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A comparative study to evaluate the effectiveness of raw ginger and mint extract on dysmenorrheal symptoms among nursing students of selected nursing college, Hubballi

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Abstract
Background of the study: The research study undertaken was "A comparative study to evaluate the effectiveness of raw ginger and mint extract on dysmenorrheal symptoms among nursing students of selected Nursing college, Hubballi" with the purpose to evaluate the following objectives;1.To assess the dysmenorrheal symptoms among experimental group I before administration of raw ginger.2. To assess the dysmenorrheal symptoms among experimental group II before administration of mint extract. 3. To evaluate the effectiveness of raw ginger on dysmenorrheal symptoms among experimental group I. 4. To evaluate the effectiveness of mint extract on dysmenorrheal symptoms among experimental group II. 5. To compare the effectiveness of raw ginger and mint extract on dysmenorrheal symptoms among experimental group I and II. 6. To find out an association between pretest scores of experimental group I with their selected socio demographic variables.7.To find out an association between pretest scores of experimental group II with their selected socio demographic variables.

Methods: The research design used for the study was quasi-experimental; two group pre-test, post-test design. Thirty (30) Samples were selected using Non-Probability; convenient sampling technique.

Results: In Experimental Group I, in Pre-test majority of subjects 9(60%) had moderate menstrual symptoms, 6(40%) had severe menstrual symptoms in pre-test, where as in posttest 9(60%) had mild menstrual symptoms and 6(40%) had moderate menstrual symptoms. In Experimental Group II, in Pre-test majority of the subjects, 10(66%) were with severe menstrual symptoms and 5(34%) had moderate menstrual symptoms, where as in posttest all of the subjects 15(100%) had moderate menstrual symptoms. One way analysis of variance revealed that the Fcal value (26.18*) was greater than the Ftab value (7.57*). This indicates that the mean reduction in menstrual symptom scores of nursing students in the experimental group I who have taken raw ginger was higher than those in the experimental group II who were administered with mint extract.

Keywords: Determine, stress, Zumba, effectiveness, intervention

Introduction
Yesterday's girls are today's adolescents and tomorrow's mothers [1]. Approximately one fifth of the world's population is in the age group of 10-19 years, India is home to more than 243 million adolescents, who account for almost 21% of the country's population [2]. There are 1.2 billion adolescents aged 10-19 in developing nations making up 1/5th to 1/4th of country's populations. Adolescents have diverse health needs as they are living in diverse circumstances [5]. The period of adolescence for a girl is a period of physical and psychological preparation for safe motherhood [2]. One of the major physioll changes that take place in adolescent girl is the onset of menarche, which is often associated with problems of irregular menstruation, excessive bleeding and dysmenorrhea [4].

Dysmenorrhea is one of the most common gynecologic disorders affecting more than half of menstruating women [5]. Dysmenorrhea results from the withdrawal of progesterone near the end of a menstrual cycle this withdrawal has been shown to increase the synthesis of prostaglandins. Many adolescent report limitations on daily activities, such as missing school sporting events and other social activities, because of dysmenorrhea.

Ginger is one of the herbal supplements that has been used for medical purposes since antiquity and is known as a popular herbal medication to treat painful diseases. It contains several constituents such as gingerol, gingerdiol and gingerdione, beta-carotene, capsaicin, caffeic acid and curcumin. Several studies have shown that ginger acts as an inhibitor on cyclooxygenase (COX) and lipooxygenase, resulting in an inhibition of prostaglandin synthesis. Therefore ginger has been used as an anti-inflammatory acting by inhibition of prostaglandin synthesis. Ginger is therefore worthy of consideration as an analgesic in dysmenorrhea. Also, ginger may be an effective and safe therapy for relieving pain in women with dysmenorrhea if

administered at the onset or during the 3 days prior to menstruation [1].

Mint is another safest and best herb. It grows like a weed, is perfectly safe for use. It yields an essential oil and menthol, which acts as a powerful analgesic. It is perfectly safe for use, and is well known for its properties related to indigestion, stomach cramps and menstrual cramps. The nutritional values of pudina, mainly iron and calcium play a beneficial role in dysmenorrhea.

The natural remedies like ginger tea and mint tea are the safest methods for relieving dysmenorrhea. The researcher is interested to compare the safe and beneficial values of mint and Ginger, so that this will be an effective study for those who are affected severely with dysmenorrhea.

Problem on Hand
"A comparative study to evaluate the effectiveness of raw ginger and mint extract on dysmenorrheal symptoms among nursing students of selected Nursing College, Hubballi."

Objectives of the study
1. To assess the dysmenorrheal symptoms among experimental group I before administration of raw ginger.
2. To assess the dysmenorrheal symptoms among experimental group II before administration of mint extract.
3. To evaluate the effectiveness of raw ginger on dysmenorrheal symptoms among experimental group I.
4. To evaluate the effectiveness of mint extract on dysmenorrheal symptoms among experimental group II.
5. To compare the effectiveness of raw ginger and mint extract on dysmenorrheal symptoms among experimental group I and II.
6. To find out an association between pretest scores of experimental group I with their selected socio demographic variables.
7. To find out an association between pretest scores of experimental group II with their selected socio demographic variables.

Hypotheses
H1: There will be statistical difference in pre-test and post-test scores regarding dysmenorrheal symptoms among nursing students of experimental group I at 0.05 level significance.

H2: There will be statistical difference in pre-test and post-test scores regarding dysmenorrheal symptoms among nursing students of experimental group II at 0.05 level significance.

H3: The mean post-test menstrual symptom scores of nursing students of selected nursing colleges who have taken raw ginger will be significantly higher than the mean post-test menstrual symptom scores of selected nursing colleges who have taken mint extract at 0.05 level of significance.

H4: There will be statistical association between the pre-test scores regarding dysmenorrheal symptoms among experimental group I at 0.05 level of significance.

H5: There will be statistical association between the pre-test scores regarding dysmenorrheal symptoms among experimental group II at 0.05 level of significance.

Materials and Methods
An evaluative approach was adopted to evaluate the effectiveness of raw ginger and mint extract on dysmenorrheal symptoms among nursing students of selected nursing colleges. Two group pre-test, post-test designs were adopted. Thirty (30) samples were selected by non-probability; purposive sampling technique. The tool for the data collection was modified menstrual symptom screening tool on dysmenorrheal symptoms among nursing students. The nursing students were selected according to the inclusion and exclusion criteria. After conducting the pretest, the researcher gave the raw ginger and mint extract to the respective 1st and 2nd group from the 1st day of their menstruation till 4 days. On 5th day post-test was conducted and the study findings were assessed by using the same tool.

Results
The results were presented under the following sections:

Section I: Distribution of sample characteristics according to socio-demographic variables.
Section II: Analysis and interpretation of menstrual symptom scores of nursing students regarding dysmenorrhea.
Section III: Testing of hypotheses

Section I: Distribution of sample characteristics according to socio-demographic variables.

Table 1: Frequency and percentage distribution of subjects in both Experimental Group I and Group II according to socio-demographic variables. n1+n2=30

Sl. No	Demographic variables	Group I		Group II	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
1.	Age (in yrs)				
	a) 18-19 yrs	08	53.4	08	53.4
	b) 20-21 yrs	07	46.6	07	46.6
2.	Religion				
	a) Hindu	08	53.3	10	67
	b) Muslim	05	33.4	04	27
	c) Christian	02	13.3	01	6
	d) Others	00	00	00	00
3.	Course				
	a) GNM	06	40	06	40

	b) B. Sc	04	26.6	07	46.6
	c) P. B. B. Sc	05	33.4	02	13.4
4.	**Habitat**				
	a) Rural	11	73.4	06	40
	b) Urban	04	26.6	09	60
5.	**Dietary pattern**				
	a) Vegetarian	08	53.4	08	53.4
	b) Mixed	07	46.6	07	46.6
6.	**Age at menarche**				
	a) 11-13yrs	08	53.4	09	60
	b) 13-15yrs	07	46.6	06	40
7.	**Length of menstrual cycle**				
	a) 1-2 days	01	06	00	00
	b) 3-4 days	11	74	10	66.6
	c) 5-6 days	03	20	05	33.4
	d) More than 6 days	00	00	00	00
8.	**Previous history of menstrual problems**				
	a) Irregular menstrual cycle	00	00	01	06
	b) Scanty discharge	02	14	00	00
	c) Painful menstruation	12	80	11	74
	d) Heavy menstrual bleeding	01	6	03	20
	e) Others	00	00	00	00
9.	**Family history of dysmenorrhea**				
	a) Yes	03	20	04	26.6
	b) No	12	80	11	73.4

Table No 1 reveals that

In Experimental Group I
- Maximum number of subjects i.e. 8(53.4%) were in the age group of 18-19 yrs and 7(46.6%) were in the age group of 20-21 yrs.
- Majority of the subjects 8(53.3%) were belongs to Hindu religion, 5(33.4%) belongs to Muslim religion and 2(13.3%) belong to Christian religion.
- Maximum number of subjects 6(40%) were studying GNM, 5(33.4%) were studying P. B. B. Sc. Nursing and 4(26.6%) were studying B. Sc. Nursing.
- The area of residence for maximum subjects 11(73.4%) was rural and 04 (26.6%) the area of residence was urban.
- Maximum number of subjects 8(53.4%) were mixed and 7(46.6%) were vegetarian.
- Maximum subjects 8(53.4%) attained menarche at the age of 11-13yrs and 7(46.6%) at the age of 13-15yrs.
- Maximum subjects 11(74%) had 3-4 days length of menstrual cycle, 3(20%) had 5-6 days length of menstrual cycle and 1(6%) had 1-2 days length of menstrual cycle.
- Maximum subjects had 12(80%) painful menstruation whereas, 2 (14%) had scanty discharge and 1(6%) had heavy menstrual bleeding.
- Majority of the subjects 12(80%) does not have a family history of dysmenorrhea and rest 3(20%) has a family history of dysmenorrhea.

In Experimental Group II
- Maximum number of subjects i.e. 8(53.4%) were in the age group of 18-19 yrs and 7(46.6%) were in the age group of 20-21 yrs.
- Majority of the subjects 10 (67%) were belongs to Hindu religion, 4(27%) belongs to Muslim religion and 1(6%) belong to Christian religion.
- Maximum number of subjects 7(46.6%) were studying B.Sc, 6(40%) were studying GNM Nursing and 2(13.4%) were studying P.B.B.Sc Nursing.
- The area of residence for maximum subjects 9(60%) was urban and 06 (40%) the area of residence was rural.
- Maximum number of subjects 8(53.4%) were vegetarian and 7(46.6%) were mixed.
- Maximum subjects 9(60%) attained menarche at the age of 11-13yrs and 6(40%) at the age of 13-15yrs.
- Maximum subjects 10(66.6%) had 3-4 days length of menstrual cycle and 5(33.4%) had 5-6 days length of menstrual cycle.
- Maximum subjects 11(74%) had painful menstruation whereas, 3 (20%) had heavy menstrual bleeding and 1(6%) had irregular menstrual cycle.
- Majority of the subjects 11(73.4%) does not have a family history of dysmenorrhea and rest 4(26.6%) has a family history of dysmenorrhea.

Section II: Analysis and Interpretation of Menstrual Symptom Scores of Nursing Students Regarding Dysmenorrhea.

Table 2: Mean, Median, Mode, Standard Deviation and Range of menstrual symptom scores of subjects in both the experimental group I and II. n1+n2=30

Area of Analysis	Groups	Mean	Median	Mode	Standard Deviation	Range
Pre-Test	Group-I	82.7	78	78	14.76	58
	Group-II	85.4	88	89	11.12	42
Post-Test	Group-I	44.7	40	40	10.42	32
	Group-II	55.8	53	60	9.58	34
Difference	Group-I	37.97	38	38	4.34	26
	Group-II	29.6	35	29	1.54	08

Table No 2 reveals that

In Experimental Group I
The mean pretest menstrual symptom score was 82.7, median was 78, mode was 78, standard deviation was 14.76 and range was 58, where as in post-test the mean menstrual symptom score was 44.73, median was 40, mode was 40, standard deviation was 10.42 and range was 32. The overall difference in mean menstrual symptom score was 37.97, median was 38, mode was 38, standard deviation was 4.34 and range was 26.

In Experimental Group II
The mean pretest menstrual symptom score was 85.4, median was 88, mode was 89, standard deviation was 11.12 and range was 42, where as in post-test the mean menstrual symptom score was 55.8, median was 53, mode was 60, standard deviation was 9.58 and range was 34. The overall difference in mean menstrual symptom score was 29.6, median was 35, mode was 29, and standard deviation was 1.54 and range was 8.
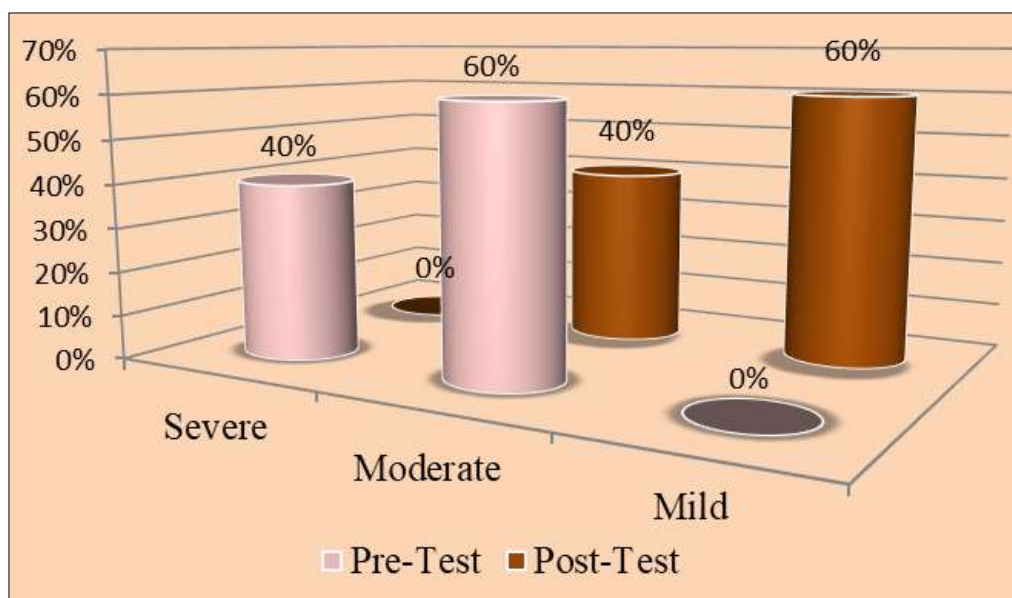
Table 3: Frequency and percentage distribution of menstrual symptom scores I n experimental group I. n1=15

Menstrual Symptoms	Pre-Test		Post-Test	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Severe	06	40	00	00
Moderate	09	60	06	40
Mild	00	00	09	60

Table No 3 reveals that
In Experimental Group I majority of subjects 9(60%) had moderate menstrual symptoms, 6(40%) had severe menstrual symptoms in pre-test, where as in post test 9(60%) had mild menstrual symptoms and 6(40%) had moderate menstrual symptoms.
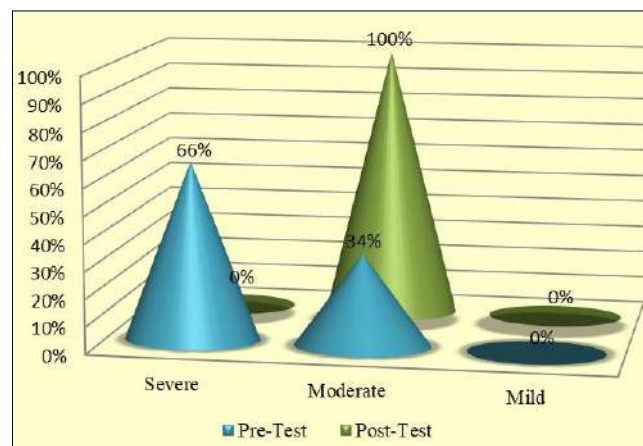

Graph 1: The cylindrical graph represents the distribution of the subjects according to their menstrual symptom scores in group I.

Table 4: Frequency and percentage distribution of menstrual symptom scores in experimental group II. n2=15

Menstrual Symptoms	Pre-Test		Post-Test	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Severe	10	66	00	00
Moderate	05	34	15	100
Mild	00	00	00	00

Table No 4 reveals that
Majority of the subjects 10(66%) severe menstrual symptoms and 5(34%) had moderate menstrual symptoms in pretest, where as in posttest all of the subjects 15(100%) had moderate menstrual symptoms.
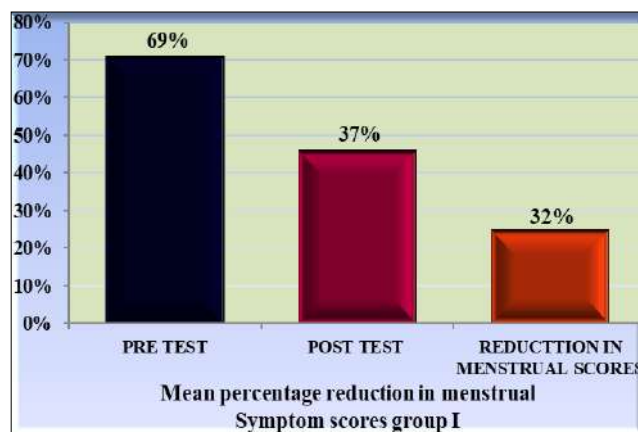

Graph 2: The Cone graph represents the distribution of the subjects according to their menstrual symptom scores in group II.

Table No 5: Frequency and percentage distribution of menstrual symptom scores of subjects in experimental group I. n1=15

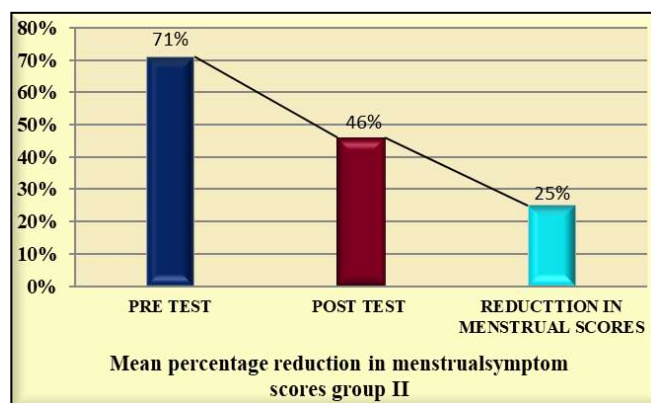| Groups	Mean percentage of menstrual symptom			
	Total Score	Pore-Test	Post-Test	Reduction in Pain
Experimental Group-I	1800	69%	37%	32%

Table No 5 reveals that

The mean percentage of menstrual symptom scores in the pre-test was 69% and 37% in the post- test. Hence the total reduction in menstrual symptom was 32%.

Graph 3: The bar graph represents mean percentage reduction in menstrual symptom scores in group I

Table 6: Frequency and percentage distribution of menstrual symptom scores of subjects in experimental group II. n2=15

Group	Mean percentage of menstrual symptom			
	Total Score	Pore-Test	Post-Test	Reduction in Pain
Experimental Group-II	1800	71%	46%	25%

Table No 6 reveals that

The mean percentage of menstrual symptom scores in the pre-test was 71% and 46% in the post- test. Hence the total reduction in menstrual symptom was 25%.

Graph 4: The bar graph represents the mean percentage reduction in menstrual symptom scores in experimental group II

Section III: Testing of hypotheses

Table 7: Mean Difference (d), Standard Error of Difference and

paired 't' value of menstrual symptom score of subjects in both the experimental Group I and Group II. n1+n2=30

Groups	Mean difference (d)	Standard error of difference	Paired 't' value	
			Cal. Value	Tab. Value
Exp. Group I	38	10.79	13.62	2.14
Exp. Group II	29.6	11.6	9.81	2.14

Table No 7 reveals that

In Experimental Group I

The calculated value of paired 't' value (tcal= 13.62)*was greater than the tabulated value (ttab=2.14). Hence H1 was accepted.

In Experimental Group II

The calculated value of paired 't' value (tcal= 9.81)* was greater than the tabulated value (ttab=2.14). Hence H2 was accepted.

Table 8: One way Analysis of Variance (ANOVA) between Experimental Group I and Group II. n1+n2=30

Source of variance	Sum of squares	Degree of freedom	Mean sum of squares	F-Ratio	
				Cal Value	Tab value
Between the groups	918.47	1	918.47	26.18*	7.57
Within the groups	982.4	28	35.08		

Table No 7 reveals that

The F cal value (26.18)* was greater than the Ftab value (7.57). This indicates that the mean reduction in menstrual symptom scores of nursing students in the experimental group I who have taken raw ginger was higher than those in the experimental group II who were taken mint extract. Hence H3 was accepted.

Association between pretest menstrual symptom scores and selected demographic variables among subjects of Group I and II.

There was no statistical association between pretest menstrual symptom scores of the subjects in experimental group I and their selected demographic variables Hence H4 was rejected.

There was no statistical association between pre-test menstrual symptom scores of the subjects in group II and their selected demographic variables. Hence H5 was not accepted.

Discussion

The findings of the study were discussed under the following headings

1. Distribution of sample characteristics according to socio-demographic variables of nursing students of experimental group I.
2. Distribution of sample characteristics according to socio-demographic variables of nursing students of experimental group II.
3. Analysis and interpretation of menstrual symptom scores of nursing students of experimental group I.
4. Analysis and interpretation of menstrual symptom scores of nursing students of experimental group II.
5. The effectiveness of raw ginger on dysmenorrhea

among nursing students of experimental group I.
6. The effectiveness of mint extract on dysmenorrhea among nursing students of experimental group II.
7. Comparison between the effectiveness of raw ginger and mint extract on dysmenorrhea among nursing students.
8. The association between pre-test dysmenorrhea scores and socio-demographic variables of nursing students in experimental group I.
9. The association between pre-test dysmenorrhea scores and socio-demographic variables of nursing students in experimental group II.

Conclusion
The present study was conducted to evaluate the effectiveness of raw ginger and mint extract on dysmenorrheal among nursing students of selected nursing college, Hubballi. In order to achieve the objectives of the study. Two group pre-test post-test designs were adopted. The subjects were selected by purposive sampling technique. Thirty (30) samples were taken. 15 samples in each group. The FCAL value was found to be 26.18* at 0.05 level of significance. The findings of the study have been discussed in relation to the objectives and other similar studies.

References
1. Webb A, Tantawy O, Tayeb M. evaluation of the effect of fresh ginger usage as a home remedy on pain relieve for dysmenorrheal among females: African journal of Nursing and midwifery. 2015 June, 2(6).
2. Trivedi H, Koshy S. Effectiveness of dietary ginger v/s active exercise on primary dysmenorrheal among adolescent girls. International Journal of Innovative Research and Development. 2016 May, 5(6).
3. George N, Pryadarshini S, Shetty S. Dysmenorrheal among adolescent girls characteristics and symptoms experienced during menstruation; Nitte university Journal of Health Sciences. 2014 Sep 3.
4. Kashebi F, Khajebei M, Asli J. comparison of the effect of ginger and zinc sulfate on primary dysmenorrheal: A placebo controlled randomized trial: Journal of Pain management nursing. 2014 Dec, 15(4)
5. Priya T. effectiveness of mint paste on dysmenorrheal among adolescent girls at selected schools Salem.
6. Achutan A, Reshmi C. Effect of Ginger tea v/s Mint tea in reducing dysmenorrheal among adolescent girls. International Journal of applied research. 2016, 2(3).
7. World health organization report. Ten top issues for women's health.[Internet] 2017;[cited 2019 Feb20] available from: http://www.who.int/life-course
8. Raja S. A study to assess the effectiveness of ginger powder on dysmenorrhea among adolescent in selected school at Erode: Asian Journal Nursing Education and Research. [Online]. 2012 June 2(2): [cited on 15th feb 2019] available from URL:http://www.anvpublication.org/ajner.htm
9. Padubidri VG, Daftar S. Dysmenorrhea and pre-menstrual syndrome. Shaw's Textbook of Gynecology. 16th ed. Reed Elsevier India Private Limited. New Delhi. 471-4.
10. Kumbhar SK, Reddy M, Sujana B, Reddy RK, Divya BK, Balkrishna C. Prevalence of dysmenorrhea among adolescent girls (14-19yrs) of Kadapa district and its impact on quality of life: A cross sectional study. Natl J Community Med. 2011;2:265-8.