

Effectiveness of Cinnamon Tea and Turmeric Water for Reducing Dysmenorrhoea among Degree Girls

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ABSTRACT

Aim: To find out the effectiveness of cinnamon tea and turmeric water to reduce dysmenorrhoea among degree girls.

Settings and design: Setting of the study is selected girls hostels at Vijayapur. Comparative Experimental study design.

Materials and Methods: By using Non probability purposive sampling technique 60 samples were selected.

Results: The study results shows that 43.33% of samples are having moderate pain in pre test of cinnamon tea and in post test of cinnamon tea group 40% each having mild and moderate pain, 20% having no pain. In pre test of turmeric water group 73.33% having moderate pain where as in post test 60% samples having mild Pain and 36.66% samples having moderately severe pain. The calculated t value shows that there is a significant difference between pre test and post test effect of cinnamon tea ($t_{28}=15.78$, $df=28$) and pre test and post test effect of turmeric water is ($t_{28}=2.11$, $df=28$). The unpaired t test shows that there is no significant difference between cinnamon tea and turmeric water in reducing the dysmenorrhea pain ($t_{58}=0.5$, $df=58$). There is a significant association between pre test pain scores before administering cinnamon tea with selected demographic variables like family history of dysmenorrhoea ($\chi^2=6.7522$, $df=2$). There is a significant association between pre test pain scores before administering turmeric water with selected demographic variables like education ($\chi^2=9.127$, $df=3$), religion ($\chi^2=6.7522$, $df=2$), dietary pattern ($\chi^2=68.207$, $df=3$).

Conclusions: The study concludes that cinnamon and turmeric both are having equal effectiveness to reduce dysmenorrhoea.

Keywords: Cinnamon tea, Turmeric water, Dysmenorrhoea

INTRODUCTION

Menstruation is natural & normal physiological process for all women. Menstruation is normal physiological impact of each girl's life. [1] Menstruation is a monthly uterine bleeding for 3-5 days, after 28 days from puberty till menopause. [2] Which is often associated with problems of irregular menstruation, excessive bleeding & dysmenorrhoea. Dysmenorrhoea is a common in adult. [3] The word of dysmenorrhoea is derived from GREEK & it means difficult menstruation flow or painful menstrual cramps of uterine origin. [4] Dysmenorrhoea is the leading cause of recurrent short term absenteeism; from the school & worker because it is a severe & disabling in above 0-17% of women, it is also responsible for substantial economic losses due to the cost of medication, care & lost productivity. [5] Alternative therapy that sometime decrease dysmenorrhoea include relaxation & massage, yoga, acupuncture & herbal or homeopathic remedies. Home remedies for the treatment of dysmenorrhoea are known help to ease off the pain during painful menstrual period. There are simple ways to obtain relief from the symptoms. Some of the home remedies for painful, menstrual period are warm bath, hot water bottle, massage, vitamins, exercise, yoga, cinnamon tea & turmeric water. Herbs and spices are one of the most important targets to search for natural anti glycation from the point of view of safety.

[6] Cinnamon is one of the most popular and oldest spices, the bark and leaves of cinnamon are often added to food preservation to improve taste and aroma. [7] Cinnamon tea & turmeric water is helpful to reduce the menstrual cramps. It is also helpful in relaxing the muscular spasms & relieving the pain present during menstrual period. [8]

Objectives

To assess the severity of dysmenorrhoea as a pre-test & post – test in cinnamon tea receiving group-1 among degree girls of selected hostels to be measured by MC. Caffery pain scale

To assess the severity of dysmenorrhoea as a pre-test & post-test in turmeric water receiving group-2 among degree girls of selected hostels to be measured by MC. Caffery pain scale

MATERIALS AND METHODS

Hypotheses

Tested at 0.05 level of significance

H₁: There will be significant difference between pre-test score & post –test scores of dysmenorrhoea among degree girls measured by McCaffery pain scale.

H₂: There will be significant association between the pre-test scores of dysmenorrhoea with their selected demographic variables of degree girls.

Study design

The research design selected for this study is pre-experimental one group pre-test and post test design.

Population: Degree girls who are staying in hostels at Vijayapur.

Sample size: Sample size is 60

Sampling technique: Non probability purposive sampling technique.

Research approach: An Evaluative research approach.

Study tool: The questionnaire

Part 1: Performa for demographic data

➤ The Performa for data contains 12 items which includes age, educational status, dietary pattern, age at menarche, nature of menstruation, duration of menstruation, and positive family

history of dysmenorrhoea, duration of pain and home remedies.

Part 2: M.C. Caffery numerical pain rating scale

➤ M.C. Caffery numerical pain rating scale was used to assess the severity of pain. It includes pain scores from 0-10. Each score shows the different levels of pain perceived by the girls the resulting score warned as follows

1. No pain=0
2. Mild pain=1-3
3. Moderate pain=4-6
4. Severe Pain=7-9
5. Worst pain=10

METHODS OF PREPARATION OF CINNAMON TEA

Table no 1: Represents that method of preparation of cinnamon tea to reduce dysmenorrhoea.

STEPS	PREPARATION
STEP-1	Place 1.5 cup of water into pot or glass kettle.
STEP-2	Add one Ceylon cinnamon (3 inch length)
STEP-3	Cinnamon sticks have to be slow boiled to extract all the cinnamon, so bring the water to a slow boil in a pan or stove top kettle
STEP-4	Only when the cinnamon stick cools does the balance of the cinnamon gets released
STEP-5	Sugar or other sweetener of your choice (optional)

STEP-1: The administration of cinnamon tea 30 ml at the onset of menstruation & subsequently, A total of 3 Doses are to be administered preferably after meals, viz: 0 hours, 8hours, &16hours after the onset of menstruation

STEP-2: Pain is assessed 20 minutes after the administration of each dose by using MC Caffery pain scale

METHODS TO PREPARATION OF TURMERIC WATER

Table No 2: Represents that method of preparation of turmeric water to reduce dysmenorrhoea.

STEP-1	1/4 - 1/2 tsp of turmeric
STEP-2	1/2 of a lemon
STEP-3	warm water
STEP-4	a dab of honey (optional)

ADMINISTRATION OF TURMERIC WATER

STEP 1: Administered the turmeric water directly after menstruation 30 ml of content

STEP 2: Pain is assessed 20 minutes after the administration of turmeric water

Statistical Methods

The descriptive statistics were analyzed by using mean, median, frequency and percentage. Unpaired t test was used to compare the cinnamon tea and turmeric water effect on dysmenorrhoea, chi square test was used to find out the association

between pain scores with selected demographic variables. Paired t test was used to find out the difference between pre test and post test pain scores after introducing intervention.

RESULTS

Section A: Demographic Variable of Participant

Table 3: Distribution of degree girls according to their demographical variables (Cinnamon tea) N=30

SL. No	Items	Frequency	Percentage
1	Age in years		
	a)19	2	6.667
	b)20	8	26.667
	c)21	11	36.666
2	Education		
	a)1 st year	4	13.333
	b)2 nd year	17	56.667
	c)3 rd year	8	26.667
3	Socio –economic status		
	a)high class	3	3.333
	b)middle class	25	83.333
	c)low class	2	6.666
4	Religion		
	a)Hindu	26	86.667
	b)Muslim	4	13.33
	c)Christian		
5	Dietary pattern		
	a)Vegetarian	22	73.333
	b)Non vegetarian	1	3.333
	c)Ovo-vegetarian	2	6.666
6	Used treatment for dysmenorrhea		
	a)Self medication	7	23.333
	b)Hot application	9	30
	c)Rest	7	16.666
7	Sources of information		
	a)Mother	7	23.333
	b)Friend	17	56.667
	c)Mass media	6	20
8	Age at menarche		
	a)<11 year	2	6.666
	b)12-13 year	12	40
	c)14-15 years	16	53.333
9	Nature of menstrual cycle		
	a)Regular	29	96.660
10	Duration of menstrual cycle		
	a)<3	4	13.333
	b)3-4	14	46.667
	c)4-5	10	33.333
11	Family history of dysmenorrhea		
	a)Mother	4	13.333
	b)Sister	13	43.333
	c)Grand mother	-	-
12	Duration of pain		
	a)1day	7	23.333
	b)2day	9	30
	c)3day	12	40
	d)>3day	2	6.667

Table no 3: Shows that selected demographic variable distribution according to frequency and percentage in cinnamon tea experimental group.

Table 4: Distribution of degree girls according to their demographic variable (Turmeric water) N=30

SL. No	Items	Frequency	Percentage
1	Age in years		
	a)19	4	3.333
	b)20	7	23.333
	c)21	12	40
2	Education		
	a)1 st year	4	3.333
	b)2 nd year	5	16.667
	c)3 rd year	12	40
3	Socio –economic status		
	a)high class	6	20
	b)middle class	22	73.333
	c)low class	2	6.667
4	Religion		
	a)Hindu	25	83.333
	b)Muslim	3	10
	c)Christian	2	6.667
5	Dietary pattern		
	a)Vegetarian	18	60
	b)Non vegetarian	4	3.334
	c)Ovo-vegetarian	1	3.333
6	Used treatment for dysmenorrhoea		
	a)Self medication	9	30
	b)Hot application	13	43.333
	c)Rest	3	10
7	Sources of information		
	a)Mother	11	36.667
	b)Friend	10	33.333
	c)Mass media	9	30
8	Age at menarche		
	a)<11year	4	13.333
	b)12-13year	12	40
	c)14-15years	12	40
9	Nature of menstrual cycle		
	a)Regular	29	96.667
10	Duration of menstrual cycle		
	a)<3	2	6.667
	b)3-4	16	53.333
	c)4-5	12	40
11	Family history of dysmenorrhoea		
	a)Mother	14	46.666
	b)Sister	8	26.667
	c)Grand mother	8	26.667
12	Duration of pain		
	a)1day	10	33.333
	b)2day	5	16.667
	c)3day	19	63.333
	d)>3day	1	3.333

Table no 4: Shows that selected demographic variable distribution according to frequency and percentage in cinnamon tea experimental group

Section B: Assessment of the Severity of Dysmenorrhoea Pain among Degree Girls Before & After The Treatment Of Degree Girls.

Table No 5: Pre test scores distribution among cinnamon tea experimental group with frequency and percentage

S.no	Pain Level	Score	Frequency	Percentage
1	No pain	0	0	0
2	Mild	1-3	5	16.66
3	Moderate	4-6	13	43.33
4	Very severe	7-9	8	26.66
5	Worst pain	10	4	13.33
	Total		30	100

Table No 5: Shows that pre test scores distribution among cinnamon tea experimental group with frequency and percentage. In this 43.33% are having moderate pain, 26.66% having very severe pain, 16.66% having mild pain and 13.33% having worst pain.

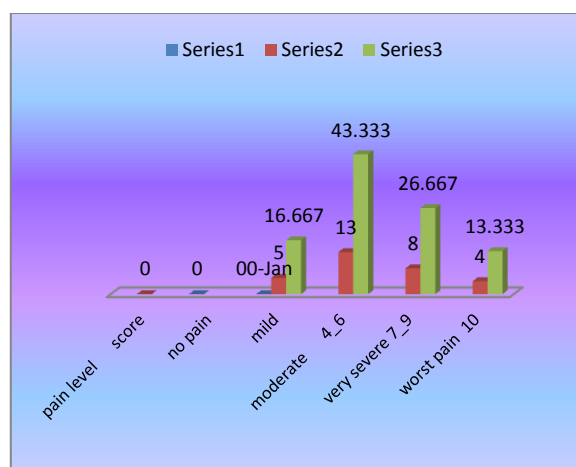


Fig no 1: Frequency & percentage of pre-test cinnamon tea

Fig no 1: The above multiple bar diagram reveals that out of 30 girls, 5(16.667) of them were from mild pain, 13(43.333) of them were from moderate pain, 8 (26.667) of them were from very severe, 4 (13.333)of them were from worst pain

Table no 6: Represents that 20% of girls had no pain, 40% each had mild and moderate pain in post test after giving cinnamon tea.

Table no 6: Post-test of cinnamon frequency & percentages of the girls

S no	Pain Level	Score	Frequency	Percentage
1	No pain	0	6	20
2	Mild	1-3	12	40
3	Moderate	4-6	12	40
4	Very severe	7-9		
5	Worst pain	10		
	Total		30	100

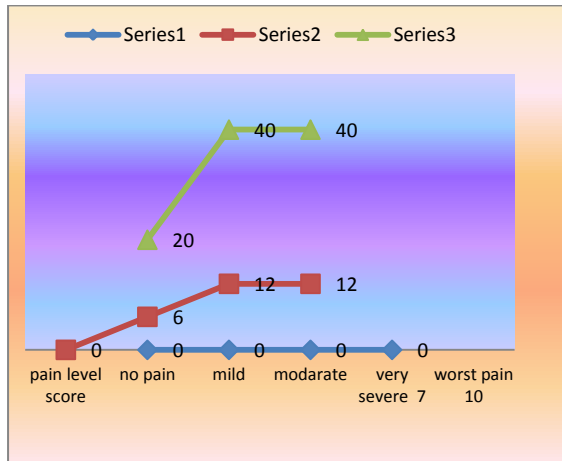


Fig no 2: Post-test of cinnamon frequency & percentage of the girls

Fig no 2: The above line diagram reveals that out of 30 girls, 6(20%) of them were had no pain, 12(40%) of them were had mild pain, 12(40%) of them were had moderate pain.

Table no 7: Pre-test & post-test of cinnamon

CINNAMON TEA			PRE-TEST		POST-TEST	
SL NO	PAIN LEVEL	SCORE	F	%	F	%
1	No pain	0			6	20
2	Mild	1-3	5	16.666	12	40
3	Moderate	4-6	13	43.333	12	40
4	Very severe	7-9	8	26.666		
5	Worst pain	10	4	13.333		
	TOTAL		30	100	30	100

Table no 7: Represents that comparison of pre test and post test of pain scores in cinnamon experimental group.

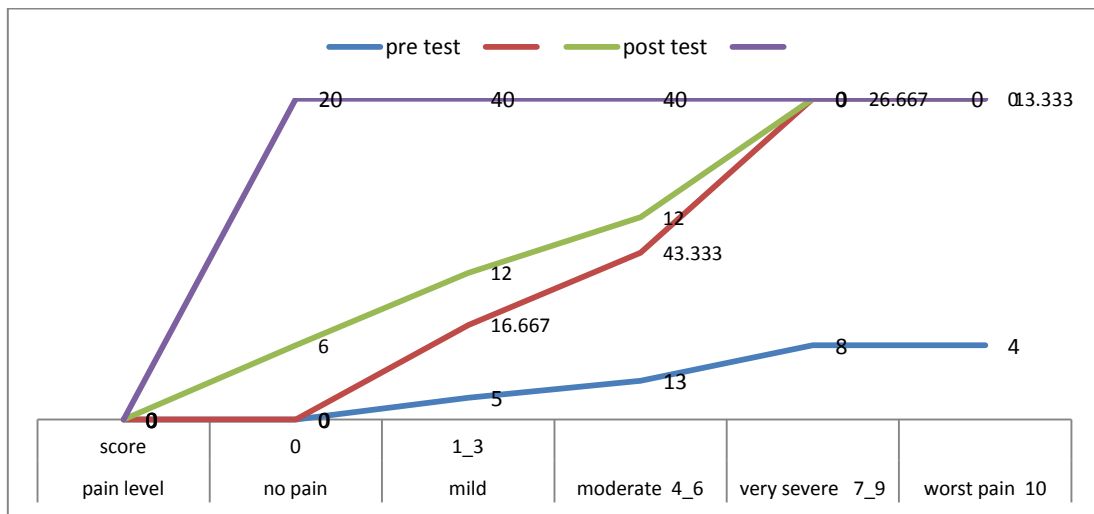


Fig no 3: Pre-test & post test of cinnamon tea

Fig no 3: In this figure comparison between the pre- test & post-test in that pre-test pain score level is high, & post-test level scores.

Table no 8: Pre-test level of turmeric water frequency & percentage

Sl no	Pain level	Score	Frequency	Percentage
1	No pain	0	0	0
2	Mild pain	1-3	2	6.667
3	Moderate	4-6	22	73.333
4	Very severe	7-9	6	20
5	Worst pain	10	0	0
	Total		3	10

Table no 8: Represents that 6.667% of girls had mild pain, 73.33% had moderate and 20% had very severe pain in pre test turmeric water experimental group.

Fig no 4: The above figure reveals that out of the 30 girls, 2(6.667%) of them had mild pain, 22(73.333%) of them had

moderate pain, 6(20%) of them had very severe pain in pre test.

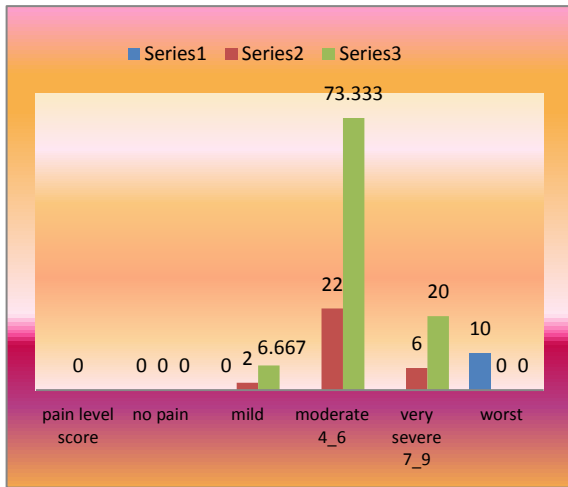


Fig no 4: Pre-test level of turmeric water frequency & percentage

Table no 9: Post-test level of turmeric water frequency & percentage level

Sl no	Pain level	Score	Frequency	Percentage
1	No pain	0	1	3.333
2	Mild pain	1-3	18	60
3	Moderate	4-6	11	36.667
4	Very severe	7-9	0	0
5	Worst pain	10	0	0
	Total		30	100

Table no 9: Represents that 1 (3.33%) girls had no pain, 60% of girls had mild pain, 36.66% had moderate in post test turmeric water experimental group.

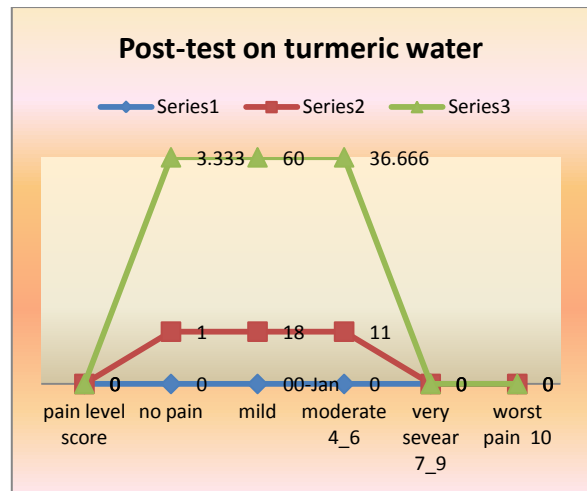


Fig no 5: Post-test on turmeric water

Fig no 5: The above the figure reveals that out of 30 girls, 1(3.333%) of them had no pain, 18(60%) of them had mild pain, 11(36.6667%) of them were from moderate pain.

Table no 10: Pre-test & post test of turmeric water

Turmeric water			Pre-test		Post-test	
Sl no	Pain level	Score	F	%	F	%
1	No pain	0			1	3.333
2	Mild	1-3	2	6.666	18	60
3	Moderate	4-6	22	73.333	11	36.666
4	Very severe	7-9	6	20		
5	Worst pain	10				
	Total		30	100	30	100

Table no 10: Represents that comparison of pre test and post test of pain scores in turmeric water experimental group.

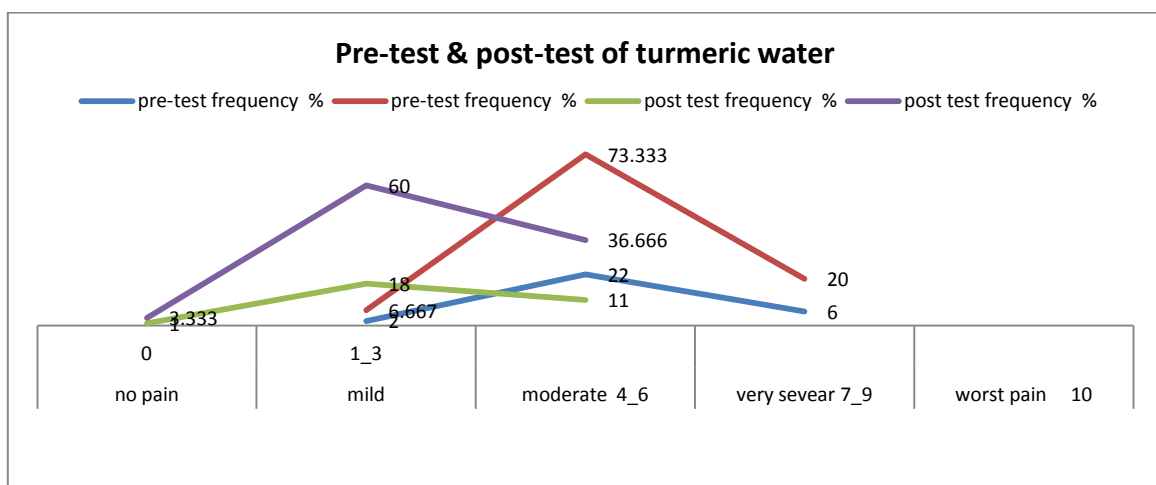


Figure no 6: Pre-test & post- test of turmeric water

Figure no 6: shows that comparison between pre test and post test pain scores in turmeric water experimental group.

Section C: Effectiveness of cinnamon tea & turmeric water for reducing pain in dysmenorrhea.

Table No 11: Effect of Cinnamon tea in reducing dysmenorrhoea (Paired t test)

Test	Mean	SD	t value	Significance	Remarks
Pre test	5.8	2.55	15.78	S	Research hypothesis accepted
Post test	2.9	1.35			

Table No 11: Represents that there is a significant difference between pre test and post test scores in cinnamon tea experimental group. The calculated t value is 15.78 which is more than table value at $df_{29}=2.05$. So with this null hypothesis is rejected and research hypothesis is accepted at 0.05 level of significance.

Table No 12: Effect of turmeric water in reducing dysmenorrhoea (paired t test)

Test	Mean	SD	t value	Significance	Remarks
Pre test	5.6	1.92	2.11	S	Research hypothesis is accepted
Post test	3.03	3.21			

Table No 12: Represents that there is a significant difference between pre test and post test scores in turmeric water experimental group. The calculated t value is 2.11 which is more than table value at $df_{29}=2.05$. So with this null hypothesis is rejected and research hypothesis is accepted at 0.05 level of significance.

Table No 13: Effect of turmeric water and cinnamon tea in reducing dysmenorrhoea (Unpaired t test)

Test	Mean	SD	Unpaired t value	Significance	Remarks
Cinnamon tea	2.8	118.8	0.5	N S	Null hypothesis is accepted
Turmeric water	3.03	85.97			

Table No 13: Represents that there is no significant difference between cinnamon tea and turmeric water scores. The calculate t value is 0.5 which is less than table value at $df_{29}=2.05$. So with this null hypothesis is accepted and research hypothesis is rejected at 0.05 level of significance.

SECTION D: ASSOCIATION BETWEEN PRE-TEST LEVEL OF DYSMENORRHOEA PAIN SCORES AMONG DEGREE GIRLS SELECTED DEMOGRAPHIC VARIABLES.

Table No 14: Association between cinnamon tea group with selected demographic variables

S no	Variables	χ^2 value	df	Significance	Remarks
1	Age in years	3.59	3	N S	Null hypothesis is accepted
2	Education	6.486	3	N S	Null hypothesis is accepted
3	Socio economic status	2.393	2	N S	Null hypothesis is accepted
4	Religion	0.9065	1	N S	Null hypothesis is accepted
5	Dietary pattern	6.1586	3	N S	Null hypothesis is accepted
6	Treatment for dysmenorrhoea	2.04	3	N S	Null hypothesis is accepted
7	Source of information	5.048	2	N S	Null hypothesis is accepted
8	Age of menarche	3.56	2	N S	Null hypothesis is accepted
9	Nature of menstrual cycle	0.176	1	N S	Null hypothesis is accepted
10	Duration of menstrual cycle	5.402	3	N S	Null hypothesis is accepted
11	Family history of dysmenorrhoea	6.7522	2	S	Research hypothesis is accepted
12	Duration of pain	5.66	3	NS	Null hypothesis is accepted

Table No 14: Represents that there is a significant association between pain scores of cinnamon tea experimental group girls selected demographic variable like family

history of dysmenorrhoea ($\chi^2=6.7522$, $df=2$) at 0.05 level of significance. So remaining selected demographic variables is not having association with pain scores.

Table No 15: Association between turmeric water group with selected demographic variables

S no	Variables	χ^2 value	df	Significance	Remarks
1	Age in years	1.005	3	N S	Null hypothesis is accepted
2	Education	9.127	3	S	Research hypothesis is accepted
3	Socio economic status	2.517	2	N S	Null hypothesis is accepted
4	Religion	2.26	1	N S	Null hypothesis is accepted
5	Dietary pattern	68.207	3	S	Research hypothesis is accepted
6	Treatment for dysmenorrhoea	4.8894	3	N S	Null hypothesis is accepted
7	Source of information	2.73	2	N S	Null hypothesis is accepted
8	Age of menarche	1.823	2	N S	Null hypothesis is accepted
9	Nature of menstrual cycle	3.792	1	N S	Null hypothesis is accepted
10	Duration of menstrual cycle	2.5769	3	N S	Null hypothesis is accepted
11	Family history of dysmenorrhoea	1.011	2	S	Research hypothesis is accepted
12	Duration of pain	2.293	3	NS	Null hypothesis is accepted

Table No 15: Represents that there is a significant association between pain scores of turmeric water experimental group girls selected demographic variables like family history of dysmenorrhoea ($\chi^2=6.7522$, $df=2$), education ($\chi^2=9.127$, $df=3$), dietary pattern ($\chi^2=68.207$, $df=3$), at 0.05 level of significance. So remaining selected demographic variables is not having association with pain scores.

DISCUSSION

- An exploratory study was conducted in the Gwalior district to Study Dysmenorrhea during Menstruation. In this study The total sample size 970 adolescent girls were chosen and the findings of indicate the enormity of the problem and the need for appropriate intervention through a change in lifestyle and remaining selected demographic variables is not having association with menstrual pain (Anil K Agarwal and Anju Agarwal) [5]
- In present study there is a significant association between pain scores of cinnamon tea experimental group girls selected demographic variable like family history of dysmenorrhoea ($\chi^2=6.7522$, $df=2$) at 0.05 level of significance. So remaining selected demographic variables is not having association with pain scores in cinnamon tea group
- There is a significant association between pain scores of turmeric water experimental group girls selected demographic variables like family history of dysmenorrhoea ($\chi^2=6.7522$, $df=2$), education ($\chi^2=9.127$, $df=3$), dietary pattern ($\chi^2=68.207$, $df=3$), at 0.05 level of significance. So remaining selected demographic variables is not having association with pain scores in turmeric water group
- A randomized double blind trial was conducted at Iran to assess the effect of cinnamon on primary dysmenorrhea.

76 females student received placebo (n=38), capsules containing starch or cinnamon (n=38, capsules contain 420 mg cinnamon). The results were the mean amount of menstrual pain and bleeding in the cinnamon group was significantly lower than the placebo group ($p<0.05$ and $p>0.001$, respectively) (Molouk Jaafarpour, Masoud Hatefi, Fatemeh Najafi et al)

- In present study it is observed that there is reduction in dysmenorrhoea in both cinnamon tea and turmeric water group.

CONCLUSION

The study was conducted with the background of Cinnamon is known to reduce dysmenorrhoea whether it is true to turmeric water. Among 60 hostel girls the dysmenorrhea level was calculated. No pain (0), mild pain(1-3), moderate pain(3-7), severe pain (7-10),then worst pain (10). Pre test pain score was collected and cinnamon tea and turmeric water administered in two separate groups followed by that post test pain score was collected. The cinnamon tea and turmeric water shows significant reduction in dysmenorrhea individually. When comparison made no significant difference were found. The study concludes that cinnamon and turmeric both are having equal effectiveness to reduce dysmenorrhoea.

RECOMMENDATIONS

- Following recommendations are offered for future research
- The similar studies may be conducted using other type's alternative therapies such as fish oil, rose tea.
- An exploratory and descriptive study may be undertaken to assess the prevalence dysmenorrhoea among degree girls
- An exploratory and descriptive study may be conducted to assess the copy strategies used by the girls to manage dysmenorrhoea

- A descriptive study may be conducted to assess the factors influence the prevalence of severity of dysmenorrhoea girls
- An experimental study can be conducted to assess the effectiveness of vitamin d1 in the treatment of dysmenorrhoea
- Similar study can be done for larger samples for wider generalization
- Summary

ACKNOWLEDGEMENT(S)

I am grateful to almighty god for the abundant blessings showered upon me throughout the study. I, the investigator of the study, owe my sincere thanks and gratitude to all those who have contributed towards the successful completion of the study.

I express my sincere thanks to all the participants for helping me to undertake, this study.

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How to cite this article: Dyawapur A, Patil NG, Metri L. Effectiveness of cinnamon tea and turmeric water for reducing dysmenorrhoea among degree girls. International Journal of Science & Healthcare Research. 2018; 3(1): 88-96.
