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A study to assess the effect of ginger tea on dysmenorrhea among B.Sc Nursing students in a selected college, Guwahati, Assam

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Abstract

Background: Dysmenorrhea is the cramping pain that occurs during menstruation. It is very common among females. Ginger is considered an effective remedies in menstrual pain since ancient times.

Method: A quantitative research approach with one group pre-test post-test research design was conducted to assess the effect of ginger tea on dysmenorrhea among B.Sc Nursing students in a selected college, Guwahati, Assam during the year 2022 in the month of March. Demographic variable Performa and Numerical Pain Rating Scale was used to collect the data among 60 B.Sc Nursing students.

Result: The result revealed that the mean difference of pre-test and post-test pain score was 4.77 which was statistically significant at $p \leq 0.05$ 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 $p \leq 0.05$ level of significance with level of dysmenorrhea before the administration of ginger tea.

Conclusion: On the basis of the findings the researcher concluded that ginger tea is effective in reducing dysmenorrhea.

Keywords: Dysmenorrhea, ginger tea, prostaglandin, uterus, anti-inflammatory

Introduction

Menstrual cycle is an important indicator of reproductive health of a woman. In the Indian culture, it determines a girl's maturity and labels her fit for marriage. There are many physiological and psychological changes happening to a girl at the time of menstruation such as pain, fatigue, nausea, vomiting, anxiety, depression, cramps, etc. Girls are experiencing it during menstruation^[1].

There are two types of dysmenorrhea: Primary and Secondary. Primary dysmenorrhea is characterized by painful menstrual cramps without any evident pathology. Secondary dysmenorrhea is the occurrence of painful menstruation in the presence of any pelvic pathology, such as endometriosis, adenomyosis, or chronic pelvic inflammatory disease^[2].

Dysmenorrhea results from the progesterone withdrawal near the peak of a menstrual cycle; this withdrawal has been shown to extend the synthesis of prostaglandins. A study suggests that prostaglandins are released during menstruation because of endometrial cell destruction. Prostaglandin stimulates uterine contractions and increases vasopressin release, which causes ischemia and pain^[3].

Primary dysmenorrhea is seen in 3 out of 4 women. One in four women with dysmenorrhea has a secondary form caused by an underlying gynecological condition. In an estimate, 5 to 15% of women with Primary dysmenorrhea suffer from pain that hinders their general routines^[4]. A study conducted among students attending college, at Indore city of central India, dysmenorrhea was reported in 84.2% (261) girls, and 15.8% (49) reported no dysmenorrhea of which 34.2% of girls experienced severe pain, 36.6% moderate pain, and 29.2% had mild pain^[5].

Primary dysmenorrhea occurs without anatomic abnormalities or pelvic pathologic disorders in which pain begins at the onset of the menstrual flow and lasts for 12 to 48 hours. Primary dysmenorrhea is the occurrence of a physiologic alteration and it usually appears 6 to 12 months after menarche, when ovulation is established.

Secondary dysmenorrhea is considered as acquired menstrual pain that develops after 25 years. It is associated with pathologic disorders [6].

Traditionally, various folk medicines have been used to treat every day minor ailments such as menstrual cramps, headache, vomiting, indigestion, and nausea. Ginger is known to have benefits among many conventional remedies. It is helpful in minimizing menstrual cramps, and it relaxes the muscular spasms as well. It is considered as an anti-inflammatory agent in folk remedies [7].

Material and Method

The research approach adopted was quantitative research approach and one group pre-test post-test research design was used for this study. The study was conducted in Faculty of Nursing, Assam down town University, Guwahati.

Inclusion criteria: B.Sc Nursing students who:

- Have dysmenorrhea first three days of menstruation.
- Give consent to participate in the study

Exclusion criteria: B.Sc Nursing students who:

- Take medication or any other therapy for dysmenorrhea
- Have any chronic gynecological disorder

60 B.Sc Nursing students with dysmenorrhea were selected by Non Probability Purposive Sampling technique. Data was collected by using demographic variable performa and Numerical Pain Rating Scale.

Demographic variable performa was provided to each students and ask to fill-up. A pre test was conducted in the morning at 8 am on the B.Sc Nursing students having dysmenorrhea on their 1st or 2nd or 3rd menstrual day by using Numerical Pain Rating Scale. Then ginger tea was provided 3 times at 6 hours interval in a day and post test was conducted after giving ginger tea on third time by using same Numerical Pain Rating Scale. The data was analyzed by using descriptive and inferential statistics.

Result

Among 60 B.Sc Nursing students, about 47% (28) of the participants were in the age group of 19-20 years, majority i.e. 73% (44) of the participants were non-vegetarian, about 55% (33) of the participants had normal BMI, about 54% (32) of participants' age at menarche was <12 years, about 54% (32) participants' duration of flow was 3-4 days, about 45% (27) participants changes 3 pads per day, about 37% (22) of participants had first onset of dysmenorrhea within 1 year of menarche and about 37% (22) of participants donot know about first onset of dysmenorrhea, about 41% (25) of participants had peak intensity of dysmenorrhea in 2nd menstrual day, about 68% (41) of participants had family history of dysmenorrhea. (table 1)

In pre-test majority i.e., 80% (48) participants had severe pain and 20% (12) participants had moderate pain while in post-test majority i.e., 62% (37) participants had mild pain, 35% (21) participants had moderate pain and 3% (2) participants had no pain. (Table 2)

In this study paired 't' test was used to determine the effect of ginger tea on dysmenorrhea among B.Sc Nursing students. Findings showed that the mean difference of pre-test and post-test pain score was 4.77 (With obtained 't' value=39.02) which was statistically significant at $p \leq 0.05$ level of significance and the pre-test SD was 1.21 and post-test SD was 1.19. Hence, findings concluded that ginger tea is effective in reducing dysmenorrhea. (Table 3)

The Chi-square test and Fisher's Exact test value revealed that there is a statistically significant association between level of pain with selected demographic variables such as Body Mass Index and age of menarche at $p \leq 0.05$ level of significance. Other demographic variables such as age, dietary pattern, duration of flow, No of sanitary pads changed per day, first onset of dysmenorrhea, peak intensity of dysmenorrhea and family history of dysmenorrhea of B.Sc Nursing students are statistically non-significant at $p \leq 0.05$ level of significance with level of dysmenorrhea before the administration of ginger tea.

Table 1: Frequency and percentage distribution of selected participants according to their demographic variables n=60

Demographic variables	Frequency (f)	Percentage (%)
1. Age in years		
a. 17-18 years	10	17
b. 19-20 years	28	47
c. 21-22 years	17	28
d. More than 23 years	5	8
2. Dietary pattern		
a. Vegetarian	16	27
b. Non vegetarian	44	73
3. Body mass index		
a. Underweight	11	19
b. Normal	33	55
c. Overweight	8	13
d. Obese	8	13
4. Age at menarche		
a. < 12 years	32	54
b. 12-13 years	23	38
c. More than 14 years	5	8
5. Duration of flow		
a. 1-2 days	11	18
b. 3-4 days	32	54
c. 5-6 days	9	15
d. More than 6 days	8	13
Demographic variables	Frequency(f)	Percentage (%)
6. No of sanitary pads changed per day		

a. 2 pads	4	7
b. 3 pads	27	45
c. 4 pads	25	41
d. More than 4 pads	4	7
7. First onset of dysmenorrhea		
a. From menarche	6	10
b. Within 1 year of menarche	22	37
c. After 1 year of menarche	10	16
d. Not known	22	37
8. Peak intensity of dysmenorrhea		
a. /1 st menstrual day	16	27
b. 2 nd menstrual day	25	41
c. 3 rd menstrual day	19	32
9. Family history of dysmenorrhea		
a. Yes	41	68
b. No	19	32

Table 2: Frequency and percentage distribution of pre-test and post-test level of dysmenorrhea among B.Sc Nursing students n=60

Level of dysmenorrhea	Pre-test		Post-test	
	f	%	f	%
No pain (0)	--	--	2	3
Mild pain (1-3)	--	--	37	62
Moderate pain (4-6)	12	20	21	35
Severe pain (7-10)	48	80	--	--

Table 3: Effect of ginger tea on dysmenorrhea among B.Sc Nursing students n =60

Comparison of level of dysmenorrhea	Mean	SD	Mean Difference	't' test value	df	'p' value
Pre-test	7.55	1.21	4.77	39.02	59	0.001*
Post-test	2.78	1.19				

Discussion

The study intended to assess the effect of ginger tea on dysmenorrhea among B.Sc Nursing students. Prior to the study, structured interview schedule of demographic performa was developed after extensive literature and was send to various experts for opinion and suggestions. Suggestions of various experts in the fields and practical experience of the investigator had been incorporated and was utilized in the intervention of ginger tea on dysmenorrhea. The study adopted one group pre-test post-test design. Data were collected from the subjects through structured interview schedule of demographic variables after an informed consent. A pretest was conducted in the morning on the B.Sc Nursing students having dysmenorrhea on their 1st or 2nd or 3rd menstrual day by using Numerical Pain Rating Scale. Then ginger tea was provided 3 times at 6 hours interval in a day and post test was conducted after giving ginger tea on third time by using same pain scale. As per the tool, the lesser the number of the pain scores determined the more effect of the intervention of ginger tea among B.Sc Nursing students.

The findings of the present study had been discussed in relation with the objectives and hypotheses of the study under the following headings:

The first objectives was to assess the level of dysmenorrhea among B.Sc Nursing students.

The findings showed that out of 60 B.Sc Nursing students, majority 80% (48) participants had severe pain and 20% (12) participants had moderate pain while in post-test majority i.e., 62% (37) participants had mild pain, 35% (21)

participants had moderate pain and 3% (2) participants had no pain.

The present study is supported by the following study findings

Talawar D *et al.* (2021) [8] conducted a study to evaluate the effectiveness of ginger powder on dysmenorrhea among high school students of selected High school, Hubballi-Dharwad. The research design used for the study was pre experimental one group pre-test post-test design. The demographic Performa were collected from the high school girls by using Modified menstrual symptom questionnaire. Results-Revealed that in pre-test, majority of the subjects 80% had moderate menstrual symptoms, 20% had severe menstrual scores and none of them had mild symptoms whereas, after administrating the ginger i.e. in post-test 56.6% had mild menstrual symptoms and 43.4% had moderate menstrual symptoms and none of them had severe menstrual symptoms [8].

The second objective was to determine the effect of ginger tea on dysmenorrhea among B.Sc Nursing students

In present study to determine effect of ginger tea on dysmenorrhea among B.Sc Nursing students paired t test was used. Findings showed that mean difference of pre-test and post-test pain score was 4.77 which was statistically significant at $p \leq 0.05$ level. Hence, findings concluded that ginger tea is effective in reducing dysmenorrhea. Hence, research hypothesis H_1 was accepted.

The present study is supported by the following study findings:

Padmavathi P *et al.* (2012) conducted an experimental study on effectiveness of ginger powder on dysmenorrhea among adolescent girls in Erode, Tamil Nadu, India. Thirty adolescent girls with dysmenorrhea were selected. A one-group pretest and posttest pre-experimental design was adopted. A pretest was conducted by using symptoms assessment scale. Immediately after pretest, 1 g ginger powder was given two times a day and post test was conducted. The findings was that the pretest mean score was 65.12 (SD = 8.74) and posttest mean score was 43.24 (SD = 6.72) with mean difference 21.88 and paired "t" value is 23.02, which was significant at 0.01 level. Hence, it showed that ginger tea is effective in reducing dysmenorrhea [9].

The third objectives was to find the association between level of dysmenorrhea before the administration of ginger tea and demographic variables.

The finding of the present study reveals that there is a statistically significant association between level of pain with selected demographic variables such as Body Mass Index and age of menarche at $p \leq 0.05$ level of significance. Other demographic variables such as age, dietary pattern, duration of flow, No of sanitary pads changed per day, first onset of dysmenorrhea, peak intensity of dysmenorrhea and family history of dysmenorrhea of B.Sc Nursing students are statistically non-significant at $p \leq 0.05$ level of significance with level of dysmenorrhea before the administration of ginger tea.

The present study is supported by the following study findings:

Amutha V.M *et al.* (2016)^[10] conducted a study to assess the effectiveness of ginger tea on dysmenorrhea among college students in Sree Mookambika College of Nursing, Kulasekharam, at Kanyakumari District. 60 nursing students were selected by using purposive sampling technique, Numerical Pain Rating Scale was used to assess the pre-test and post-test pain score. The findings reveal that the level of dysmenorrhea is associated with Age, Type of family, length of menstrual cycle and treatment taken to relieve dysmenorrhea at 0.05 level of significance and there was no association with the demographic variables such as religion, family monthly income, and family history of dysmenorrhea, onset and duration of dysmenorrhea, Impact of menstrual cycle^[10].

Limitations

- It is difficult to find the students having dysmenorrhea at the same time.
- Some students were reluctant to take ginger tea.

Conclusion

Dysmenorrhea is common among females. It makes the daily activities uneasy with discomfort. As ginger is a natural remedy and easily available in market it can be used in dysmenorrhea by consuming it in different forms and it also can be implemented by the nurses in day to day practice at hospital as well as at home and community to manage dysmenorrhea. The study findings revealed that ginger tea is effective in reducing dysmenorrhea. This study help the researcher and the participants to know about the effect of ginger on dysmenorrhea.

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Ethical approval: The study was approved by institutional Ethics committee

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