1. Adolescent Girls Who are having regular menstrual cycle.
2. Adolescent Girls who are between the age group of 18-24 years .
3. Adolescent Girls who experience’s moderate to severe dysmenorrheal pain
4. Adolescent Girls who are Married and Unmarried .
5. Adolescent Girls who is having PCOD& PCOS regular periods**.**

**Exclusion criteria**

1. Adolescent Girls who are taking treatment for dysmenorrhea.
2. Adolescent Girls who are not willing to participate in the study.
3. Adolescent Girls who is having bleeding disorders.

**Sampling stage**

|  |
| --- |
| **64- members I year Bsc Nursing students was selected in Sri Devaraj Urs College of Nursing** |

**( First stage of sampling )**

|  |
| --- |
| **Moderate and severe Dysmenorrhea students was selected for this study** |

**( Second stage of sampling )**

|  |
| --- |
| **Randomization was selected for the both groups Experimental group-I, Experimental group-II** |

**( Third stage sampling)**

|  |  |  |
| --- | --- | --- |
| **Moderate and severe Dysmenorrhea girls-32** |  | **Moderate and severe Dysmenorrhea girls-32** |

|  |  |  |
| --- | --- | --- |
| **Experimental group-I**  **( Nursing students-32)** |  | **Experimental group-I**  **( Nursing students-32)** |

**Demographic representation of the sampling technique**

**4.9 DATA COLLECTION ISNTRUMENTS**

**A. DEVELOPMENT OF THE TOOL**

**The investigator used the following steps for preparation of the tools for the study**

* Extensive review of literature.
* Preparation of the blue print for the tools.
* Consultation with experts from the field of study.
* Preparation of draft for the final tools.
* Review of literature.
* Editing the tools

The investigator did an extensive review of related literatures from books, journals, manuals, reports published researches, newspapers and internet to develop study instruments.

**Preparation of the blue print**

In the blueprint included questionnaires to collect the demographic data and dysmenorrheal pain and severity of pain.

**Consultation with experts from the field of study**

The data collection tool was ascending for experts of obstetrics and gynecological nursing and obstetrician and statistician.

Preparation of draft for the final tools.

Review of literature.

Editing the tools

**B. TOOLS DESCRIPTION**

There are three section tools are used here. They are;

Section A: Socio demographic variables.

Section B: Question related to Dysmenorrhea.

Section C: Assess the severity of the pain.

**Section A:**

It consist of socio demographic variable like age,weight, religion, marital status, economic status, type of diet, food craving.

**Section B:**

It consist of dysmenorrhea related assessment like Age of menarche, menstrual cycle intervals, duration of blood flow, menstrual location of pain, family history of dysmenorrhea, symptoms of dysmenorrhea, dysmenorrhea with pain.

**Section C:**

Assessing severity of the pain like type of pain, intensity of pain, days of pain, difficulty to perform the simple activity, difficulty to perform the moderate activity, difficulty to perform vigorous activity.

**Scoring procedure for the level of pain.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl. No** | **Level of Symptoms** | **Pain Score** | **Catergory of Pain** |
| 1. | No Symptoms | 0 | No pain |
| 2. | Mild Symptoms | 1-3 | Mild pain |
| 3. | Moderate Symptoms | 4-6 | Moderate pain |
| 4. | Severe Symptoms | 7-10 | Severe pain |

**Content validity of the tool**

Content validity is the degree to which the items in the instruments adequately represent the content for the concept of being measured. Content validity refers to which a measuring instruments provide adequate coverage of the topic under study.

It following methods ere used to test the content validity of the tools . The prepared tools along with the statement of the problem, Objectives, Description about the instruments and nutritive facts about the Ginger tea were sent to re

The content validity of the demographic variables and dysmenorrheal pain assessment scale was validated by the Nursing experts with the specialty of Obstetrics and gynecological Nursing, Obstetrician & Statistician nursing research department experts and the content validity score was 8.0. The experts suggestion were incorporated in designing the final tool for the study with consult guide. The tool was modified according to suggestion and recommendation of experts.

**RELIABILITY OF THE TOOL**

Reliability is the degree of consistency with which an instrument measure what the designed to measure. Reliability was tested with internal consistency reliability was used to used. Reliability was assessed by using Cranach’s Alpha method. Alpha correlation coefficient values for Dysmenorrhea pain was 0.8.

**ETHICAL COSIDERATION**

**Ethical consideration has taken from Sri Devaraj Urs College Of Nursing.**

**PILOT STUDY**

The investigator obtain formal consent from chief Educational Officer, Principal of Pavan College of nursing & Ist year Bsc nursing students. The purpose of the study and confidentiality was explained to the Ist year Bsc Nursing students. Pilot study was 01.02.2024-30.02.2014. The Investigator selected 12 members nursing students at Pavan college of nursing. Pretest (first menstrual cycle) level of Dysmenorrhea Using of self structured questionnaires for both groups. intervention has given Experimental group-I Ginger tea, Experimental group-II Hot water has given for to menstrual cycles. After the two cycles of intervention post test was conducted. the analysis was done with the independent t test was done. Results in this study Ginger tea and Hot water both got positive results like reducing the Dysmenorrheal pain, but ginger tea got more significance like positive results for the study.

**INTERPRETATION OF GINGER TEA VERSES HOT WATER**

**Administration of Ginger tea**

|  |  |
| --- | --- |
| **Ginger tea** | Preparation of ginger tea – In a bowl 150 ml of water and 2gm of fresh Ginger adding and boiling we need to boil for 10 minutes with low flame. Additionally adding of two table spoons of sugar we need to add. |
| **Step-2** | These ginger tea administer for first 3 days of menstrual days , twice a day Morning and evening 100ml of ginger tea. |
| **Step-3** | Next menstrual cycle also continue the intervention and 4 th day of second menstruation post test will be conducting. |

**Administration of Hot water:**

|  |  |
| --- | --- |
| **Hot water** | Preparation of Hot water – In a bowl 120 ml of water boiling for 5 minutes with low flame. The water has heat for reaching of 40oc. |
| **Step-2** | These Hot water administer for first 3 days of menstrual days , twice a day Morning and evening 100ml of hot water. |
| **Step-3** | Next menstrual cycle also continue the intervention and 4 th day of second menstruation post test will be conducting. |

**Post test**

Post test was conducted after the weeks of intervention ie during 4 th day menstrual cycle by using Mc Caffery Numerical pain scale for Dysmenorrhea pain for the Nursing students**.**

|  |
| --- |
| **Pre test for both experimental group I and II on Day I** |

|  |
| --- |
| **Intervention on fourth day of menstrual cycle (ie during first cycle of data collection period of continued for 8 weeks)** |

|  |  |  |
| --- | --- | --- |
| **Experimental group-I** |  | **Experimental group-2** |

|  |
| --- |
| **Post test- fourth day of menstrual cycle** |

**SCHEMATIC REPRESENTATION OF DATA COLLECTION SCHEDILES**

|  |
| --- |
| **Target population**  I year Bsc [N] nursing students with Dysmenorrheal pain |

|  |
| --- |
| **Accessible population**  I year Bsc nursing students with moderate and severe Dysmenorrhea pain whoe are Residence in Si Devarj Urs College of Nursing, Kolar. |

|  |
| --- |
| **Purposive sampling with used of lottery method** |

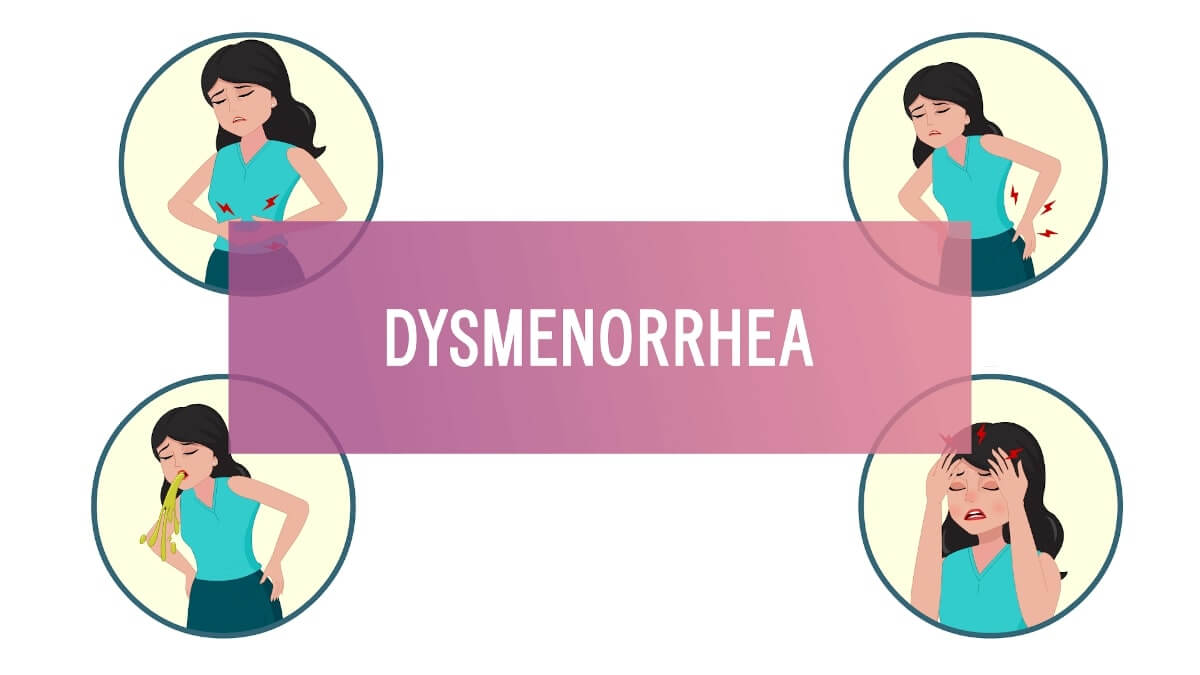
|  |  |  |
| --- | --- | --- |
| 32 members are selected Experimental group-1 |  | 32 members are selected Experimental group-II |

|  |  |  |
| --- | --- | --- |
| **Pre test (O1)**  Demographic variables and Dysmenorrhea related Question& Severity of pain related questions |  | **Pre test (O1)**  Demographic variables and Dysmenorrhea related Question& Severity of pain related questions |

|  |  |  |
| --- | --- | --- |
| **Intervention (X1)**  Ginger tea administer 100ml (first 3 days of menstrual pain twice a day continued for 8 weeks) |  | **Intervention (X1)**  Hot water administer 100ml (first 3 days of menstrual pain twice a day continued for 8 weeks) |

|  |  |  |
| --- | --- | --- |
| **Post test(O2)**  The same pre test tool was used after 8 weeks of intervention (4th day of menstrual cycle day) |  | **Post test(O2)**  The same pre test tool was used after 8 weeks of intervention (4th day of menstrual cycle day |

**DATA ANALYSIS PROCEDURE**



**DATA ANALYSIS PROCEDURE**

The data was collected from 64 of I year Bsc[N] nursing students with Moderate and severe Dysmenorrheal pain were code and entered in to Microsoft Excel Spreadsheet. The data was analyzed using descriptive and inferential statistics.

**Descriptive statistics**

Frequency and percentage distribution to analyze the demographic variables.

Mean, Standard deviation and Mean percentage was used to assess the level of Dysmenorrheal pain among nursing students ,at Kolar.

**Inferential statistics**

Frequency and percentage was calculated for the both groups Experimental group-1 and experimental group –II.

Unpaired t test to compare the post test intervention level of Dysmenorrheal pain among Nursing students for both groups.

Chi-square test to associate the post test level of Dysmenorrheal pain among nursing students with demographic variables.

**CHAPTER –V**

**STATEMENT OF THE PROBLEM**

**“**A COMPARATIVE STUDY TO EVALUATE THE EFFECTIVENESS OF GINGER TEA VERSES HOT WATER AMONG NURSING STUDENTS AT KOLAR.”

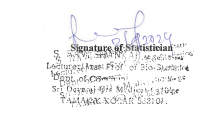
**Research approach:** Quantitative approach

**Research design:** Quasi experimental research design

**sampling technique:** Random sampling Technique

**Sampling size:** 64 (Experimental group-I & Experimental group-II) who are the inmates of SDUCON.

**Sample size estimation:** Sample size was estimated based on prevalence rate Dysmenorrhea. Among 64 nursing students age group of 18-24 years. by using random sampling technique the data was collected by using pre test and post test perform.

****

**CHAPTER-VI**

**DATA ANALYSIS AND INTER PRETATION**

Data analysis is defined as the systemic organization and synthesis of research data and the testing of research hypothesis using the data.

This chapter presents the analysis and interpretation of data collected from 64 nursing students of I year Bsc nursing. Data was collected, analyzed and interpreted by using descriptive and inferential statistics.

**ANALYSIS CHAPTER**

Data analysis is defined as the systemic organization. The most critical phase of any research data analysis. data analysis is the gather the information the data using logical and reasoning to stop the trend, correlations and patterns.

This chapter deals with the analysis and interpretation of the data collected from 64 nursing students between the age group of 18 - 24years studying in I year Bsc[N] students who are residence in Sri Devaraj Urs college of Nursing at kolar. assess the effectiveness of Ginger tea verses Hot water for Dysmenorrheal pain. The purpose of the study to reduce the collected data to after the intervention the Dysmenorrheal pain.

**Objectives of the study**

1 To Assess the level of Dysmenorrhea among nursing students using modified McCaffery numerical pain scale.

2. To compare the effectiveness of Ginger tea and Hot water consumption in reducing the Dysmenorrheal pain among Nursing Students.

3. To find the association between level of dysmenorrheal before and after administration of ginger tea and hot water demographic variables.

**RESEARCH HYPOTHESIS**

**H02** There no significant association between the severity of dysmenorrhea among college students with selected socio demographic variables. .

**ORGANIZATION OF DATA :**

Based on the objective of the study the data collected were organized, analyzed, tabulated and presented under the following settings.

**SECTION-A DESCRIPTION OF DEMOGRAPHIC VARIABLES OF NURSING STUDENTS.**

**Frequency and percentage distribution of sociodemographic variables.**

TABLE-1: DISTRIBUTION AGE OF I YEAR B.SC (N) STUDENTS ON AGE

**N= 64**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sl no** | **Variables** | **Experimental group-I** | | **Experimental group-II** | |
| **1** | **Age** | **F** | **%** | **F** | **%** |
|  | 1)18-19 | 27 | 84 | 19 | 59 |
|  | 2)20-21 | 5 | 16 | 8 | 25 |
|  | 3)22-23 | - | - | 4 | 13 |
|  | 4)24-25 | - | - | 1 | 3 |
| **Total** | | 32 | 100 | 32 | 100 |

**Table- 1 Showed that age group of nursing students**

**Fig-3: Bar diagram showing distribution of nursing students based on age group**

Majority of nursing students in Experimental group-1(84%) belongs to (18-19) and 16% belongs to between the age group of (20-21). Experimental group-II (59%) belongs to the age group between (18- to19) and 25% of belongs to (20-21) and only 3% belongs to between the age group of (24-25) years. **n= 64**

**TABLE-2: DISTRIBUTION OF I YEAR B.SC (N) STUDENTS ON WEIGHT**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Slno** | | **Variable** | **Experimental group-I** | | **Experimental group-II** | |
| 2 | | **Weight** | F | % | F | % |
|  | | 1)<40 kg | 1 | 3 | 1 | 3 |
|  | | 2)41-44 kg | 5 | 16 | 2 | 6 |
|  | | 3)45-50 kg | 6 | 19 | 7 | 22 |
|  | 4)> 50 Kg | | 20 | 62 | 22 | 69 |  |
| **Total** | | | 32 | 100 | 32 | 100 |  |

**Figure-4 showed that weight of I Bsc[N] students**

With regard to Weight , majority of nursing students in Experimental group-1(3%) weighted to <40kg and (16%) between the Weight of (41-44Kg) and (19%) belongs to 45- 50 kg, (62%) the weight of >50 kgs. Experimental group-II (3%) the weight of < 40kg and (6% ) of between (41- 44 Kg ) and 22% of (45-50Kg) and 66% belongs to between >50kgs.

**TABLE-3: DISTRIBUTION OF I YEAR B.SC (N) STUDENTS ON RELIGION**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Slno** | | **Variable** | **Experimental group-I** | | **Experimental group-II** | |
|  | | **Religion** | F | % | F | % |
|  | | 1)Hindu | 13 | 40 | 7 | 22 |
|  | | 2)Muslim | 5 | 16 | 2 | 6 |
|  | | 3)Christian | 6 | 19 | 7 | 22 |
|  | 4)any other | | 20 | 62 | 22 | 69 |  |
| **Total** | | | 32 | 100 | 32 | 100 |  |

**Figure-5 showed that Religion of the I year Bsc Nursing students.**

With regard to Religion , majority of nursing students in Experimental group-I(41%) belongs toHindu and(59%) belongs to Christian. Experimental group-II (22%) belongs to Hindu and (88%) belongs to Christian.

**TABLE-4: DISTRIBUTION OF I YEAR B.SC (N) STUDENTS ON MARITAL STATUS**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Slno** | **Variable** | **Experimental group-I** | | **Experimental group-II** | |
| 4 | Marital status | F | % | F | % |
|  | 4.1)Married | 0 | 0 | 0 | 0 |
|  | 4.2) Unmarried | 32 | 100 | 32 | 100 |
| **Total** | | 32 | 100 | 32 | 100 |

**Figure-6 showed that Marital status of the I year Bsc Nursing students.**

With regard to marital status, majority of nursing students in Experimental group-I and Experimental group-II (100%) were Unmarried.

**TABLE-5: DISTRIBUTION OF I YEAR B.SC (N) STUDENTS ON SOCIO ECONOMIC STATUS**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Slno** | **Variable** | **Experimental group-I** | | **Experimental group-II** | |
| 5 | **Socio Economic status** | F | % | F | % |
|  | 1)Above poverty line | 20 | 63 | 9 | 28 |
|  | 2)Below poverty line | 12 | 37 | 23 | 72 |
| **Total** | | 32 | 100 | 32 | 100 |  |

**Figure-7 showed that Marital status of the I year Bsc Nursing students.**

With regard to Economic status , majority of nursing students in Experimental group-I (63%) belongs to Above poverty line and (37% ) belong to Below poverty line. in Experimental group-II (28%)belongs to Above poverty line and (72%) belongs to below poverty line.

**TABLE-6: DISTRIBUTION OF I YEAR B.SC (N) STUDENTS ON SOCIO ECONOMIC STATUS**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Slno** | **Variable** | **Experimental group-I** | | **Experimental group-II** | |
| 6 | **Type of Diet** | F | % | F | % |
|  | 1)Vegetarian | 2 | 6 | 4 | 12 |
|  | 2)Non vegetarian | 18 | 56 | 14 | 44 |
|  | 3)Mixed | 12 | 37 | 14 | 44 |  |
| **Total** | | 32 | 100 | 32 | 100 |  |

**Figure-8 showed that marital status of the I year Bsc Nursing students.**

With regard to type of diet , majority of nursing students in Experimental group-I (6%) belong to vegetarian and (57%) belongs to non-vegetarian and (37%) had the habit of having mixed diet. In experimental group-II only (12%) were to vegetarian, (44%) were to non- vegetarian and (44%) were to mixed diet.

**TABLE-7: DISTRIBUTION OF I YEAR B.SC (N) STUDENTS OF FOOD CRAVINDS DURING MENSTRUAL CYCLE**

**N=64**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Slno** | **Variable** | **Experimental group-I** | | **Experimental group-II** | |
| 7 | Food during craving menstrual cycle | F | % | F | % |
|  | 1)Sweets | 12 | 37 | 14 | 44 |
|  | 2) Spicy foods | 20 | 63 | 18 | 56 |
| **Total** | | 32 | 100 | 32 | 100 |  |

**figure -8 shows that food cravings during menstrual cycle**

With regard to type of food craving during menstrual cycle, majority of nursing students in Experimental group-I (37%) is having craving of sweet foods and (63%) is having a craving of spicy foods. In Experimental group-II belongs to(44%) is having of food craving of sweets, (56%) having a food craving of spicy foods. In Ist year BSc nursing students.

**Table -8 Describe socio demographic variables of the both groups like experimental group-I and Experimental group- II n=32, n=32 ,N= 64**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sl. No** | **Variable** | **Experimental group-I** | | **Experimental group-II** | |
| **Frequency** | **Percentage** | **Frequency** | **Percentage** |
| 1 | **Age** |  |  |  |  |
| 18-19 | 27 | 84 | 19 | 59 |
| 20-21 | 5 | 16 | 8 | 25 |
| 22-23 | - | - | 4 | 13 |
| 24-25 | - | - | 1 | 3 |
| 2 | **Weight** |  |  |  |  |
| <40 kg | 1 | 3 | 1 | 3 |
| 41-44 kg | 5 | 16 | 2 | 6 |
|  | 45-50 kg | 6 | 19 | 7 | 22 |
| >50 Kg | 20 | 62 | 22 | 69 |
| 3 | **Religion** |  |  |  |  |
| Hindu | 13 | 41 | 7 | 22 |
| Muslim | - | - | - | - |
| Christian | 19 | 59 | 25 | 78 |
| Any other | - | - | - | - |
| 4. | **Marital Status** |  |  |  |  |
| Married | - | - | - | - |
| Unmarried | 32 | 100 | 32 | 100 |
| 5. | **Economic Status of the Family** |  |  |  |  |
| Above poverty | 20 | 63 | 9 | 28 |
| Below poverty | 12 | 37 | 23 | 72 |
| 6. | **Type of Diet** |  |  |  |  |
| Vegetarian | 2 | 6 | 4 | 12 |
| Non vegetarian | 18 | 56 | 14 | 44 |
| Mixed diet | 12 | 37 | 14 | 44 |
| 7. | **Food Craving during menstrual cycle** |  |  |  |  |
| Sweets food | 12 | 37 | 14 | 44 |
| Spicy food | 20 | 63 | 18 | 56 |

**Section – B: Section-B Question related to Dysmenorrhea**

**TABLE -9 DISCRIPTION OF THE OVERALL QUESTIONS RELATED TO DYSMENORRHEA PAIN RELATED AMONG NURSING STUDENTS**

**n=32, n=32 ,N= 64**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sl. No** | **Variable** | **Experimental group-I** | | **Experimental group-II** | |
| **Frequency** | **percentage** | **Frequency** | **Percentage** |
| 1. | Age of Menarche |  |  |  |  |
| 11-12 | 8 | 25 | 9 | 28 |
| 23-14 | 23 | 72 | 17 | 53 |
| 15-16 | 1 | 3 | 6 | 19 |
| 2. | Intervals of Menstrual cycle |  |  |  |  |
| 22-24 | 8 | 25 | 10 | 31 |
| 25-27 | 24 | 75 | 22 | 69 |
| 28-30 | - | - | - | - |
| >30 | - | - | - | - |
| 3. | Duration of Menstrual cycle blood flow |  |  |  |  |
| 2-3 days | 22 | 69 | 12 | 37 |
| 4-5 days | 10 | 31 | 20 | 63 |
| 6-7 days | - | - | - | - |
| >8 days | - | - | - | - |
| 4. | Menstrual location of pain |  |  |  |  |
| Lower abdomen | 26 | 81 | 22 | 69 |
|  | Lumbar | 1 | 3 | 2 | 6 |
| Thighs | - | - | - | - |
| Inguinal region | 5 | 16 | 8 | 25 |
| 5. | Family history of dysmenorrhea |  |  |  |  |
| First line relatives | 25 | 69 | 19 | 60 |
| Second line relatives | 7 | 21 | 13 | 40 |
| 6. | Symptoms of dysmenorrhea |  |  |  |  |
| Tiredness | 14 | 43 | 14 | 44 |
| Irritability | 10 | 31 | 10 | 31 |
| Inability to concentrate at work | 4 | 13 | 3 | 9 |
| Pain | 4 | 13 | 5 | 16 |
| 7 | Dysmenorrhea symptoms along with pain |  |  |  |  |
| Headache | 5 | 15 | 5 | 16 |
| Nausea and vomiting | 15 | 47 | 14 | 44 |
| Constipation | 6 | 19 | 5 | 15 |
| Lethargy | 6 | 19 | 8 | 25 |

**Section – C:**

**Table =10 discription of Questions related to severity of Dysmenorrhea related Questions.**

**n=32, n=32 ,N= 64**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sl. No** | **Variable** | **Experimental group-I** | | | | | | **Experimental group-II** | | | | |
| **Pretest**  **Fre/per** | | | **posttest**  **Pre Post** | | | **Frequency**  **Pre Post** | | **Percentage**  **Pre Post** | | |
| 1. | **Type of Pain** | F | | % | F | | % | F | % | F | | % |
| 1)Mild | - | | - | 19 | | 59 | - | - | 2 | | 6 |
|  | 2)Moderate | 11 | | 34 | 11 | | 34 | 13 | 41 | 12 | | 38 |
|  | 3)Severe | 21 | | 66 | 2 | | 6 | 19 | 59 | 17 | | 54 |
| **2.** | **Intensity menstrual pain** |  | |  |  | |  |  |  |  | |  |
|  | 1)Continues | 9 | | 28 | 7 | | 22 | 7 | 22 | 7 | | 22 |
|  | 2)Intermittent | 21 | | 66 | 23 | | 72 | 22 | 67 | 22 | | 67 |
|  | 3)Prolonged | 2 | | 6 | 2 | | 6 | 3 | 9 | 3 | | 9 |
| **3.** | **Days of pain** |  | |  |  | |  |  |  |  | |  |
|  | 3.1)0-1 days | 15 | | 46 | 15 | | 46 | 15 | 47 | 22 | | 69 |
|  | 3.2) 2 -3 days | 17 | | 54 | 17 | | 54 | 12 | 37 | 12 | | 28 |
|  | 3.3)4-5 days | - | | - | - | | - | 5 | 16 | 1 | | 3 |
|  | 3.4)>6 days | - | | - | - | | - | - | - | - | | - |
| **4.** | **Did you find difficulty while performing simple activity** |  | |  |  | |  |  |  |  | |  |
|  | 4.1)Yes | 27 | | 84 | 3 | | 9 | 26 | 81 | 15 | | 46 |
|  | 4.2)No | 5 | | 16 | 29 | | 91 | 6 | 18 | 17 | | 54 |
| **5.** | **Did you find difficulty while performing moderate activity** |  | |  |  | |  |  |  |  | |  |
|  | 5.1)Yes | 31 | 97 | | 6 | 19 | | 31 | 97 | 21 | 66 | |
|  | 5.2)No | 1 | 3 | | 26 | 89 | | 1 | 3 | 11 | 34 | |
| **6.** | **Did you find difficulty while performing vigorous activity** |  |  | |  |  | |  |  |  |  | |
|  | 6.1)Yes | 32 | 100 | | 8 | 25 | | 28 | 88 | 24 | 75 | |
|  | 6.2)No | - | - | | 24 | 75 | | 4 | 12 | 8 | 25 | |

**Objective:02**

**To compare the effectiveness of Ginger tea and Hot water consumption in reducing the Dysmenorrhea pain among Nursing students.**

**For this Objectives independent test done.**

**Table -11 discription of the unpaired t-test for both groupsUNPAIRED t- TEST n=32, n=32 ,N= 64**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Slno** | **Intervention** | **Mean** | **SD** | **df** | **UNPAIRED t-test** | **P value** | **Inference** |
| **1** | **Ginger tea** | **5.28** | **1.54** | **62** | **7.37** | **0.001** | **SS** |
| **2** | **Hot water** | **7.78** | **1.12** |

**df= 62 Table value=3.48**

**Figure-10showed that level of pain reducing during mild activity of pain.**

**Figure-11 showed that level of pain during performing moderate activity.**

**Figure-12 showed that level of pain during performing Vigorous activity**

Unpaired “t” test was calculated to analyze the effectiveness between post test scores of Experimental group-I and II on different aspects of Dysmenorrheal pain shows that the overall score 7.37 when compared to table value 3.48 it was less than table value.

**Objective: 3 To find out the association between the level of Dysmenorrheal pain after intervention with the selected demographic variables.**

**Table -12 Experimental group-I Association between experimental group-I post test scores and demographic variables of the adolescent girls.**

**n=32, n=32 ,N= 64**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Sl No** | **Variables** | **Dysmenorrheal pain** | | **Calculated value of X2/ fisher** | **df** | **P-value** | **Inference** |
| **Below**  **Median <4.5** | **Above**  **Median >4.5** |
| **1** | **Age** |  |  | **-** | **1** | **1.00** | **NS** |
|  | 1)<19 years | **10** | **17** |  |  |  |  |
|  | 2) > 19 years | **1** | **4** |  |  |  |  |
| **2** | **Weight** |  |  | **0.794** | **1** | **0.37** | **NS** |
|  | 1)< 50 Kg | **6** | **8** |  |  |  |  |
|  | 2)> 50 Kg | **5** | **13** |  |  |  |  |
| **3** | **Religion** |  |  | **0.550** | **1** | **0.45** | **NS** |
|  | 1)Hindu | **6** | **9** |  |  |  |  |
|  | 3)Christian | **5** | **12** |  |  |  |  |
| **4** | **Economic status** |  |  | **0.372** | **1** | **0.54** | **NS** |
|  | 1)Below poverty | **7** | **11** |  |  |  |  |
|  | 2)Above poverty | **4** | **10** |  |  |  |  |
| **5** | **Type of diet** |  |  | **-** | **1** | **1.00** | **NS** |
|  | 1)Vegetarian | **1** | **1** |  |  |  |  |
|  | 2)Nonvegetarian | **10** | **20** |  |  |  |  |
| **6** | **Food cravings during Menstrual cycle** |  |  | **2.66** | **1** | **0.10** | **NS** |
|  | 1)Sweet foods | **2** | **10** |  |  |  |  |
|  | 2)Spicy foods | **9** | **11** |  |  |  |  |
| **7.** | **Age of Menarche** |  |  | **1.154** | **1** | **0.39** | **NS** |
|  | 1)<14 years | **4** | **4** |  |  |  |  |
|  | 2)>14 years | **7** | **17** |  |  |  |  |
| **8.** | **Menstrual cycle intervals** |  |  | **0.416** | **1** | **0.51** | **NS** |
|  | 1)<25 years | **2** | **6** |  |  |  |  |
|  | 2)> 25 years | **9** | **15** |  |  |  |  |
| **9.** | **Duration of blood flow** |  |  | **0.123** | **1** | **0.72** | **NS** |
|  | 1) ≤ 3days | **3** | **7** |  |  |  |  |
|  | 2)>3days | **8** | **14** |  |  |  |  |
| **10** | **Menstrual location of pain** |  |  | **-** | **1** | **0.63** |  |
|  | 1)Lower abdomen | **10** | **17** |  |  |  |  |
|  | 2) Inguinal region | **1** | **4** |  |  |  |  |
| **11.** | **Family history of Dysmenorrhea** |  |  | **0.134** | **1** | **0.71** | **NS** |
|  | 1)First line relatives | **9** | **16** |  |  |  |  |
|  | 2)Second line relatives | **2** | **5** |  |  |  |  |
| **12.** | **Symptoms of Dysmenorrhea** |  |  | **0.416** | **1** | **0.51** | **NS** |
|  | 1)Tiredness& Irritability | **9** | **5** |  |  |  |  |
|  | 2)Inability & Concentrate at work | **2** | **6** |  |  |  |  |
| **13.** | **Dysmenorrhea along with Pain** |  |  | **-** | **1** | **0.00** | **NS** |
|  | 1) Headache, Nausea & Vomiting | **11** | **9** |  |  |  |  |
|  | 2) Constipation & Lethargy | **0** | **12** |  |  |  |  |

The association between the socio demographic variables of the Experimental group-I Age of the (p= 1.00),Weight of (x2= 0.794,p=0.37), Religion of (x2= 0.550,p=0.43), Economic status (x2= 0.372,p=0.54),Type of diet (p= 1.00), Food craving (p=0.10), age of menarche (x2= 1.154,p=0.39), Menstrual cycle intervals (x2= 0.416,p=0.51),Duration of blood flow (x2= 0.12,p=0.72), Menstrual location of pain (p= 0.63,) Family history of Dysmenorrhea, Symptoms of Dysmenorrhea (x2= 0.416,p=0.51), Dysmenorrhea along with Pain (p=0.00).

**Table -13 Experimental group-II Association between experimental group-I post test scores and demographic variables of the adolescent girls.**

**n=32, n=32 ,N= 64**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Slno** | **Variables** | **Dysmenorrheal pain** | | **Calculated value of X2/ fisher** | **df** | **P-value** | **Inference** |
| **Below**  **Median <4.5** | **Above**  **Median >4.5** |
| **1** | **Age** |  |  |  |  |  |  |
| 1)<19 years | **4** | **8** | **-** | **1** | **0.03** | **NS** |
| 2) > 19 years | **1** | **19** |  |  |  |  |
| **2** | **Weight** |  |  | **0.32** | **1** | **0.24** | **NS** |
|  | 1)< 50 Kg | **6** | **9** |  |  |  |  |
|  | 2)> 50 Kg | **1** | **16** |  |  |  |  |
| **3** | **Religion** |  |  |  |  |  |  |
|  | 1)Hindu | **4** | **8** | **-** | **1** | **0.03** | **NS** |
|  | 2)Muslim | **1** | **19** |  |  |  |  |
|  | 3)Christian |  |  |  |  |  |  |
|  | 4)Any other |  |  |  |  |  |  |
| **4** | **Economic status** |  |  |  |  |  |  |
|  | 1)Below poverty | **0** | **9** | **-** | **1** | **0.52** | **NS** |
|  | 2)Above poverty | **1** | **22** |  |  |  |  |
| **5** | **Type of diet** |  |  | **-** | **1** | **0.29** | **NS** |
|  | 1)Vegetarian | **1** | **4** |  |  |  |  |
|  | 2)Nonvegetarian | **1** | **26** |  |  |  |  |
| **6** | **Food cravings during Menstrual cycle** |  |  | **-** | **1** | **1.00** | **NS** |
|  | 1)Sweet foods | **1** | **13** |  |  |  |  |
|  | 2)Spicy foods | **1** | **17** |  |  |  |  |
| **7.** | **Age of Menarche** |  |  |  |  |  |  |
|  | 1)<14 years | **9** | **17** | **0.731** | **1** | **0.39** | **NS** |
|  | 2)>14 years | **1** | **5** |  |  |  |  |
| **8.** | **Cycle intervals** |  |  |  |  |  |  |
|  | 1)<25 years | **0** | **10** | **-** | **1** | **1.00** | **NS** |
|  | 2)> 25 years | **1** | **21** |  |  |  |  |
| **9.** | **Duration of blood flow** |  |  |  |  |  |  |
|  | 1) ≤ 3days | **0** | **12** | **-** | **1** | **1.00** | **NS** |
|  | 2)>3days | **1** | **19** |  |  |  |  |
| **10.** | **Menstrual location of pain** |  |  | **-** | **1** | **1.00** | **NS** |
|  | 1)Lower abdomen | **1** | **23** |  |  |  |  |
|  | 2) Inguinal region | **0** | **8** |  |  |  |  |
| **11.** | **Family history of Dysmenorrhea** |  |  | **-** | **1** | **1.00** | **NS** |
|  | 1)First line relatives | **1** | **18** |  |  |  |  |
|  | 2)Second line relatives | **0** | **13** |  |  |  |  |
| **12.** | **Symptoms of Dysmenorrhea** |  |  | **-** | **1** | **1.00** | **NS** |
|  | 1)Tiredness& Irritability | **1** | **23** |  |  |  |  |
|  | 2)Inability &Concentrate at work | **0** | **8** |  |  |  |  |

The association between the socio demographic variables of the Experimental group-II Age of the (p= 0.03),Weight of (x2= 0.32,p=0.03), Religion of (p=0.03), Economic status (p=0.52),Type of diet (p= 1.00), Food craving (p=0.10), age of menarche (x2= 0.731,p=0.39), Menstrual cycle intervals (x2= 0.416,p=0.51),Duration of blood flow (p=1.00), Menstrual location of pain (p= 1.00,) Family history of Dysmenorrhea, Symptoms of Dysmenorrhea (p=1.00), Dysmenorrhea along with Pain (p=1.00).

**CHAPTER- VI**

**DISCUSSION**

The present study was under taken to compare the effectiveness of ginger tea verses hot water for Dysmenorrhea among nursing students at Kolar. This is True experimental study. Data collection through purposive sampling and design was adopted for the study and simple random method was used for Experimental group-I (32)and Experimental group-II(32) assess the level of Dysmenorrheal pain among Nursing students.

The conceptual frame work based on Imogene Kings Goal attainment theory was applied in this present study. The level of dysmenorrheal pain and though this intervention decrease the level of Dysmenorrheal pain. This study executing the present study in phased manner. Supported the researcher in planning and Were analyzed and presented in the form of table and graph in chapter-V. the findings obtained were discussed as follow .

**Socio- demographic variables of both groups Experimental group-I and Experimental group-II.**

Age:

With regard to age , majority of nursing students in Experimental group-1(84%) belongs to (18-19) and 16% belongs to between the age group of (20-21). Experimental group-II (59%) belongs to the age group between (18- to19) and 25% of belongs to (20-21) and only 3% belongs to between the age group of (24-25) years.

**Weight:**

With regard to Weight , majority of nursing students in Experimental group-1(3%) belongs to <40kg and (16%) belongs to between the Weight of (41-44 Kg) and (19%) belongs to 45- 50 kg, (62%) belongs to the weight of >50 kgs. Experimental group-II (3%) belongs to the weight of < 40kg and (6% ) of between (41- 44Kg) and 22% of belongs to (45-50 Kg) and 66% belongs to between >50kgs.

**Religion**

With regard to religion , majority of nursing students in Experimental group-I(41%) belongs to

Hindu and(59%) belongs to Christian. Experimental group-II (22%) belongs to Hindu and (88%) belongs to Christian.

**Marital status**

With regard to marital status, majority of nursing students in Experimental group-I and Experimental group-II (100%) belongs to Unmarried only.

**Economic status**

With regard to Economic status , majority of nursing students in Experimental group-I (63%) belongs to Above poverty line and (37% ) belong to Below poverty line. in Experimental group-II (28%)belongs to Above poverty line and (72%) belongs to below poverty line.

**Type of diet**

With regard to type of diet , majority of nursing students in Experimental group-I (6%) belong to vegetarian and (57%) belongs to non-vegetarian and (37%) belongs to mixed diet. In experimental group-II only (12%) belongs to vegetarian, (44%) belongs to non- vegetarian and (44%) belongs to mixed diet.

**Food craving during menstrual cycle**

With regard to type of food craving during menstrual cycle, majority of nursing students in Experimental group-I (37%) is having craving of sweet foods and (63%) is having a craving of spicy foods. In Experimental group-II belongs to(44%) is having of food craving of sweets, (56%) having a food craving of spicy foods.

All socio demographic variable taken from the reference of comapative studies 47

**Objective To compare the effectiveness of ginger tea consumption and Hot water consumption among nursing students.**

With regard to pre test, the obtained mean value of Post test in the Experimental group-I Mean was 5.28 with SD of 1.54where as in the Experimental group-II Dysmenorrheal pain the mean value was 1.12 with SD of 1.12. In this study Ginger tea is effective for to reduce the Dysmenorrheal pain compared the Hot water. To support this finding there were no studies. This shows that ginger tea is effective for the Dysmenorrhea compared the than hot water among Nursing students.

With regards Independent t- test Experimental group- I mean value.

The Questions related to Dysmenorrhea is the over all n=(64) 32 in each group. experimental group-1and experimental group-II df is 62 for both groups. Both groups independent t- value is for both groups 7.377, p value 0.390. statistically significance of the both groups.

**Objective to find the association between level of dysmenorrheal after administration of ginger tea and hot water with the selected demographic variables.**

The fourth objective was to find the association between the level of dysmenorrhea after intervention with the selected demographic variables. The level of dysmenorrhea pain statistically not significance for this fisher exact test done the P value is 1.000. There was no significant association between weight of nursing student. Statistically not significant with x2 = 0.794, P value is 0.3730. There is no significant with the religion x2 = 0.550, P value is 0.4583 statistically not significant. There was no association between economic status x2 = 0.372, P value is 0.5421 statistically not significant. The association between type of diet for these fisher exact test done P value= 1.0000 statistically not significant. There was no association food cravings x2=2.669, P value = 0.1023. This is association of experimental group 1.

Experimental group 2 there was statistically not significant association between age for this fisher exact test done P value=0.026, There is no association between weight x2=0.794, P value=0.3730. There is no association religion fisher exact test than P=0.0236 statistically not significant. There is no association between type of diet.P=0.2923 next ther is no association between food cravings P value=1.40 statistically not significant.

**CONCLUSION**

This chapter presents the major findings of the study, the conclusion drawn implication, limitation, suggestion and recommendation for future study.

This study was aimed to compare Dysmenorrheal level of pain after intervention and evaluate the effectiveness and association with the socio demographic variables in Sri Devaraj Urs College of Nursing at Kolar. The data was collected from 64 among nursing students.

**The objective of the study:-**

**OBJECTIVES OF THE STUDY**

1.To assess the level of Dysmenorrhea among nursing students using modified Mc Caffery numerical pain scale.

2. To compare the Ginger tea consumption and Hot water consumption for dysmenorrhea after administration of intervention.

3.To find the association between the level of dysmenorrhea after intervention with the selected demographic variables.

# RESEARCH HYPOTHESIS:

**H01:** There was a significant difference between Ginger tea and hot water for Dysmenorrhea.

**H02:** There was no significant difference between Ginger tea and hot water for Dysmenorrhea.

**The major findings of the study:-**

In this present study shows With regard to age , majority of nursing students in Experimental group-1(84%) belongs to (18-19) and 16% belongs to between the age group of (20-21). Experimental group-II (59%) belongs to the age group between (18- to19) and 25% of belongs to (20-21) and only 3% belongs to between the age group of (24-25) years.

With regard to Weight , majority of nursing students in Experimental group-1(3%) belongs to <40kg and (16%) belongs to between the Weight of (41-44Kg) and (19%) belongs to 45- 50 kg, (62%) belongs to the weight of >50 kgs. Experimental group-II (3%) belongs to the weight of < 40kg and (6% ) of between (41- 44Kg) and 22% of belongs to (45-50Kg) and 66% belongs to between >50kgs.

With regard to religion , majority of nursing students in Experimental group-I(41%) belongs toHindu and(59%) belongs to Christian. Experimental group-II (22%) belongs to Hindu and (88%) belongs to Christian.

With regard to marital status, majority of nursing students in Experimental group-I and Experimental group-II (100%) were Unmarried.

With regard to Economic status , majority of nursing students in Experimental group-I (63%) were Above poverty line and (37% ) belong to Below poverty line. in Experimental group-II (28%)belongs to Above poverty line and (72%) were Below poverty line.

With regard to type of diet , majority of nursing students in Experimental group-I (6%) belong to vegetarian and (57%) belongs to non-vegetarian and (37%) belongs to mixed diet. In experimental group-II only (12%) belongs to vegetarian, (44%) belongs to non- vegetarian and (44%) belongs to mixed diet.

With regard to type of food craving during menstrual cycle, majority of nursing students in Experimental group-I (37%) is had craving for sweets(63%) is had a craving for spicy foods. In Experimental group-II belongs to(44%) is had for Sweets, (56%) had craving for Spicy food.

The data presented by after the intervention of the both groups Experimental group-I (32) Experimental group-II(32) participants.

Regarding the association of the Dysmenorrheal pain for selected socio demographic variables Age, Weight, Religion, Marital status, Economic status, Type of diet, Food craving revealed that was no significant Age p value 1.000, Weight (X2 = 0.794) p=0.3730, Religion (X2 = 0.550) p value 0.4583, Marital status p value = 0.6367, Economic status (X2 = 0.372) p value= 0.5421, Type of diet p value = 1.0000, Food craving (X2 = (2.669) p value = 0.1024 for experimental group-I. For Experimental group-II Age p value 0.0326, Weight (X2 = 0.794) p=0.3730, Religion p value 0.326, Marital status p value = 1.0000, Economic status p value= 0.5251, Type of diet p value = 0.2923, Food craving p value = 1.0000 at 0.05 level of significance. The obtained X2 value with df at 1 is

Respectively. Hence the null hypothesis rejected.

The was a significant association between the Dysmenorrheal pain X2 value was lesser than the table value df 31 at 0.05 level of significance. Hence the null hypothesis was rejected..

Over all findings of the clearly showed that majority the level of Dysmenorrheal pain was decreased one level from severe to moderate and moderate to mild in the both experimental groups like Experimental group-I& Experimental group-II.

**IMPLICATION OF THE STUDY**

The investigator has drawn the following implication from the study which was of vital concern for nursing practice and recommendation for nursing research.

**NURSING PRACTICE**

Nurses the key persons of the health team, who play vital role in the promotion and maintenance of health.

Nurses can maintain their health with in the simple resources.

In community health setups the health status maintain good.

**NURSING EDUCATION**

Nursing professionals working in hospital setting can create an opportunity to teach and improve the knowledge regarding Dysmenorrheal pain.

Nursing student can educate in the community how to manage the dysmenorrheal pain.

In the community area and school setting they can practice this to releave the Dysmenorrheal pain.

**NURSING ADMINISTRATION**

Nursing professionals working in community hospital setup and area can create a opportunity to practice Ginger tea for Dysmenorrhea.

Nurse administer can bring awareness among the public in ginger tea for Dysmenorrheal pain.

The nurse as an administrator can enhance the accessibility, availability and quality of Dysmenorrheal pain.

**NURSING RESEARCH**

The findings of the study can disseminated to clinical nurse practitioners, student nurses through web site, literature journals etc. the findings of the study help the adolescent girls and nursing students can practice to relieve the Dysmenorrheal pain in community settings.

**LIMITATION OF THE STUDY**

1. The study was conducted n a single area.
2. The study is limited to adolescent nursing students between the age group of 18-24 years.
3. Estimating the Dysmenorrhea level moderate and severe.

**RECOMMENDATIONS**

1. Similar study can done in large population
2. Similar study can dine in community area among adolescent girls.
3. a similar study can be conducted with the other age group.

**SUMMARY**

A study to evaluate the effectiveness of Ginger tea versus Hot water among I year BSc Nursing students was conducted at Sri Devaraj Urs Nursing College, Kolar. For the study true experimental research with pre and post test design was used. Through simple random sampling technique, 64 students were allotted to student Experimental group-I(32 students) and Experimental group-II (32 students) for interventional group. Then both groups were administered with the intervention Ginger tea and Hot water. Then second menstrual cycle 4th day post test was conducted using modified Mc caffery pain scale and self administered structured knowledge questionnaire. The result reveled that, there was an decreased mean scoress of 5.28 in Ginger tea Experimental group-I when compared to Hot water there was an increased mean score of 7.78 in Experimental group-II. when compared in Hot water indicating that, Ginger tea was effective than Hot water in Reducing the pain score among the I BSc Nursing students.

**REFERENCES**:

1.Latha S, Venketesan L. Effectiveness of Ginger tea on dysmenorrhea among college student. International Journal of Applied Research. [( online201 cited 4 apr 2023)] volume 6;2(12): page no:669-71.

Available from <https://d1wqtxts1xzle7.cloudfront.net/51149686/GINGER_TEA-libre.pdf?1483360510=&response-content-disposition=inline%3B+filename%3DEffectiven>;

2. Agarwal AK, Agarwal A. A study of dysmenorrhea during menstruation in adolescent girls. Indian journal of community medicine: official publication of Indian Association of Preventive & Social Medicine. [( Online 2010 Jan ,cited 3apr 2023)]; volume:35(1): pae no:159.

Avilable: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2888348/>

3.Vlachou E, Owens DA, Lavdaniti M, Kalemikerakis J, Evagelou E, Margari N, Fasoi G, Evangelidou E, Govina O, Tsartsalis AN. Prevalence, wellbeing, and symptoms of dysmenorrhea among university nursing students in Greece. Diseases.[( online 2019 Jan 8, 4 apr 2023)]; volume:7(1) page no:5.

Avilable ; <https://www.mdpi.com/2079-9721/7/1/5>

4.Tadese M, Kassa A, Muluneh AA, Altaye G. Prevalence of dysmenorrhoea, associated risk factors and its relationship with academic performance among graduating female university students in Ethiopia: a cross-sectional study. BMJ open. [( online ;2021 Mar, cited 5 apr 2023)] volume 1;11(3): page no:043814.available from;

5..Negi R, Sharma SK, Gaur R, Bahadur A, Jelly P. Efficacy of ginger in the treatment of primary dysmenorrhea: a systematic review and meta-analysis. Cureus. 2021 Mar 6;13(3).

Available from:

<https://www.cureus.com/articles/52509-efficacy-of-ginger-in-the-treatment-of-primary-dysmenorrhea-a-systematic-review-and-meta-analysis#!/>

6.Smith RP, Kaunitz AM. Patient education: Painful menstrual periods (dysmenorrhea)(Beyond the Basics). Obstetrics, Gynecology and Women's Health. Topic. 2017;2174

.avilable form; <https://www.uptodate.com/contents/painful-menstrual-periods-dysmenorrhea-beyond-the-basics>

7.Kashefi F, Khajehei M, Tabatabaeichehr M, Alavinia M, Asili J. Comparison of the effect of ginger and zinc sulfate on primary dysmenorrhea: a placebo-controlled randomized trial. Pain Management Nursing. 2014 Dec 1;15(4):826-33.

Available from <https://www.google.com/search?q=Comparison+of+the+effect+of+ginger+and+zinc+sulfate+on+primary+dysmenorrhea%3A+a+placebo-controlled+randomized+trial&oq=Comparison+of+the+effect+of+ginger+and+zinc+sulfate+on+primary+dysmenorrhea%3A+a+placebo-controlled+randomized+trial&aqs=chrome..69i57.3904j0j9&sourceid=chrome&ie=UTF-8>

8.Crasta S, Fernandes P, Paul S. Ginger Tea on Dysmenorrhoea Among Nursing Students. Journal of Health and Allied Sciences NU. 2019 Apr;9(02):64-75.

Hassan Nagy; Karen Carlson; Moien AB Khan. Dysmenorrhea,Nov :12;2023.

Amutha VM. Effectiveness of ginger tea on dysmenorrhea among college students in sree mukambika college of nursing( Doctoral dissertation, SreeMookambika college of nursing, KulaseKhram). page no 12-16.avilable <http://repository-tnmgrmu.ac.in/2765/1/3003137amuthavm.pdf>.

9. Anusha DB, Shridevi K, Manoj P, Goparaju A. Prevalence and determ inants of dysmenorrhea: A cross-sectional study. MRIMS Journal of Health Sciences. 2021 Jul 1;9(3): page no:103. Avilable from; <https://mrimsjournal.com/article.asp?issn=2321-7006;year=2021;volume=9;issue=3;spage=103;epage=108;aulast=B>.

10. MacGregor B, Allaire C, Bedaiwy MA, Yong PJ, Bougie O. Disease burden of dysmenorrhea: Impact on life course potential. International journal of women's health. 2023 Dec 31: page no499509.

11.<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10081671/>

<https://www.google.com/search?q=Comparison+of+the+effect+of+ginger+and+zinc+sulfate+on+primary+dysmenorrhea%3A+a+placebo-controlled+randomized+trial&oq=Comparison+of+the+effect+of+ginger+and+zinc+sulfate+on+primary+dysmenorrhea%3A+a+placebo-controlled+randomized+trial&aqs=chrome.0.69i59j69i61.2469j0j7&sourceid=chrome&ie=UTF-8>

12. Kural M, Noor NN, Pandit D, Joshi T, Patil A. Menstrual characteristics and prevalence of dysmenorrhea in college going girls. Journal of family medicine and primary care. 2015 Jul 1;4(3):426-31. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4535108/>

13.Osayande AS, Mehulic S. Diagnosis and initial management of dysmenorrhea. American family physician. 2014 1;89(5);pageno:341Mar. Available from:https://www.google.com/search?q=dysmenorrhea+prevalence+worldwide&sca\_esv=a63c16f2bb691621&rlz=1C1GCEK\_enIN1068IN1068&biw=1640&bih=732&sxsrf=ADLYWIKJ\_Lv3bntVHzXXHCXBcqiC9Cxiuw%3A1720680482804&ei=IoCPZpfGMIqcseMPgYK40Ac&oq=statistical+dysmenorrhea+level+in+indi&gs\_lp=Egxnd3Mtd2l6LXNlcnAiJnN0YXRpc3RpY2FsIGR5c21lbm9ycmhlYSBsZXZlbCBpbiBpbmRpKgIIATIHECMYJxiuAjIIEAAYgAQYogQyCBAAGKIEGIkFMggQABiABBiiBDIIEAAYgAQYogQyCBAAGIAEGKIESJo4UJgOWJgOcAF4AZABAJgBdqABdqoBAzAuMbgBAcgBAPgBAZgCAqACiQHCAgoQABiwAxjWBBhHmAMAiAYBkAYIkgcDMS4xoAeWCA&sclient=gws-wiz-serp

14.https://www.researchgate.net/publication/377866448\_Prevalence\_of\_dysmenorrhoea\_and\_its\_management\_strategies\_among\_females\_a\_cross-sectional\_study\_in\_the\_tribal\_district\_Koraput.

15.<https://www.google.com/search?q=dysmenorrhea+prevalence+rate+in+karnataka&sca_esv=58fb73deabeb3611&sca_upv=1&ei=pqmYZrngC76R4-EP19UB&ved=0ahUKEwi5y5CV76-HAxW->

16.Omidvar S, Bakouei F, Amiri FN, Begum K. Primary dysmenorrhea and menstrual symptoms in Indian female students: prevalence, impact and management. Global journal of health science. 2016 Aug;8(8): page no:135.

17. Cherenack EM, Rubli J, Melara A, Ezaldein N, King A, Alcaide ML, Raccamarich P, Fein LA, Sikkema KJ. Adolescent girls’ descriptions of dysmenorrhea and barriers to dysmenorrhea management in Moshi, Tanzania: A qualitative study. PLOS global public health. 2023 Jul 6;3(7):e0001544.

18.Firdaus F, Hasina SN, Herlambang T. The differences of effectiveness ginger water drink with warm compress therapy on dysmenorrhea in adolescents at senior high school of Sangkapura, Bawean Island. InAIP Conference Proceedings 2023 Jan 4 (Vol. 2679, No. 1). AIP Publishing.

19. Abreu-Sánchez A, Ruiz-Castillo J, Onieva-Zafra MD, Parra-Fernández ML, Fernández-Martínez E. Interference and impact of dysmenorrhea on the life of Spanish nursing students. International Journal of Environmental Research and Public Health. 2020 Sep;17(18):6473.

20 . Mesfin F, Berhane Y, Worku A. Prevalence and associated factors of stunting among primary school children in Eastern Ethiopia. Nutrition and Dietary Supplements. 2015 Sep 18:61-8. Available from: <https://www.tandfonline.com/doi/full/10.2147/NDS.S80803>

21. Armour M, Parry K, Manohar N, Holmes K, Ferfolja T, Curry C, MacMillan F, Smith CA. The prevalence and academic impact of dysmenorrhea in 21,573 young women: a systematic review and meta-analysis. Journal of women's health. 2019 Aug 1;28(8):1161-71.

22. Rajan JK. Effect of Ginger tea on Dysmenorrhea among nursing students in Indore, Madhya Pradesh, India. Journal of Bioscience and Applied Research. 2018 Oct 25;4(4):361-76. <https://jbaar.journals.ekb.eg/article_150517.html>

23. S., Shalini., Pooja, Godiyal. Effectiveness of ginger tea on primary dysmenorrhea among early adolescent girls. Indian journal of applied research, (2023). doi: 10.36106/ijar/1405790 available from: <https://typeset.io/papers/effectiveness-of-ginger-tea-on-primary-dysmenorrhea-among-2vnmxkj5>

24. Nilakshi, Bordoloi., Nongmeikapam, Monika., Sunday, June, Langstang. A study to assess the effect of ginger tea on dysmenorrhea among b.sc nursing students in a selected college, guwahati, assam. International journal of advanced research, <https://typeset.io/papers/a-study-to-assess-the-effect-of-ginger-tea-on-dysmenorrhea-2eqealsh>

25. .Effect of Spice Drinks (Red Ginger and Cinnamon) on Dysmenorrhea Pain. International Journal of Science and Society, (2022). doi: 10.54783/ijsoc.v4i4.592. <https://typeset.io/papers/warm-water-compress-therapy-and-ginger-water-decoction-can-16kkxi7k>

26. M., Naveed., Muhammad, Imran., Sidra, Khalid., Inaba, Shujaat, Qureshi., Ishtiaque, Ahmad., Saima, Inayat., Faiza, Imtiaz. Comparative Effect of Ginger and Vitamin E Supplements on Pain and Quality of Life among Females with Dysmenorrhea-A Randomized Controlled Trial. Pakistan biomedical journal, (2022). doi: 10.54393/pbmj.v5i1.266. <https://typeset.io/papers/comparative-effect-of-ginger-and-vitamin-e-supplements-on-2b8jltu1>

27. Mika, Oktarina., Nuril, Absari., Choralina, Eliagita. The Effect of Administration of Ginger Decil Water on Reduce the Levels of Disminore Pain in Adolescent Women at SMAN 03 Bengkulu City. (2023).;1(1):8-13. doi: 10.58723/ijhrd.v1i1.346. <https://typeset.io/papers/the-influence-of-giving-ginger-water-on-the-pain-of-24wusox64l>

28. Dagnanesh, Kinde., Edosa, Jabesa, Tolasa. Comparative Study on Ginger Supplement and Aerobic Exercise on Primary Dysmenorrhea: The Case of Debre Markos University Students, Amhara Regional State, Ethiopia. Systematic Reviews in Pharmacy, (2021).;12(6):426-432. doi: 10.21203/RS.3.RS-537457/V1. <https://typeset.io/papers/comparative-study-on-ginger-supplement-and-aerobic-exercise-3rbuesx0mi>

29. Effect of Spice Drinks (Red Ginger and Cinnamon) on Dysmenorrhea Pain. International Journal of Science and Society, (2022).;4(4):437-448. doi: 10.54783/ijsoc.v4i4.592. <https://typeset.io/papers/effect-of-spice-drinks-red-ginger-and-cinnamon-on-1cyalu4r>

30. Lavanya, S., Annie, Annal, M., Umamaheswari, R., Poongodi, V. Effectiveness of Dried Ginger On Dysmenorrhea Associated Symptoms Among Adolescent Girls at A Selected College of a South Indian Town – A Non-Random Pre-Experimental Design Study. International journal of life science and pharma research, (2023).L21-L26. doi: 10.22376/ijlpr.2023.13.2.sp2.l21-l26.

<https://typeset.io/papers/effectiveness-of-dried-ginger-on-dysmenorrhea-associated-136eq0bp>

31. Rizu, Negi., Suresh, K, Sharma., Rakhi, Gaur., Anupama, Bahadur., Prasuna, Jelly. Efficacy of Ginger in the Treatment of Primary Dysmenorrhea: A Systematic Review and Meta-analysis.. Cureus, (2021).;13(3) doi: 10.7759/CUREUS.13743. <https://typeset.io/papers/efficacy-of-ginger-in-the-treatment-of-primary-dysmenorrhea-hur8e1egtl>

32. Dagnanesh, Kinde., Edosa, Jabesa, Tolasa. Comparative Study on Ginger Supplement and Aerobic Exercise on Primary Dysmenorrhea: The Case of Debre Markos University Students, Amhara Regional State, Ethiopia. Systematic Reviews in Pharmacy, (2021).;12(6):426-432. doi: 10.21203/RS.3.RS-537457/V1 <https://www.sysrevpharm.org/articles/comparative-study-on-ginger-supplement-and-aerobic-exercise-on-primary-dysmenorrhea-the-case-of-debre-markos-university-.pdf>

33.Jinu, K, Rajan. Effect of Ginger tea on Dysmenorrhea among nursing students in Indore, Madhya Pradesh, India. (2018).;4(4):361-376. doi: 10.21608/JBAAR.2018.150517.

<https://jbaar.journals.ekb.eg/article_150517_c6278095f10a2ef444ab8ee792aa21d7.pdf>

34. Mega, Hartati., Nurul, Ainul, Shifa., Susaldi, Susaldi. Warm Water Compress Therapy and Ginger Water Decoction Can Reduce Dysminorhea Pain. (2023).;2(1):114-121. doi: 10.53801/jcn.v2i1.60 <https://typeset.io/papers/warm-water-compress-therapy-and-ginger-water-decoction-can-16kkxi7k> <https://journals.sagamediaindo.org/index.php/JCN/article/view/60>

35. Sheetal, Crasta., Philomena, Fernandes., Shynee, Paul. Ginger Tea on Dysmenorrhoea Among Nursing Students. (2019).;09(02):64-75. doi: 10.1055/S-0039-1700705 <https://www.thieme-connect.com/products/ejournals/pdf/10.1055/s-0039-1700705.pdf>

36. Mukhoirotin, Mukhoirotin., Siti, Urifah. Using warm compresses to reduce IL-1β levels in dysmenorrhea: An evaluation of quasy experimental study. Journal of holistic nursing science, (2022).;9(1):38-43. doi: 10.31603/nursing.v9i1.6858 <https://journal.unimma.ac.id/index.php/nursing/article/view/6858>

37. Aditi, Chaudhuri., Amarjeet, Singh., Lakhbir, Dhaliwal. A randomised controlled trial of exercise and hot water bottle in the management of dysmenorrhoea in school girls of Chandigarh, India.. Indian journal of physiology and pharmacology, (2013).;57(2):114-122. <https://pubmed.ncbi.nlm.nih.gov/24617160/>

38. Shih-Ju, Wu., Shih-Ju, Wu., Wei-Chih, Kan., Chih-Chung, Shiao. Warm-water footbath improves dysmenorrhoea and heart rate variability in college students: a randomised controlled trial.. Journal of Obstetrics and Gynaecology, (2021).1-7. doi: 10.1080/01443615.2021.1945007 <https://pubmed.ncbi.nlm.nih.gov/34560833/#:~:text=The%20randomised%20controlled%20trial%20enrolling,correlated%20with%20pain%20severity%20improvement>.

39. Dr.R.Shankar, Shanmugam., Dr.S., Ani, Grace, Kalaimathi. Effectiveness of hot application on dysmenorrhea. International journal of applied research, (2016).;2(4):720-722. [htps://www.allresearchjournal.com/archives/?year=2016&vol=2&issue=4&part=L&ArticleId=1868](https://www.allresearchjournal.com/archives/?year=2016&vol=2&issue=4&part=L&ArticleId=1868)

40. Bertrand, Graz., Mona, Savoy., Thierry, Buclin., Eric, Bonvin. [Dysmenorrhea: patience, pills or hot-water bottle?].. Revue médicale suisse, (2014).;10(452):2285-2288. <https://pubmed.ncbi.nlm.nih.gov/25562981/>

41. Nurrahmaton, Nurrahmaton., Dewi, Sartika. Warm Compress For Reducing Middle Peace In Adolescent Women. Jurnal MID-Z, (2023).;6(1):33-41. doi: 10.56013/jurnalmidz.v6i1.2123

<https://ejurnal.uij.ac.id/index.php/JM/article/view/2123>

42. Junyoung, Jo., Sun, Haeng, Lee. Heat therapy for primary dysmenorrhea: A systematic review and meta-analysis of its effects on pain relief and quality of life. Scientific Reports, (2018).;8(1):16252-16252. doi: 10.1038/S41598-018-34303-Z <https://pubmed.ncbi.nlm.nih.gov/30389956/>

43. Shirvani MA, Motahari-Tabari N, Alipour A. Use of ginger versus stretching exercises for the treatment of primary dysmenorrhea: a randomized controlled trial. Journal of integrative medicine. 2017 Jul 1;15(4):page no :295-301.

44.Samantha, R., Murray. Are Topical Heat Patches More Effective at Relieving Pain Associated With Dysmenorrhea Than OTC NSAIDs (Ibuprofen 400 mg PO Q8h or Acetaminophen 500 mg PO Q6h) in Menstruating Women 18 and Over. (2015). <https://digitalcommons.pcom.edu/cgi/viewcontent.cgi?article=1236&context=pa_systematic_reviews>

45. Gyan, Karla, Advíncola, dos-Santos., Natália, Cristina, de, Oliveira, Vargas, e, Silva., Fábio, Marcon, Alfieri. Effects of cold versus hot compress on pain in university students with primary dysmenorrhea. (2020).;3(1):25-28. doi: 10.5935/2595-0118.20200006 <https://www.scielo.br/j/brjp/a/zshLLCt7dC7JcsLq89frNgK/?format=pdf&lang=en>

46. Revati, Joshi., Shweta, Pachpute. Immediate Effect of Hot Pack versus Kinesiotape and Hot Pack on Pain in Primary Dysmenorrhea. International Journal of Health Sciences and Research, (2021).;11(8):11-16. doi: 10.52403/IJHSR.20210803 <https://www.researchgate.net/publication/353753187_Immediate_Effect_of_Hot_Pack_versus_Kinesiotape_and_Hot_Pack_on_Pain_in_Primary_Dysmenorrhea>

47.Tsai IC, Hsu CW, Chang CH, Lei WT, Tseng PT, Chang KV. Comparative Effectiveness of Different Exercises for Reducing Pain Intensity in Primary Dysmenorrhea: A Systematic Review and Network Meta-analysis of Randomized Controlled Trials. Sports Medicine-Open. 2024 May 30;10(1):63.

Available from: <https://www.google.com/search?q=Comparative+Effectiveness+of+Different+Exercises+for+Reducing+Pain+Intensity+in+Primary+Dysmenorrhea%3A&oq=Comparative+Effectiveness+of+Different+Exercises+for+Reducing+Pain+Intensity+in+Primary+Dysmenorrhea%3A&aqs=chrome..69i57j69i60l2.2989j0j7&sourceid=chrome&ie=UTF-8>

**ANNEXURES**

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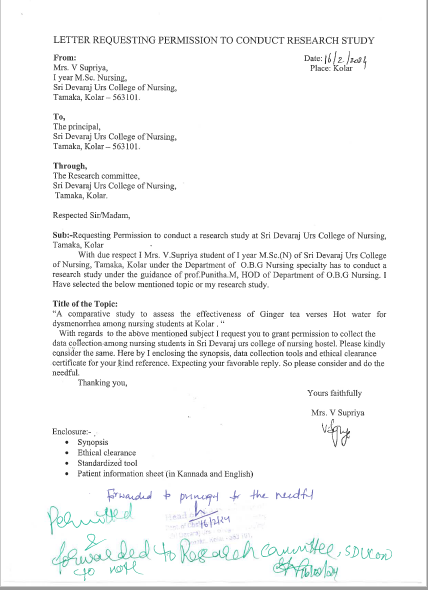
**ANNEXURE-I**

**ETHICAL COMMITTEE CLEANRANCE CERTIFICATE**

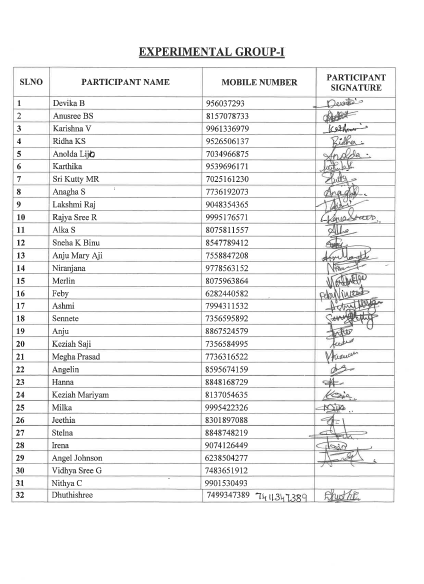


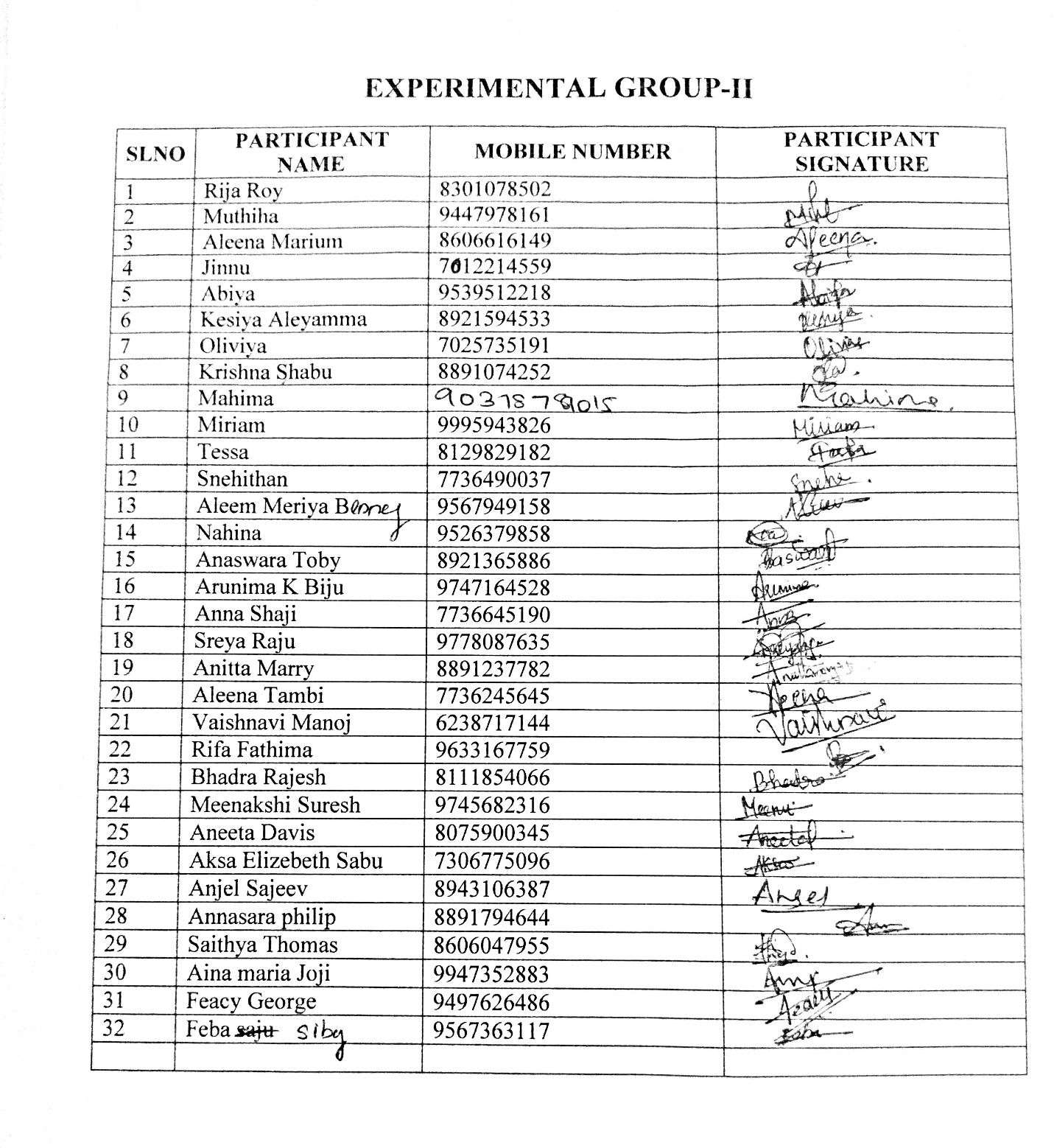
**ANNEXURE-II**

**LETTER REQUESTING PERMISSION FOR CONDUCTING RESEARCH STUDY**

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**ANNEXURE-III**

****

**ANNEXURE-IV**

**ANNEXURE-V**

**LETTER REQUESTING OPINIONS AND SUGGERSTIONS OF EXPERTS FOR ESTABLISHING CONTENT VALIDITY OF RESEARCH TOOL**

FROM,

V SUPRIYA,

IST YEAR MSc. [N],

SDUCON,

TAMAKA, KOLAR.

TO,

Respected madam/sir

**Sub** : Requesting for suggestion of experts for establishing content validity of research tool-reg

I am the Ist year MSc. [N] student selected the below mentioned topic for the research project for the partial fulfillment of M.sc ((n) degree.

**Title of the topic**

**A COMPARATIVE STUDY TO EVALUATE THE EFFECTIVENESS OF GINGER TEA VERSES HOT WATER ON DYSMENORRHEA AMONG NURSING STUDENTS AT SELECTED NURSING COLLEGE, KOLAR.**

**OBJECTIVES OF THE STUDY**

1 To Assess the level of Dysmenorrhea among nursing students using modified McCaffery numerical pain scale.

2. To determine the effectiveness of ginger tea verses hot water among nursing study.

3. To find the association between level of dysmenorrheal before and after administration of ginger tea and hot water demographic variables.

With regard to this I request you to validate the structure knowledge questionnaires and provide your suggestion for its appropriateness and relevancy. Kindly consider and do the needful.

Thanking you.

Place: yours faithfully,

Date: Mrs. Supriya

Enclosure:

Synopsis

Tool

**ANNEXURE-VI**

**CRITERIA CHECLIST FOR VALIDATION OF THE TOOL**

Respected Madam/ Sir

Kindly go through the content and place a tick mark [ ✓] against each item given the criteria table ranging from relevant to not relevant. when found ‘not relevant’ or needs modification, Kindly give your valuable opinion or suggestions in the remarks column.

**SECTION-I DEMOGRAPHIC DATA**

**SECTION-II QUESTIONS RELATED TO DYSMENORRHEA**

**SECTION-III SEVERITY OF DYSMENORRHEA RELATED QUESTIONS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SLNO** | **RELEVANT** | **NEEDS MODIFICATIONS** | **NOT RELEVANT** | **REMARKS** |
| **1** |  |  |  |  |
| **2** |  |  |  |  |
| **3** |  |  |  |  |
| **4** |  |  |  |  |
| **5** |  |  |  |  |
| **6** |  |  |  |  |
| **7** |  |  |  |  |

**ANNEXURE-VII**

CONTENT FOR VALIDITY CERTIFICATE

I hereby certify that I have validated the tool of Mrs.VSupriya IIyear msc [Nursing] student of Sri Devaraj Urs College of Nursing Tamaka Kolar.who is under taking Research Dissertation as a requirement of Master of Nursing degree.

TITLE OF THE TOPIC

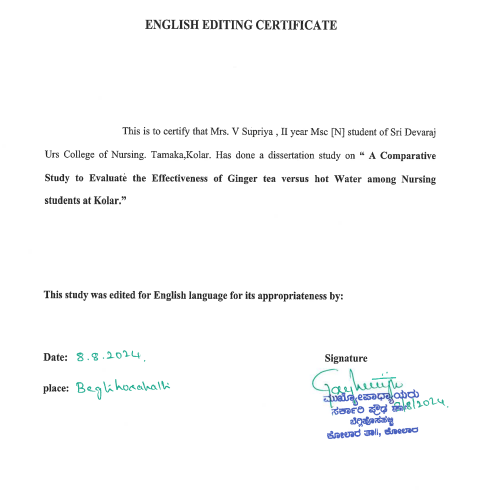
“A COMPARITIVE STUDY TO EVALUATE THE EFFECTIVENESS OF GINGER TEA VERSES HOT WATER ON DYSMENORRHEA AMONG NURSING STUDENTS AT KOLAR”

DATE:

PLACE: Name and signature

**ANNEXURE-VIII**

**ANNEXURE-IX**

****

**ANNEXURE-X**

**Written Informed Consent Form**

**Study Title:** A comparative Study to evaluate the effectiveness of ginger tea verses hot water on Dysmenorrhea among nursing students at selected nursing College, Kolar.

Code Number:

I confirm that I have read and understood the information given to me about this study and my role in it. I had opportunities to ask questions and my questions have been answered to my satisfaction.

or

I confirm that all information about this study and my role in it has been read / explained to me by a member of the investigating team in a language that I understand. I had opportunities to ask questions and my questions have been answered to my satisfaction.

b) I understand that my participation in this study is voluntary and that I am free to withdraw from the study at any time, without giving any reason and legal rights being affected.

c) I understand that my identity will not be revealed in any document or publication.

d) I agree not to restrict the use/publication of any data or results that arise from this study provided such use is only for scientific purposes.

e) I am aware that by agreeing to my participation in this investigation, I will have to give more time for training and assessments by the investigating team and that these assessments will not interfere with the benefits that I am entitled to or my daily routine.

f) I give my consent, voluntarily to take part in this study. I also agree for the investigator to record the observation/interview sessions whenever they are held.

Signature (or thumb impression) of the study participants /Legally Acceptable Representative:

Name of the study participant: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date: \_/\_/\_/\_\_\_\_\_

Place:

Study participant signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name of the investigator: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_/\_\_\_/\_\_\_\_\_

Place:

Study Investigator’s Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ANNEXURE-XI**

**Structured questions related to dysmenorrhea**

**Instructions:** kindly answer to all the questions. Give response to the option selected. Don’t leave any questions unanswered. Your answers will be kept confidential. The information collected will be only for study purpose only.

**SECTION –A SOCIODEMOGRAPHIC VARIABLE**

|  |  |  |
| --- | --- | --- |
| **Sl no** | **Questionnaires** | **Response** |
| **1** | Age |  |
|  | 1.1) 18-19 |  |
|  | 1.2) 20-21 |  |
|  | 1.3) 22-23 |  |
|  | 1.4) 24-25 |  |
| **2** | Weight |  |
|  | 2.1)<40kgs |  |
|  | 2.2)40-45kgs |  |
|  | 2.3)45-50kgs |  |
|  | 2.4)>50kgs |  |
| **3** | Religion |  |
|  | 3.1) Hindu |  |
|  | 3.2) Muslim |  |
|  | 3.3) Christian |  |
|  | 3.4)Any other |  |
| **4** | Marital status |  |
|  | 4.1) Married |  |
|  | 4.2) Unmarried |  |
| **5** | Socio Economic status. |  |
|  | 5.1) Above poverty line |  |
|  | 5.2) Below poverty line. |  |
| **6** | Type of diet |  |
|  | 6.1) Vegetarian |  |
|  | 6.2) Non-vegetarian |  |
|  | 6.3) Mixed diet |  |
| **7** | Age of menarche |  |
|  | 7.1) 11-12 |  |
|  | 7.2) 13-14 |  |
|  | 7.3) 15-16 |  |
|  | 7.4) 17-18 |  |
| **8** | Food Craving during menstrual cycle |  |
|  | 8.1) Sweets |  |
|  | 8.2) Spicy foods |  |
| **Section-II Question related to Dysmenorrhea** | | |
| 9 | Age of menarche |  |
|  | 91) 11-12 |  |
|  | 9.2) 13-14 |  |
|  | 9.3) 15-16 |  |
|  | 9.4) 17-18 |  |
| 10 | Menstrual cycle days |  |
|  | 10.1)22-24 days |  |
|  | 10.2)26-28days |  |
|  | 10.3)29-32days |  |
|  | 10.4)33-36days |  |
| 11 | Menstrual cycle days of blood flow |  |
|  | 11.1)2-3 days |  |
|  | 11.2)4-5 days |  |
|  | 11.3)6-7 days |  |
|  | 11.4)>8 days |  |
| 12 | Menstrual location of pain |  |
|  | 12.1) Lower abdomen |  |
|  | 12.2) Lumbar region |  |
|  | 12.3) Thighs |  |
|  | 12.4) Inguinal region |  |
| 13 | Family history of dysmenorrhea |  |
|  | 13.1) First line relatives |  |
|  | 13.2) Second line relatives |  |
| 14 | Dysmenorrhea symptoms along with pain |  |
|  | 14.1) Headache |  |
|  | 14.2) Nausea& vomiting |  |
|  | 14.3) Constipation |  |
|  | 14.4) Lethargy |  |
| **Section –III Questions related to Severity of the pain** | | |
| **15** | Type of dysmenorrhea pain |  |
|  | 15.1)Mild pain |  |
|  | 15.2)Moderate pain |  |
|  | 15.3)Severe pain |  |
| **16** | Menstrual cycle intensity of pain |  |
|  | 16.1) Continues |  |
|  | 16.2) Intermittent |  |
|  | 16.3) Prolonged |  |
| **17** | Menstrual cycle days of pain |  |
|  | 17.1) 0-1 days |  |
|  | 17.2) 2-3 days |  |
|  | 17.3) 4-5days |  |
|  | 17.4) >6 days |  |
| **18** | Did you find difficulty while performing simple activity |  |
|  | 18.1) Yes |  |
|  | 18.2) No |  |
| **19** | Did you find difficulty while performing moderate activity like ADL bathing combing etc |  |
|  | 19.1) Yes |  |
|  | 19.2) No |  |
| **20** | Did you find difficulty while performing vigorous activity like moving table etc |  |
|  | 20.1) Yes |  |
|  | 20.2) No |  |

**ANNEXURES-XII**

**Table :10 Nutritional information about fresh ginger**

|  |  |  |
| --- | --- | --- |
| FRESH CURRY GINGER 100 GRAMS | | |
| SLNO | NUTRITIVE FACTS | GRAMS/MG |
| 1 | TOTAL FAT | 0.8% |
| 2 | CHOLESTEROL | 0 mg |
| 3 | SODIUM | 13mg |
| 4 | POTTASIUM | 415 mg |
| 5 | TOTAL CARBOHYDRATES | 18% |
| 6 | PROTEIN | 0.8% |

**Health benefits of fresh ginger**

**Ginger image**

**1. Nausea relief**

Ginger has been used as a remedy for nausea and indigestion for centuries, and studies have shown this to be one folk remedy that actually works. Research suggests that consuming between 1 and 2 grams of ginger could help reduce symptoms of [nausea](https://www.webmd.com/digestive-disorders/understanding-nausea-vomiting-treatment) It can help with morning sickness, motion sickness, or side effects from chemotherapy.

**2. Blood sugar management**

We need more research, but there's some evidence that ginger might help people with diabetes manage their blood sugar levels when they take it regularly for a long time.

**3. Help with heavy periods**

A small study of high school girls with heavy periods found that those who were given ginger had much less blood loss during their cycles than girls who got [placebos](https://www.webmd.com/pain-management/what-is-the-placebo-effect) (pills with no active ingredients).

**4. Pain relief**

Ginger could help relieve some types of pain, including muscle soreness after exercise, and serious menstrual cramps.

**5. Inflammation reduction**

There are many causes of inflammation, including mild allergic reactions and overexertion. Early studies on ginger have shown that it may help reduce inflammation from both of these causes. One study showed that ginger extracts may help reduce [allergy symptoms](https://www.webmd.com/allergies/allergy-symptoms), though we need more research to confirm these findings. Another small trial suggested that consuming ginger after heavy exercise might help reduce knee muscle pain.

**6. Lower cholesterol**

High levels of cholesterol are linked to an increased risk of health problems such as heart disease and stroke. Some studies suggest that adding ginger to your diet can help reduce not only LDL cholesterol but also total cholesterol and triglycerides. This could lower your risk of heart problems and other cholesterol-related health issues.

**7. Fights Germs**

Certain chemical compounds in fresh ginger help your body ward off germs. They’re especially good at halting growth of bacteria like E.coli and shigella, and they may also keep viruses.

**8. Keeps Your Mouth Healthy**

Ginger’s antibacterial power may also brighten your smile. Active compounds in ginger called gingerols keep oral bacteria from growing. These bacteria are the same ones that can cause periodontal disease, a serious gum infection.

**9. Soothes Sore Muscles**

Ginger won’t whisk away muscle pain on the spot, but it may tame soreness over time. In some studies, people with muscle aches from exercise who took ginger had less pain the next day than those who didn’t.

**10. Eases Arthritis Symptoms**

Ginger is an anti-inflammatory, which means it reduces swelling. That may be especially helpful for treating symptoms of both rheumatoid arthritis and osteoarthritis.

**11. Curbs Cancer Growth**

Some studies show that bioactive molecules in ginger may slow down the growth of some cancers like colorectal, gastric, ovarian, liver, skin, breast, and prostate cancer. But much more research is needed to see if this is true.

**12. Protects Against Disease**

Ginger is loaded with antioxidants, compounds that prevent stress and damage to your body’s DNA. They may help your body fight off chronic diseases like high blood pressure, heart disease, and diseases of the lungs, plus promote healthy aging.

**13. Relieves Indigestion**

If you live with chronic indigestion, also called dyspepsia, ginger could bring some relief. Ginger before meals may make your system empty faster, leaving less time for food to sit and cause problems.

**BENEFITS OF HOT WATER**

**1. Improve Digestion:**

 Water consumption promotes regularity in the digestive tract by stimulating the digestive organs and increasing blood flow to the digestive system. Drinking hot water offers health benefits that include improved digestion. The body can more effectively eliminate waste as water passes through the stomach and intestines. Hot water can also aid in dispersing and dissolving food that the body may have difficulty digesting.

**2. Helps in weight loss:**

 Drinking warm water can boost the body's metabolism, potentially accelerating calorie burning. Consuming warm water before meals can create a feeling of fullness, helping reduce overall food intake and facilitating hot water weight loss. Additionally, warm water can aid digestion, reducing the chances of bloating and constipation, common obstacles to weight reduction.

**3. Helps in constipation:**

One of the benefits of drinking warm water is its potential to alleviate constipation. Warm water consumption stimulates the digestive tract and encourages bowel movements. It also softens stools, making them easier to pass. Furthermore, drinking hot water can be beneficial in preventing the onset of constipation.

**4. Helps enhance central nervous system functioning:**

 Warm water can enhance blood circulation, facilitating the delivery of oxygen and nutrients to the brain, thereby improving overall brain performance. Inadequate intake of hot or cold water can negatively affect the function of the nervous system, potentially altering mood and cognitive function. Drinking warm water may also reduce tension and anxiety, further benefiting the neurological system.

**5. Ease nasal congestion:**

  Drinking hot water can be beneficial for treating colds and improving nasal health. It reduces inflammation, thins mucus, and relieves sinus pressure, alleviating nasal congestion. Inhaling the steam produced by a cup of boiling water can help clear blocked sinuses and ease sinus headaches. Additionally, starting your day with hot lemon water may boost the immune system due to its anti-inflammatory and immune-enhancing properties.

**6. Keeps the hydration level intact:**

 Hot water consumption aids in reabsorbing lost fluids, especially during colder months when fluid loss is more common. Pregnancy, breastfeeding, strenuous exercise, and working in hot environments may require increased water intake. The soothing properties of hot water can encourage individuals to drink more, ensuring proper hydration. This also helps regulate body temperature and reduces the risk of dehydration.

**7. Helps reduce shivering in cold weather:**

  Another advantage of drinking hot water is its ability to reduce shivering in cold conditions. When the body is exposed to cold temperatures, it may start to tremble in an effort to generate heat and keep the body warm. However, drinking hot water can help increase body temperature, thereby reducing the need for shivering. Quickly consuming hot water allows individuals to maintain their body temperature with minimal effort, which can be especially helpful for those who exercise or work out in the cold.

**8. Helps reduce stress levels:**

  Drinking enough water can help one feel more at ease and happier. The relaxing effects of hot water can assist in relieving stress and promoting relaxation. So, it is recommended to take a moment to relax and enjoy a cup of hot water, as it can provide a moment of mindfulness.

**9. Lessen pain:**

  Hot water offers various advantages that can help alleviate physical discomfort. It enhances blood flow and circulation, particularly to injured muscles. Heat packs and hot water bottles are commonly used to alleviate discomfort. Drinking hot water may provide some internal pain relief as well. A hot water bath is a beneficial therapy for numerous ailments because it can help reduce pain and inflammation in muscles and joints.

**10. Helps promote the drinking of coffee and tea:**

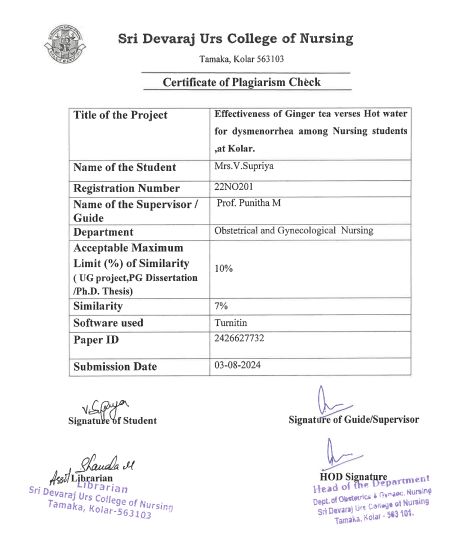
The preparation of both coffee and tea requires the use of hot water, and the availability of hot water facilitates the consumption of these beverages. Furthermore, the consumption of coffee and tea has been associated with various health benefits. These beverages reduce the risk of developing long-term health conditions, such as diabetes and heart disease, due to the antioxidants and other substances they contain, which combat free radical damage in the body.

**11. Eliminates the toxins:**

Drinking hot water raises body temperature and induces sweating, which helps eliminate toxins from the body. In fact, warm water can be especially beneficial for individuals with colds and coughs. Additionally, it stimulates the digestive process and aids in the breakdown of food, making digestion easier. Regular consumption of warm water can significantly improve the well-being of individuals experiencing stomach-related disorders like constipation, acidity, or even a cough or cold.

**12. Benefits of dental health:**

 Improved dental health is one of the many benefits of consuming warm water. Warm water can temporarily alleviate tooth pain and sensitivity, promoting comfort. It also stimulates blood flow in the gums, which enhances gum health and helps prevent gum disease. Additionally, it contributes to overall dental health by helping to eliminate tartar and plaque buildup on the teeth.

****

**Pretest**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 1 | 19 | 52 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 2 | 1 | 1 | 1 |
| 2 | 20 | 45 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 4 | 3 | 2 | 2 | 1 | 1 | 1 |
| 3 | 18 | 53 | 3 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 3 | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| 4 | 18 | 49 | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 2 | 1 | 2 | 3 | 1 | 1 | 0 | 1 | 1 |
| 5 | 18 | 44 | 1 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 4 | 3 | 2 | 1 | 1 | 1 | 1 |
| 6 | 18 | 41 | 3 | 2 | 1 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 3 | 1 | 3 | 2 | 1 | 1 | 1 | 1 |
| 7 | 18 | 43 | 1 | 2 | 2 | 1 | 1 | 1 | 2 | 2 | 4 | 1 | 2 | 2 | 3 | 2 | 1 | 1 | 1 | 1 |
| 8 | 18 | 58 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 3 | 4 | 3 | 1 | 2 | 1 | 1 | 1 |
| 9 | 18 | 58 | 1 | 2 | 1 | 3 | 2 | 1 | 2 | 2 | 4 | 2 | 4 | 3 | 2 | 3 | 2 | 1 | 1 | 1 |
| 10 | 19 | 60 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 |
| 11 | 18 | 41 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 4 | 2 | 3 | 3 | 2 | 1 | 1 | 1 |
| 12 | 18 | 50 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 4 | 2 | 4 | 4 | 2 | 1 | 2 | 0 | 1 | 1 |
| 13 | 18 | 43 | 3 | 2 | 2 | 3 | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 4 | 2 | 2 | 1 | 1 | 1 | 1 |
| 14 | 19 | 49 | 1 | 2 | 1 | 3 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 3 | 2 | 1 | 1 | 1 | 1 |
| 15 | 18 | 51 | 1 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 2 | 2 | 3 | 2 | 2 | 1 | 1 | 1 |
| 16 | 18 | 39 | 3 | 2 | 1 | 3 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 0 | 1 |
| 17 | 18 | 49 | 3 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 0 | 1 | 1 |
| 18 | 18 | 50 | 3 | 2 | 1 | 3 | 2 | 2 | 2 | 2 | 4 | 1 | 1 | 1 | 3 | 2 | 1 | 1 | 1 | 1 |
| 19 | 20 | 50 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 3 | 1 | 2 | 1 | 1 | 1 |
| 20 | 18 | 58 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 3 | 2 | 1 | 1 | 1 | 1 |
| 21 | 18 | 54 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 2 | 4 | 1 | 4 | 3 | 3 | 2 | 2 | 1 | 1 | 1 |
| 22 | 18 | 60 | 3 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 |
| 23 | 18 | 52 | 2 | 2 | 1 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 2 | 2 | 1 | 1 | 1 |
| 24 | 18 | 55 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 3 | 2 | 3 | 2 | 1 | 0 | 1 | 1 |
| 25 | 19 | 51 | 3 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 4 | 3 | 2 | 2 | 1 | 1 | 1 |
| 26 | 20 | 58 | 3 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 |
| 27 | 18 | 54 | 3 | 2 | 1 | 3 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 |
| 28 | 18 | 55 | 1 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 2 | 3 | 2 | 2 | 0 | 1 | 1 |
| 29 | 18 | 80 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 3 | 2 | 2 | 2 | 1 | 1 | 1 |
| 30 | 19 | 44 | 3 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 3 | 3 | 1 | 1 | 1 | 1 | 1 |
| 31 | 21 | 55 | 3 | 2 | 1 | 3 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 3 | 2 | 1 | 2 | 1 | 1 | 1 |
| 32 | 20 | 58 | 2 | 2 | 1 | 2 | 1 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 3 | 2 | 2 | 1 | 1 | 1 |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 33 | 19 | 59 | 3 | 2 | 2 | 2 | 1 | 3 | 2 | 2 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 |
| 34 | 19 | 68 | 3 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 2 | 3 | 2 | 1 | 1 | 1 | 1 |
| 35 | 19 | 56 | 1 | 2 | 1 | 2 | 2 | 3 | 1 | 2 | 1 | 1 | 2 | 4 | 3 | 2 | 3 | 1 | 1 | 1 |
| 36 | 18 | 53 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 2 | 3 | 2 | 1 | 0 | 0 | 1 |
| 37 | 19 | 58 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 4 | 3 | 2 | 1 | 1 | 1 | 1 |
| 38 | 20 | 55 | 3 | 2 | 2 | 3 | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 3 | 2 | 2 | 2 | 1 | 1 | 1 |
| 39 | 19 | 50 | 3 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 2 | 4 | 3 | 2 | 2 | 1 | 1 | 1 |
| 40 | 20 | 44 | 3 | 2 | 1 | 3 | 2 | 2 | 2 | 2 | 1 | 2 | 3 | 4 | 3 | 2 | 1 | 1 | 1 | 0 |
| 41 | 19 | 42 | 1 | 2 | 2 | 1 | 2 | 1 | 1 | 2 | 4 | 1 | 1 | 4 | 3 | 2 | 1 | 0 | 1 | 1 |
| 42 | 19 | 56 | 3 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 1 | 1 | 0 |
| 43 | 20 | 59 | 3 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 1 |
| 44 | 18 | 55 | 1 | 2 | 1 | 3 | 2 | 2 | 1 | 2 | 1 | 1 | 3 | 4 | 3 | 1 | 1 | 1 | 1 | 0 |
| 45 | 20 | 52 | 3 | 2 | 1 | 3 | 1 | 2 | 2 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 0 |
| 46 | 18 | 38 | 3 | 2 | 2 | 3 | 1 | 2 | 1 | 1 | 2 | 2 | 3 | 2 | 3 | 2 | 1 | 0 | 1 | 1 |
| 47 | 20 | 48 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 4 | 2 | 2 | 1 | 1 | 1 | 1 |
| 48 | 18 | 56 | 1 | 2 | 2 | 3 | 2 | 1 | 2 | 2 | 4 | 1 | 1 | 2 | 3 | 1 | 2 | 1 | 1 | 1 |
| 49 | 22 | 56 | 3 | 2 | 2 | 1 | 1 | 3 | 2 | 2 | 2 | 2 | 1 | 2 | 3 | 2 | 2 | 1 | 1 | 1 |
| 50 | 19 | 59 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 1 |
| 51 | 20 | 55 | 3 | 2 | 2 | 3 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| 52 | 18 | 54 | 1 | 2 | 1 | 2 | 1 | 1 | 2 | 1 | 4 | 2 | 1 | 1 | 2 | 2 | 2 | 0 | 1 | 1 |
| 53 | 19 | 50 | 3 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 4 | 1 | 3 | 1 | 1 | 1 | 1 | 1 |
| 54 | 19 | 60 | 3 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 4 | 2 | 2 | 2 | 2 | 1 | 1 | 1 |
| 55 | 20 | 51 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 4 | 2 | 2 | 2 | 3 | 2 | 3 | 1 | 1 | 1 |
| 56 | 18 | 48 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 1 | 2 | 4 | 2 | 3 | 3 | 1 | 1 | 1 | 1 |
| 57 | 24 | 45 | 3 | 2 | 1 | 3 | 1 | 3 | 2 | 1 | 4 | 1 | 1 | 3 | 3 | 3 | 1 | 1 | 1 | 1 |
| 58 | 23 | 48 | 2 | 2 | 2 | 1 | 2 | 3 | 1 | 2 | 1 | 2 | 1 | 3 | 3 | 2 | 2 | 1 | 1 | 1 |
| 59 | 20 | 50 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 2 | 0 | 1 | 1 |
| 60 | 19 | 53 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 4 | 1 | 1 | 4 | 3 | 1 | 3 | 1 | 1 | 1 |
| 61 | 19 | 49 | 3 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 4 | 1 | 2 | 1 | 3 | 1 | 1 | 1 |
| 62 | 18 | 55 | 3 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 4 | 1 | 4 | 3 | 3 | 2 | 2 | 1 | 1 | 1 |
| 63 | 23 | 52 | 3 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 3 | 2 | 2 | 1 | 1 | 1 |
| 64 | 22 | 48 | 1 | 2 | 2 | 3 | 2 | 2 | 1 | 2 | 4 | 2 | 2 | 3 | 2 | 3 | 1 | 0 | 1 | 1 |

**Posttest**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 19 | 52 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 0 | 0 | 0 |
| 2 | 20 | 45 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 4 | 1 | 2 | 2 | 0 | 0 | 0 |
| 3 | 18 | 53 | 3 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 3 | 1 | 2 | 1 | 1 | 0 | 1 | 1 |
| 4 | 18 | 49 | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 0 |
| 5 | 18 | 44 | 1 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 4 | 2 | 2 | 1 | 0 | 0 | 0 |
| 6 | 18 | 41 | 3 | 2 | 1 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 3 | 1 | 1 | 2 | 1 | 0 | 0 | 0 |
| 7 | 18 | 43 | 1 | 2 | 2 | 1 | 1 | 1 | 2 | 2 | 4 | 1 | 2 | 2 | 1 | 2 | 1 | 0 | 0 | 0 |
| 8 | 17 | 58 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 3 | 4 | 1 | 1 | 2 | 0 | 0 | 1 |
| 9 | 18 | 58 | 1 | 2 | 1 | 3 | 2 | 1 | 2 | 2 | 4 | 2 | 4 | 3 | 2 | 3 | 2 | 0 | 1 | 1 |
| 10 | 19 | 60 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 1 | 0 | 0 | 0 |
| 11 | 18 | 41 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 4 | 2 | 1 | 3 | 2 | 0 | 0 | 0 |
| 12 | 18 | 50 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 4 | 2 | 4 | 4 | 1 | 1 | 2 | 0 | 0 | 1 |
| 13 | 18 | 43 | 3 | 2 | 2 | 3 | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 4 | 2 | 2 | 1 | 0 | 1 | 1 |
| 14 | 19 | 49 | 1 | 2 | 1 | 3 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 0 | 0 | 0 |
| 15 | 18 | 51 | 1 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 0 | 1 | 1 |
| 16 | 18 | 39 | 3 | 2 | 1 | 3 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 0 | 0 | 0 |
| 17 | 18 | 49 | 3 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 0 | 0 | 1 |
| 18 | 18 | 50 | 3 | 2 | 1 | 3 | 2 | 2 | 2 | 2 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 0 | 0 | 1 |
| 19 | 20 | 5 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 0 | 0 | 1 |
| 20 | 18 | 58 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 1 | 0 | 0 | 0 |
| 21 | 18 | 54 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 2 | 4 | 1 | 4 | 3 | 1 | 2 | 2 | 0 | 0 | 0 |
| 22 | 18 | 60 | 3 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 2 | 1 | 0 | 0 | 0 |
| 23 | 18 | 52 | 3 | 2 | 1 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 2 | 2 | 0 | 0 | 0 |
| 24 | 18 | 55 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 3 | 2 | 2 | 2 | 1 | 0 | 0 | 0 |
| 25 | 19 | 51 | 3 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 4 | 3 | 2 | 2 | 0 | 0 | 0 |
| 26 | 20 | 58 | 3 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 0 | 1 | 1 |
| 27 | 18 | 54 | 3 | 2 | 1 | 3 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 0 | 0 | 0 |
| 28 | 18 | 55 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 0 | 0 | 0 |
| 29 | 18 | 80 | 1 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 3 | 1 | 2 | 2 | 0 | 0 | 0 |
| 30 | 19 | 44 | 3 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 3 | 2 | 1 | 1 | 0 | 1 | 1 |
| 31 | 21 | 55 | 3 | 2 | 1 | 3 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 3 | 2 | 1 | 2 | 0 | 0 | 0 |
| 32 | 20 | 58 | 3 | 2 | 1 | 2 | 1 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 3 | 2 | 2 | 1 | 1 | 1 |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 33 | 19 | 59 | 3 | 2 | 2 | 2 | 1 | 3 | 2 | 2 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 0 | 1 | 1 |
| 34 | 19 | 68 | 3 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 2 | 3 | 2 | 1 | 1 | 1 | 1 |
| 35 | 19 | 56 | 1 | 2 | 1 | 2 | 2 | 3 | 1 | 2 | 1 | 1 | 2 | 4 | 2 | 2 | 2 | 0 | 1 | 1 |
| 36 | 18 | 53 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 2 | 3 | 2 | 1 | 0 | 0 | 1 |
| 37 | 19 | 58 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 4 | 3 | 2 | 1 | 1 | 1 | 1 |
| 38 | 20 | 55 | 3 | 2 | 2 | 3 | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 3 | 2 | 2 | 1 | 0 | 1 | 1 |
| 39 | 19 | 50 | 3 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 2 | 4 | 3 | 2 | 2 | 1 | 1 | 1 |
| 40 | 20 | 44 | 3 | 2 | 1 | 3 | 2 | 2 | 2 | 2 | 1 | 2 | 3 | 4 | 3 | 2 | 1 | 1 | 1 | 1 |
| 41 | 19 | 42 | 1 | 2 | 2 | 1 | 2 | 1 | 1 | 2 | 4 | 1 | 1 | 4 | 3 | 2 | 1 | 0 | 0 | 1 |
| 42 | 19 | 56 | 3 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 0 | 0 | 0 |
| 43 | 20 | 59 | 3 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 |
| 44 | 18 | 55 | 1 | 2 | 1 | 3 | 2 | 2 | 1 | 2 | 1 | 1 | 3 | 4 | 3 | 1 | 1 | 1 | 1 | 1 |
| 45 | 20 | 52 | 3 | 2 | 1 | 3 | 1 | 2 | 2 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 1 | 0 | 1 | 1 |
| 46 | 18 | 38 | 3 | 2 | 2 | 3 | 1 | 2 | 1 | 1 | 2 | 2 | 3 | 2 | 3 | 2 | 1 | 0 | 0 | 1 |
| 47 | 20 | 48 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 4 | 2 | 2 | 1 | 1 | 1 | 0 |
| 48 | 18 | 56 | 1 | 2 | 2 | 3 | 2 | 1 | 2 | 2 | 4 | 1 | 1 | 2 | 3 | 1 | 2 | 0 | 0 | 1 |
| 49 | 22 | 56 | 3 | 2 | 2 | 1 | 1 | 3 | 2 | 2 | 2 | 2 | 1 | 2 | 3 | 2 | 1 | 0 | 1 | 1 |
| 50 | 19 | 59 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 0 | 0 | 1 |
| 51 | 20 | 55 | 3 | 2 | 2 | 3 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 1 |
| 52 | 18 | 54 | 1 | 2 | 1 | 2 | 1 | 1 | 2 | 1 | 4 | 2 | 1 | 1 | 2 | 2 | 1 | 0 | 1 | 1 |
| 53 | 19 | 50 | 3 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 4 | 1 | 3 | 1 | 1 | 1 | 1 | 1 |
| 54 | 19 | 60 | 3 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 4 | 2 | 2 | 2 | 2 | 0 | 0 | 1 |
| 55 | 20 | 51 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 4 | 2 | 2 | 2 | 3 | 2 | 1 | 0 | 1 | 1 |
| 56 | 18 | 48 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 1 | 2 | 4 | 2 | 3 | 3 | 1 | 1 | 1 | 0 |
| 57 | 24 | 45 | 3 | 2 | 1 | 3 | 1 | 3 | 2 | 1 | 4 | 1 | 1 | 3 | 3 | 3 | 1 | 0 | 1 | 1 |
| 58 | 23 | 48 | 2 | 2 | 2 | 1 | 2 | 3 | 1 | 2 | 1 | 2 | 1 | 3 | 3 | 2 | 2 | 0 | 1 | 1 |
| 59 | 20 | 50 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 2 | 0 | 1 | 0 |
| 60 | 19 | 53 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 4 | 1 | 1 | 4 | 3 | 1 | 1 | 1 | 1 | 1 |
| 61 | 19 | 49 | 3 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 4 | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| 62 | 18 | 55 | 3 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 4 | 1 | 4 | 3 | 3 | 2 | 2 | 1 | 1 | 0 |
| 63 | 23 | 52 | 3 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 3 | 2 | 2 | 1 | 1 | 1 |
| 64 | 22 | 48 | 1 | 2 | 2 | 3 | 2 | 2 | 1 | 2 | 4 | 2 | 2 | 3 | 2 | 3 | 1 | 0 | 1 | 1 |

**GALLERY**

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