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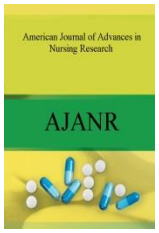

EFFECTIVENESS OF CINNAMON TEA VERSUS TURMERIC WATER ON DYSMENORRHOEA AMONG ADOLESCENT GIRLS IN SELECTED RURAL AREAS AT KANNIYAKUMARI DISTRICT, TAMILNADU

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ABSTRACT

Dysmenorrhoea is the common health problem among adolescent girls and leading cause of recurrence short term absenteeism from theschool or college. The aim of the study was to compare the effectiveness of cinnamon tea versus turmeric water on Dysmenorrhoea among adolescent girls in selected rural areas at Kanniyakumari District, Tamilnadu. Methods: Time series design with multiple institutions of treatment with comparison group design was adopted for the study. Sixty adolescent girls were selected by using purposive sampling technique. Each group consisted of 30 samples. Group I had the intervention of cinnamon tea and Group II had the of turmeric water. Result: The mean and SD of pre-test, post-test 1, post-test 2 and post-test 3 were 9.433+1.135, 8.667+1.213, 7.6+1.252 and 5.5+1.432 respectively in Group 1. The mean and SD of pre-test, post-test 1, post-test 2 and post-test 3 were 9.633+1.098, 8.133+1.252, 6.867+1.252 and 5.5+1.432 respectively in Group II. The 't' values were 0.693,1.678, 2.268 and 0 respectively. Thus, there was a significant difference in the levels of Dysmenorrhoea at $p<0.05$ level except post-test 3 between group I and II. Conclusion: The study concluded that, there was a significant reduction in Dysmenorrhoea after administration of cinnamon tea and turmeric water in Group I and Group II. While comparing both groups, the intervention of cinnamon tea administration was more effective in reducing Dysmenorrhoea than the intervention of turmeric water administration among adolescent girls.

INTRODUCTION

The word 'adolescence' comes from the Latin word "adolescere" means "to grow into adulthood" or "to grow into maturity". Developmentally adolescence means "achieving an identity". The Indian academy of Paediatrics took lead in focusing the attention on adolescence by declaring the year 2000 as the "year of the adolescents" and August 1st as the "Teenagers day". [1] Adolescent is the period of changes in the personality of a young girl and develops marked physical, social, emotional and cognitive. It is indicated by the secondary characteristics of changes reproductive maturity. The period of adolescence is a period of physical and psychological preparation for safe motherhood [2].

The period of adolescence is divided into three phases: early, middle and late adolescence. Early adolescence consists of 10-13 years, middle adolescence consists of 14-16 years, and late adolescence consists of 17-20 years of age group. One billion adolescents are there in this world equal to fifth of world's population. India has reached one billion marks, out of which 21% are adolescents. [3]

The first ever occurance of cyclic events is termed

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as menarche. It means first menstrual bleeding. The average age of menarche is 12 years, although between the ages of 8 and 16 is considered normal. The onset of menarche is often associated with the problems of irregular menstruation, excessive bleeding and painful menstruation. This is a common problem in adolescent girls. Menstruation is controlled by hormones which influence not only physiological but also psychological changes. All women experience discomfort to a greater or lesser degree during this period. [4]

Monthly physiological changes takes place in the ovaries of the uterus and regulated by hormones of hypothalamus, pituitary gland and ovaries. These cycles commence at puberty and occur simultaneously and together are known as the female reproductive cycle. The functions of the reproductive cycle are to prepare the eggoften referred to as the gamete or oocyte for fertilization by the spermatozoon and to prepare the uterus to receive and nourish the fertilized egg. If fertilization has not taken place in the inner lining of the uterus or endometrium and the eggs are shed and bleeding occurs per vagina and the cyclic events begin again.

The term eumenorrhea denotes normal and regular menstruation that lasts for typically 3-5 days although 2-7 days is considered normal. The average blood loss during menstruation is 50-150 ml. the blood is inhabited from clotting due to the enzyme plasma contained in the experience uterine cramps caused by muscular contractions to expel the tissue. Severe uterine cramps are known as Dysmenorrhoea.

Dysmenorrhoea refers to the chronic cyclic pain or discomfort in the pelvic region during a menstrual period. It is considered to be a leading cause of recurrent short term school or college absence in adolescent girls.it is common problem in women of reproductive age. The term Dysmenorrhoea refers to severe painful cramping sensation in the lower abdomen often accompanied by sweating, tachycardia, headache, nausea, vomiting, diarrhea and tremulosness occurring just before or during the menses [5]

Dysmenorrhoea itself is not life threatening, but it is found to have a profound impact on the daily activities. It may result in missing school or college and inability to participate in sports or other activities. Dysmenorrhoea is the leading cause of recurrent school or college absenteeism among the adolescent girls 75%. Thereby, it may accentuate the emotional distress brought on the pain [6]

The main cause of Dysmenorrhoea is not clearly understood, but it related to uterine prostaglandin levels, especially PGF-2 (Prostaglandin F2) which is noticeable in women who have severe Dysmenorrhoea, this process occurs when the uterins wall expulsion leading to release of prostaglandin from endometrial cella in the time of starting of menstruation. Prostaglandin is responsible of contractions of the smooth muscle of the uterus, which is related to pain. The highest level of prostaglandin usually occurs in the first two days of menstruation [7-8]

Statement of the Problem

A comparative study to assess the Effectiveness of Cinnamon Tea versus Turmeric water on Dysmenorrhoea among Adolescent Girls in Selected Rural Areas at Kanniyakumari District, Tamilnadu

Objectives of The Study

1. To assess the level of Dysmenorrhoea before and after administration of cinnamon tea versus turmeric water among adolescent girls in Group I and Group II.
2. To compare the effectiveness of cinnamon tea versus turmeric water on Dysmenorrhoea among adolescent girls in Group I and Group II.
3. To associate the pre-test score of Dysmenorrhoea with selected demographic and clinical variables among adolescent girls in Group I and Group II.

Review of Literature

Study related to effectiveness of Cinnamon Tea on Dysmenorrhoea among Adolescent Girls.

[9-10] conducted a study on "Efficacy of Herbal Medicine (Cinnamon) for Primary Dysmenorrhoea: A systematic review and Meta-analysis of Randomized Controlled Trials". Relevant studies were searched in multiple databases. Nine studies with 647 patients were selected. Compared with the results in the control group, pain intensity was significantly relieved in the trial group when assessed by the intervention (cinnamon vs placebo: WMD = 16.200, 95% CI=15.271-17.129). the study concluded that, cinnamon effectively reduced the pain intensity and shortened the duration of menstrual pain.[11] did a study on "The effect of Cinnamon on menstrual Bleeding and systematic symptoms with primary Dysmenorrhoea". In a randomized double-blind trial, 76 female students received placebo (n=38, capsules containing starch, three times a day (TDS) or cinnamon (n=38, capsules containing 420mg cinnamon, TDS) in 24 hours. Visual analogue scale (VAS) was used to determine the severity of pain and nausea. The mean amount of menstrual bleeding in the cinnamon group was significantly lower than the placebo group ($P<0.05$ and $P<0.001$, respectively). The mean pain severity score in the cinnamon group was less than the placebo group at various intervals (4.1 ± 0.5 vs 6.1 ± 0.4 at 24 hours, 3.2 ± 0.6 vs 6.1 ± 0.4 at 48 hours, and 1.8 ± 0.4 vs $4.0\pm.03$ at 72 hours, respectively) ($P<0.001$). the study concluded that, regarding the significant effect of cinnamon on reduction of pain, menstrual bleeding, nausea and vomiting with primary Dysmenorrhoea without side effects, it can be regarded as a safe and effective treatment for Dysmenorrhoea in young women.

Study related to Effectiveness of Turmeric Water on Dysmenorrhoea among Adolescent Girls

Previously it has been [12] published a study on "The Effect of Turmeric on Dysmenorrhoea: Prospective

Case-control Study". After the diagnosis of Dysmenorrhoea was confirmed by the clinician, patients were asked to choose one of the covered papers but wrote Group I (Control, n=75) and Group II (Case, n=75), after which they received their related treatment from the doctor in another examination room. Naproxen (750 mg/day) was prescribed to all patients and 1g/day turmeric powder was added to the treatment protocol of Group II patients as a food supplement to be consumed per oral during menstrual bleeding. The overall median pain score of the study population before the treatment was 9.17 (range: 5-10), which decreased to 2.81 (range: 1-5) after the treatment, with a Z-score of -10.64. The decrease in VAS scores was significant in both groups (P=0.001 for both). The percentage of VAS score decrease (61.7% vs. 76.8%) and the absolute score decrease (5.6 vs. 7.0) were significantly higher in Group II compared to Group I (P=0.001, for both). The study concluded that, turmeric had a major role in reduction of Dysmenorrhoea and Group II had a reduction than Group I.

Similarly [12-13] conducted a study on "Effectiveness of curcumin (Turmeric) Capsule on the severity and Duration of Dysmenorrhoea in Students of Iran University of Medical Science". This study was a double blind randomized controlled clinical trial. The mean of pain intensity score after intervention in the drug group was 4.6±105 and in the placebo group was 5.8±1.82. the mean of pain duration before taking the pill in the drug group was 5.408±3.001 and in the placebo group was 0.725±0.04; also three hours after taking the pill in the drug group it was -5.017±2.294 and in the placebo group was 0.614±0.99, which indicates as a significant difference between the two groups in terms of severity and duration of pain (P<0.001).

A study was conducted [14-15] on "The Effectiveness of Turmeric Drink in decreasing the intensity of Dysmenorrhoea". The study tested the use of turmeric drinks to reduce the pain of Dysmenorrhoea by comparing the home industry. The method uses experiments with pre-test and post-test research designs. Research subjects are youthful women aged 15-18 years and will support this research project. The results showed that, a significant difference in the administration of turmeric drinks to the reduction of Dysmenorrhoea pain in adolescent girls (P≤0.001).

Studies related ti Effectiveness of Cinnamon Tea Versus Turmeric Water on Dysmenorrhoea among Adolescent Girls [16]

Tea versus Turmeric Water for Reducing among Degree Girls". The research design selected for this study was pre-experimental one group pre-test and post-test design. Non probability purposive sampling technique was used in this study. Total sample size was 60. The calculated 't' value shows that, there was a significant difference between pre-test and post-test effect of cinnamon tea)t28=15.78, df=28) and pre-test and post-test effect of turmeric water was (t28=2.11, df28=2.05). [17-18] The unpaired 't' test showed that, there was no significant difference between cinnamon tea and turmeric water in reducing the Dysmenorrhoea (t58=0.5, df58=1.98).[19- 20] The study result showed that, cinnamon and turmeric both are having equal effectiveness to reduce Dysmenorrhoea.

METHODOLOGY

The present study was conducted to assess the effectiveness of cinnamon tea versus turmeric water among adolescent girls in selected rural areas at Kanniyakumari District, Tamil Nadu.

Research Approach

To accomplish the objectives of the study, the researcher chosen quantitative research approach.

Research Design

In this study, time series design with multiple institutions of treatment with comparison group design was used to determine the effectiveness of cinnamon tea versus turmeric water among adolescent girls.

Group I - O_1 X_1 O_2 X_1 O_3 X_1 O_4

Group II - O_1 X_2 O_2 X_2 O_3 X_2 O_4

Demographic Variables

It consisted of age in years, religion, type of family, family monthly income, dietary habit and source of health awareness among adolescent girls. [20-23]

Clinical Variables

It consisted of age at menarche, weight in kilograms, menstrual pain onset, menstrual cycle pattern, duration of menstruation, nature of menstrual cycle, family history of Dysmenorrhoea, college absenteeism due to Dysmenorrhoea and treatment used for Dysmenorrhoea among adolescent girls.[24-25]

Sample

Adolescent girls who fulfilled the inclusion criteria were selected as a sample.

Sample Size

The **s**ample size consisted of 60 adolescent girls on the basis of inclusion criteria. Among them, 30 samples were allotted to Group I and 30 samples were allotted to Group II.

Sampling Technique

Purposive sampling technique was used to select the samples in this study.

Citeria for Sample Selection

Inclusion Criteria

Adolescent girls who were

- In the age group of 18 – 21 years

- Having regular menstrual cycle for 3 months
- Having severe Dysmenorrhoea
- Having first day of menstruation
- Available during the data collection period

Exclusion criteria

Adolescent girls who were

- Having gynecological disorders
- Having any herbal allergies
- Receiving pharmacological therapies for controlling pain during menstruation
- Unable to understand and speak Tamil or English language

Development and Description of The Tool

Based on the objectives, the tool was developed. The tool was consisted of three sections.

Section A	**:**	Demographic Variables
Section B	**:**	Clinical Variables
Section C	**:**	WaLIDD Score

Section A – Demographic Variables

It consisted of age in years, religion, type of family, family monthly income, dietary habit and source of health awareness among adolescent girls.[26]

Section B – Clinical Variables

It consisted of age at menarche, weight in kilograms, menstrual pain onset, pattern of menstrual cycle, duration of menstruation, family history of Dysmenorrhoea and college absenteeism due to Dysmenorrhoea among adolescent girls.

Section C – WaLIDD SCORE

WaLIDD (Working ability, Location, Intensity, Days of pain, Dysmenorrhoea) Score was designed to diagnose Dysmenorrhoea. There are four options given in this scale. Total obtainable score was 12. The obtained score was interpreted as follows,

0	-	Without Dysmenorrhoea
1 - 4	-	Mild Dysmenorrhoea
5 - 7	-	Moderate Dysmenorrhoea
8 - 12	-	Severe Dysmenorrhoea

Content Validty

The content validity of the tool including demographic variables, clinical variables and WaLIDD Score was validated by the panel of experts in the field of Obstetrics and Gynaecology, Naturopathy, Biostatistics and Nursing. [27] They were requested to give their valuable suggestions on the appropriateness and relevance of the items in the tool. According to their suggestions, the tool was modified.

Pilot Study

A pilot study was conducted to assess the feasibility of the study and also to determine the plan of statistical analysis. It was conducted in Vadakkanpagam and Kallankuzhi Village at Kanniyakumari District among 12 samples in a manner in which the final study. Data were analyzed to find out the suitability of statistics. The pilot study showed that, the study was feasible.

Table 1: Association between Pre-Test Score of Dysmenorrhoea And Selected Demographic And Clinical Variables Of Adolescent Girls In Group I And Group II N= 30

S. No	Demographic Variables	Group I		Group II	
		X^2	P Value	X^2	P Value
1.	**Age in Years** a)18-19 years b)20-21 years	0.238	0.625	0.679	0.41*
2.	**Religion** a)Hindu b)Christian c)Muslim	1.172	0.556*	1.382	0.501*
3.	**Type of Family** a)Nuclear b)Joint	0.238	0.625*	0.679	0.41*
4.	**Family Monthly Income** a)Less than Rs.10,000 b)Rs.10,001 – 20,000 c)Above Rs.20,001	2.359	0.307*	1.898	0.387*
5.	**Dietary Habit** a)Vegetarian b)Non-Vegetarian	0.238	0.625	2.802	0.294*

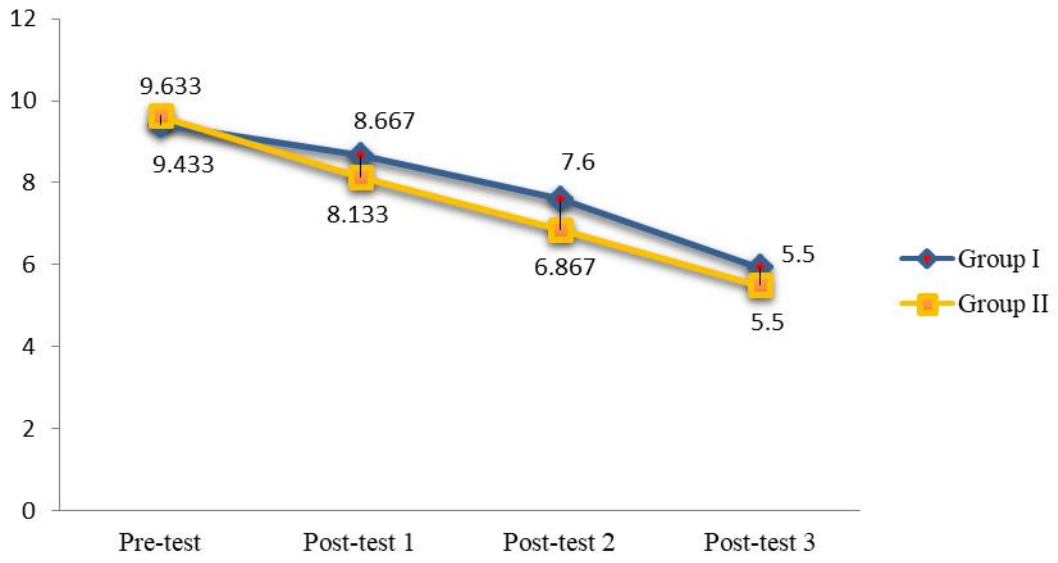
6.	**Source of Health Awareness** a)Mass Media b)Education c)Medical Personal d)Friends	2.192	0.534*	1.505	0.681*

***p<0.05 level of Significant.**

Table 2: Association between pre-test score of dysmenorrhoea and selected clinical variables among adolescent girls in group I and group II N=30

S. No	Clinical Variables	Group I		Group II	
		X^2	P Value	X^2	P Value
1.	Age at Menarche (in years) a)Below 9 b)10-12 c)13-15 d)Above 50	1.09	0.779*	7.301	0.063*
2.	Weight in Kilograms a)Below 40 b)41-45 c)46-50 d)Above 50	1.09	0.779*	7.301	0.062*
3.	Menstrual pain onset a)Before onset of menstruation b)First day of menstruation c)Second day of menstruation	0.886	0.642*	2.97	0.226*
4.	Pattern of Menstrual Cycle a)25-27 days b)28-30 days	2.4	0.121*	13.031	0.003*
5.	Duration of Menstruation a)1-3 days b)4-6 days c)More than 6 days	1.292	0.524*	0.833	0.659*
6.	Family history of Dysmenorrhoea a)Yes b)No	1.221	0.269*	2.801	0.094*
7.	College absenteeism due to Dysmenorrhoea a)Yes b)No	0.136	0.712	2.738	0.098*

***p<0.05 level of significant**



RESULT

Description of selected Demographic variables among Adolescent Girls in Group I and Group II

In Group I, among 90% of adolescent girls were in the age group of 18-19 years, 66.67% were Christians, 90% belongs to nuclear family, 56.67% of samples got the monthly income of Rs.10,001 – 20,000, 90% of adolescent girls are non vegetarian and 63.33% of samples got health awareness through mass media.

Among 83.33% of adolescent girls were in the age group of 18-19 years, 47.67% were Christians, 83.33% belongs to nuclear family, 56.67% got the monthly income of Rs.10,001 – 20,000, 93.33% of adolescent girls are non vegetarian and 56.67% of samples got health awareness through mass media in Group II. [28-29]

Description of selected Clinical Variables among Adolescent Girls in Group I and Group II

In Group I, among 53.3% of adolescent girls were attained menarche at the age of 10-12 years, 50% of samples were having the weight of 41-45 kg, 63.33% were got pain onset at first day of menstruation, 66.67% having the cycle of 28-30 days, 43.33% had 4-6 days of menstruation, 56.67% of adolescent girls were having the family history of Dysmenorrhoea and 56.67% of adolescent girls having college absenteeism in Group I.[30]

Among 47.67% of adolescent girls were attained menarche at the age of 10-12 years, 50% were having the weight of 41-45 kg, 73.33% of adolescent girls were got pain onset at first day of menstruation, 56.67% having the cycles of 28-30 days, 33.33% had 1-3 days of menstruation, 60% of adolescent girls were having the family history of Dysmenorrhoea and 56.67% were having college absenteeism in Group II.

CONCLUSION

The findings of the study have several implications in various areas like nursing education, nursing research, nursing practice and nursing administration.

Nursing Education

- Nursing curriculum should concentrate in alternative therapies for Dysmenorrhoea which can be incorporated with routine practices.
- The nursing student should know the various natural home remedies for reducing Dysmenorrhoea
- Nurse educator can encourage the students t conduct in service education regarding alternative therapies for Dysmenorrhoea like cinnamon tea, turmeric water, ginger, garlic, etc.
- Nurse educators should evaluate their students level of Dysmenorrhoea periodically and encourage them to take herbal remedies regularly for their reduction of Dysmenorrhoea.

Nursing Research

- Extensive research must be conducted on home remedies on Dysmenorrhoea among adolescent girls.
- The study findings of the research should be encourage further research studies on the effectiveness of cinnamon tea and turmeric water to reduce Dysmenorrhoea among adolescent girls.
- Nurse research have to develop newer tool to determine Dysmenorrhoea levels among adolescent girls.

- These findings of the study can be effectively utilized by emerging researchers to expand professional knowledge.

Nursing Practice

- Workshops, lectures and discussion programmes can be arranged in sub center and primary health center for educating the adolescent girls on reduction of Dysmenorrhoea
- The community health nurse has a key role to provide effective nursing care for improvement of the health status in reducing the level of Dysmenorrhoea among adolescent girls.
- Nurses must improve their knowledge regarding alternative therapies like Yoga, Acupuncture, Acupressure, Massage, Hot application, Cinnamon tea, Turmeric water, Ginger, Garlic, etc.
- Nurses can prepare teaching model and learning material for the student nurses to handle the Dysmenorrhoea.

Nursing Administration

- The emphasis on research and clinical studies is needed to improve the quality of nursing care.
- The findings of the research should be disseminated through conferences, seminars and publishing in journals
- The evidenced based practice should be introduced on the research findings.
- Nurse administrators can conduct in-service education programme on effective management of Dysmenorrhoea
- The findings of this study can be effectively utilized by emerging researches to expand their professional knowledge.
- Nurse administrators should highlight the importance of cinnamon tea and turmeric water on Dysmenorrhoea through posters, pamphlets and handouts.

Recommendations for Further Research

Based on the findings, the researcher proposed the following recommendations for further studies.

- A similar study can be done in different settings like schools, colleges, etc.
- A descriptive study can be conducted to assess the level of Dysmenorrhoea among adolescent girls with larger population.
- A comparative study can be carried out among adolescent girls in rural and urban area.
- A similar study can be undertaken on large samples for better generalizations of findings.
- A longitudinal study can be conducted to find the long term effect of cinnamon tea and turmeric water on Dysmenorrhoea.
- A true experimental study to assess the effectiveness of cinnamon tea and turmeric water on Dysmenorrhoea among adolescent girls.

The study can be replaced with samples of different age groups

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