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Effectiveness of Dietary Ginger V/S Active Exercise on Primary Dysmenorrhea among Adolescent Girls

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Abstract :
Background of the Study: Primary Dysmenorrhea is defined as recurrent, crampy pain during menstruation in the absence of pelvic pathology. Ginger is a fundamental herbal treatment for it and ginger's amazing properties act as anti-inflammatory action. Ginger has been used to treat common ailments such as headaches, nausea, vomiting, colic, and even painful menstruation. Active stretching exercise will effective in the reduction of dysmenorrheal symptoms. Active exercise is also positively affect to this problem. Objective: The main objective of present study was to assess the effectiveness of dietary ginger v/s active exercise on primary dysmenorrhea among adolescent girls. Material and Methods: An Evaluatory research approach with quasi experimental- Non-Equivalent control group design was used. The sampling technique was Non-Probability Convenience sampling. The sample were adolescent girls who were age of 17-19 years in selected nursing colleges and total sample size were 40. (20 from each group) Data collection was done from 1/08/2015 to 30/08/2015. The tool consists of section A: Demographic Tool, B: Universal pain assessment tool, C: Menstrual Distress Questionnaire, D: Preparation & administration of dietary ginger, E: Preparation & administration of active exercise. The reliability of tool was established by Cron Bach's r test method. Data was analysed by using descriptive & inferential statistics. In that frequency, mean, SD, t value & Chi square test were included. The data was also presented in graphically. Results: According to universal pain assessment scores, in dietary ginger group, mean of post-test was 2.25 (22.5%) and in active exercise group mean of post-test was 3.60 (36%). So that mean difference in both group were 5.90 (59%) & 4.15 (41.5%). According to menstrual distress scores, in dietary ginger group, mean of post-test was 15.05 (12.5%) and in active exercise group mean of post-test was 26.05 (21.7%). So that mean difference in both group were 80.85 (67.4%) & 69.70 (58.1%). It proves that dietary ginger is more effective than active exercise among adolescent girls in selected Nursing Colleges on Primary Dysmenorrhea. Interpretation and Conclusion: It concluded that dietary ginger and active exercise both are effective but it proves that dietary ginger is more effective than active exercise among adolescent girls in nursing colleges on primary dysmenorrhea.

Keywords: *Active exercise, Adolescent girls, Dietary Ginger, Effectiveness, Primary Dysmenorrhea*

1. Introduction

"Dysmenorrhea" is derived from a Greek root translating to difficult menstrual flow. Dysmenorrhea can be divided into 2 broad categories of primary and secondary. Primary dysmenorrhea is defined as recurrent, crampy pain occurring with menses in the absence of identifiable pelvic pathology. Secondary dysmenorrhea is menstrual pain associated with underlying pelvic pathology such as endometriosis. Primary dysmenorrhea usually begins in adolescence after the establishment of ovulatory cycles.

In various cultures, ginger has been used to treat common ailments such as headaches, nausea, vomiting, indigestion, flu, diarrhea, arthritis, colic, and even painful menstruation.

Active stretching exercise will increase the blood flow and metabolism of the uterus during exercise may be effective in the reduction of dysmenorrheal symptoms. The purpose of core strengthening is to combine the concepts of lumber stabilization and how instability can lead to injury and pain specifically during stressful times of the female body and one of these repetitive stressful times is dysmenorrhea.

2. Need for the Study

India is home to more than 243 million adolescents, who account for almost 20% of the country's population. Among that 40-45% of adolescent girls having menstrual problems in India.

The investigator in her personal experiences came across the situation during her hostel life that most of the students staying in hostel are suffering with primary dysmenorrhoea and most of them used to take some measures to reduce the pain such as medication, hot application etc. But never observed that use of ginger preparation as management of dysmenorrhoea. The researcher has reviewed so many literatures, which explained the benefits of ginger in this aspects with less side effects when compare to allopathic management. Hence the researcher is interested to apply their knowledge of Indigenous System of medicine in nursing care management as a part of pain management, she has taken this present study.

3. Objectives

- → To assess the degree of pain before administration of dietary ginger among adolescent girls in selected nursing colleges.
- → To assess the degree of pain before administration of active exercise among adolescent girls in selected nursing colleges.
- → To assess the degree of pain after administration of dietary ginger among adolescent girls in selected nursing colleges.
- → To assess the degree of pain after administration of active exercise among adolescent girls in selected nursing colleges.
- → To assess the effectiveness of dietary ginger v/s active exercise on pain relieve for primary dysmenorrhea among adolescent girls in selected nursing colleges.
- → To determine the association between pre-test pain score with selected demographic variables.

4. Hypothesis

- H1: There will be significant difference in mean score pain level among the subjects exposed to dietary ginger with those who are with the active exercise.
- H2: There will be significant association between pre-test pain score with selected demographic variables.

5. Conceptual Framework of the Study

The conceptual framework selected for the study was based on Ernestine Weidenbach's "prescriptive theory" (Helping art of clinical nursing).

6. Research Methodology

6.1. Research Approach

Evaluatory approach

6.2. Research Design

Quasi-experimental – non-equivalent control group design.

6.3. Variables

6.3.1. Independent variables: Dietary ginger & active exercise.

6.3.2. Dependent variable: Primary dysmenorrhea.

6.4. Criteria for Selection of Sample

6.4.1. Inclusion Criteria

- Adolescent girls who are studying in nursing college.
- Adolescent girls who are willing to take part in the study.
- Adolescent girls who are available at the time of data collection.
- Adolescent girls who have primary dysmenorrhea.

6.4.2. Exclusion Criteria

- Adolescent girls who have attended similar previous studies.
- Adolescent girls who have severe dysmenorrhea with other condition like recent any surgery, heart disease, respiratory disease.
- Adolescent girls who have any medical disorders or found any secondary cause on gynecological check-up.
- Adolescent girls who were married or pregnant.
- Adolescent girls whose period was irregular & absent for more than 2 months.
- Adolescent girls who do not have pain.
- Adolescent girls who do not take any analgesic and other remedies.

6.5. Sample
Adolescent girls in Nursing Colleges.

6.6. Sampling Technique
Non-Probability Convenience Sampling Technique

6.7. Sample size
Total 40 adolescent girls- 20 adolescent girls in dietary ginger group
20 dolescent girls in active exercise group

6.8. Development of Tools
The tool consisted as below section:

- → Part A: Demographic tool
- → Part B: Universal pain assessment tool
- → Part C: Menstrual distress questionnaire
- → Part D: Preparation and administration of dietary ginger
- → Part E: Preparation & administration of active exercises

7. Result
The data was analyzed and presented in the following sections:

- → Section 1**:** Demographic characteristics of respondents
- → Section 2**:** Overall and Aspect wise Pre-test score at Universal Pain Assessment level and menstrual distress level
- → Section 3**:** Overall and Aspect wise Post-test score at Universal Pain Assessment level and menstrual distress level
- → Section 4: Overall and aspect wise mean pretest and posttest
- → Section 5**:** Association between Demographic variables and Pre-test Universal Pain Assessment and Mental distress level

Group	Aspects	Max. Score	Universal Pain Assessment Scores				Paired 't' Test
			Mean	SD	Mean (%)	SD (%)	
Dietary Ginger (n=20)	Pre test	10	8.15	1.5	81.5	14.0	13.19*
	Post test	10	2.25	1.1	22.5	10.7	
	Difference	10	5.90	2.0	59.0	20.0	
Active Exercise (n=20)	Pre test	10	7.75	1.3	77.5	13.3	12.13*
	Post test	10	3.60	10.7	36.0	13.1	
	Difference	10	4.15	1.5	41.5	15.3	

Table 1: over all pre-test and post-test mean universal pain assessment scores
** Significant at 5% level, t (0.05, 19df) = 2.093*

Group	Aspects	Max. Score	Menstrual Distress Level				Paired 't' Test
			Mean	SD	Mean (%)	SD (%)	
Dietary Ginger (n=20)	Pre test	120	95.90	3.6	79.9	3.0	68.50*
	Post test	120	15.05	2.8	12.5	2.3	
	Difference	120	80.85	5.3	67.4	4.4	
Active Exercise (n=20)	Pre test	120	95.75	3.5	79.8	2.9	50.95*
	Post test	120	26.05	4.4	21.7	3.6	
	Difference	120	69.70	6.1	58.1	5.1	

Table 2: over all pre-test and post-test mean menstrual distress scores
** Significant at 5% level, t (0.05, 19 df) = 2.093*

Demographic Variables	Category	Sample	Pain Assessment degree				χ^2 Value	P Value
			Moderate		Severe			
			N	%	N	%		
Age of girl (years)	16-17	6	0	0.0	6	100.0	9.29* (2df= 5.991)	P<0.05
	17-18	7	4	57.1	3	42.9		
	18-19	7	0	0.0	7	100.0		
Age of Menarche (years)	10-12	2	2	100.0	0	0.0	9.17* (2df= 5.991)	P<0.05
	13-15	15	2	20.0	13	86.7		
	> 15	3	0	0.0	3	100.0		
Menstrual cycle	< 30 days	8	1	12.5	7	87.5	2.81 NS (2df= 5.991)	P>0.05
	30 days	8	3	37.5	5	62.5		
	> 30 days	4	0	0.0	4	100.0		
Duration of Flow	< 3 days	4	0	0.0	4	100.0	15.00* (2df= 5.991)	P<0.05
	3-5 days	11	0	0.0	11	100.0		
	> 5 days	5	4	80.0	1	20.0		
Sources of Information	Nursing books	3	1	33.3	2	66.7	0.61 NS (3df= 7.815)	P>0.05
	Television	1	0	0.0	1	100.0		
	Electronic data base	5	1	20.0	4	80.0		
	Others	11	2	18.2	9	81.8		
Religion	Hindu	18	4	22.2	14	77.8	0.56 NS (2df= 5.991)	P>0.05
	Muslim	0	0	0	0	0.00		
	Christian	2	0	0.0	2	100.0		
Food habit	Vegetarian	15	4	26.7	11	73.3	1.67 NS (2df= 5.991)	P>0.05
	Non-vegetarian	0	0	0	0	0.00		
	Mixed	5	0	0.0	5	100.0		
Education of Mother	Illiterate	1	0	0.0	1	100.0	15.00* (3df= 7.815)	P<0.05
	Primary	8	0	0.0	8	100.0		
	Secondary	5	4	80.0	1	20.0		
	Graduate	6	0	0.0	6	100.0		
Education of Father	Primary	4	0	0.0	4	100.0	2.81 NS (2df= 5.991)	P>0.05
	Secondary	8	3	37.5	5	62.5		
	Graduate	8	1	12.5	7	87.5		
Combined		20	4	20.0	16	80.0		

Table 3: Association between Demographic variables and Pre-test Universal Pain Assessment level-Dietary Ginger Respondents n=20

** Significant at 5% Level, NS: Non-significant*

Demographic variables	Category	Sample	Menstrual distress level				X^2 value	P Value
			Moderate		Severe			
			N	%	N	%		
Age of girl (years)	16-17	6	0	42.9	6	100.0	6.56* (2df= 5.991)	P<0.05
	17-18	7	1	14.3	6	85.7		
	18-19	7	3	42.9	4	57.1		
Age of menarche (years)	10-12	2	2	100.0	0	0.0	12.68* (2df= 5.991)	P<0.05
	13-15	15	1	6.7	14	93.3		
	> 15	3	0	0.0	3	100.0		
Menstrual cycle	< 30 days	8	2	25.0	6	75.0	1.37 ns (2df= 5.991)	P>0.05
	30 days	8	1	12.5	7	87.5		
	> 30 days	4	0	0.0	4	100.0		
Duration of flow	< 3 days	4	1	25.0	3	75.0	0.71 ns (2df= 5.991)	P>0.05
	3-5 days	11	1	9.1	10	90.9		
	> 5 days	5	1	20.0	4	80.0		
Sources of information	Nursing books	3	0	0.0	3	100.0	10.59* (3df= 7.815)	P<0.05
	Television	1	0	0.0	1	100.0		
	Electronic data base	5	3	60.0	2	40.0		
	Others	11	0	0.0	11	100.0		
Religion	Hindu	18	1	5.6	17	94.4	12.59* (1df= 3.841)	P<0.05
	Christian	2	2	100.0	0	0.0		
Food habit	Vegetarian	15	0	0.0	15	100.0	0.13 ns (1df= 3.841)	P>0.05
	Mixed	5	3	60.0	2	40.0		
Education of mother	Illiterate	1	1	100.0	0	0.0	7.86* (3df= 7.815)	P<0.05
	Primary	8	1	12.5	7	87.5		
	Secondary	5	1	20.0	4	80.0		
	Graduate	6	0	0.0	6	100.0		
Education of father	Primary	4	1	25.0	3	75.0	0.39 ns (2df= 5.991)	P>0.05
	Secondary	8	1	12.5	7	87.5		
	Graduate	8	1	12.5	7	87.5		
Combined		20	3	15.0	17	85.0		

Table 4: Association between Demographic variables and Pre-test menstrual distress level –dietary ginger Respondents n=20

** Significant at 5% Level, NS: Non-significant*

Demographic Variables	Category	Sample	Pain assessment level				χ^2 Value	P Value
			Moderate		Severe			
			N	%	N	%		
Age of girl (years)	16-17	5	4	80.0	1	20.0	10.99* (2df= 5.991)	P<0.05
	17-18	9	2	22.2	7	77.8		
	18-19	6	0	0.0	6	100.0		
Age of Menarche (years)	10-12	5	0	0.0	5	100.0	6.19* (2df= 5.991)	P<0.05
	13-15	8	1	12.5	7	87.5		
	> 15	7	4	57.1	3	42.9		
Menstrual cycle	< 30 days	5	4	80.0	1	20.0	10.99* (2df= 5.991)	P<0.05
	30 days	9	1	11.1	8	88.9		
	> 30 days	6	0	0.0	6	100.0		
Duration of Flow	< 3 days	4	0	0.0	4	100.0	20.00* (2df= 5.991)	P<0.05
	3-5 days	11	0	0.0	11	100.0		
	> 5 days	5	5	100.0	0	0.0		
Sources of Information	Nursing books	6	2	33.3	4	66.7	1.93 NS (3df= 7.815)	P>0.05
	Television	2	1	50.0	1	50.0		
	Electronic data base	3	0	0.0	3	100.0		
	Others	9	2	22.2	7	77.8		
Religion	Hindu	16	3	18.8	13	81.2	3.44 NS (2df= 5.991)	P>0.05
	Muslim	3	2	66.7	1	33.3		
	Christian	1	0	0.0	1	100.0		
Food habit	Vegetarian	15	3	20.0	12	80.0	0.98 NS (2df= 5.991)	P>0.05
	Non-vegetarian	2	1	50.0	1	50.0		
	Mixed	3	1	33.3	2	66.7		
Education of Mother	Illiterate	3	1	33.3	2	66.7	0.62 NS (3df= 7.815)	P>0.05
	Primary	6	2	33.3	4	66.7		
	Secondary	6	1	16.7	5	83.3		
	Graduate	5	1	20.0	4	80.0		
Education of Father	Primary	1	0	0.0	1	100.0	10.00* (2df= 5.991)	P<0.05
	Secondary	8	5	62.5	3	37.5		
	Graduate	11	0	0.0	11	100.0		
Combined		20	5	25.0	15	75.0		

Table 5: Association between Demographic variables and Pre-test at universal pain assessment level- active exercise Respondents n=20

** Significant at 5% Level, NS: Non-significant*

Demographic Variables	Category	Sample	Menstrual distress level				χ^2 Value	P Value
			Moderate		Severe			
			N	%	N	%		
Age of girl (years)	16-17	5	2	40.0	3	60.0	1.74 NS (2df= 5.991)	P>0.05
	17-18	9	1	11.1	8	88.9		
	18-19	6	1	16.7	5	83.3		
Age of Menarche (years)	10-12	5	4	80.0	1	20.0	15.00* (2df= 5.991)	P<0.05
	13-15	8	0	0.0	8	100.0		
	> 15	7	0	0.0	7	100.0		
Menstrual cycle	< 30 days	5	0	0.0	5	100.0	6.11* (2df= 5.991)	P<0.05
	30 days	9	4	44.4	5	55.6		
	> 30 days	6	0	0.0	6	100.0		
Duration of Flow	< 3 days	4	2	50.0	2	50.0	3.07 NS (2df= 5.991)	P>0.05
	3-5 days	11	1	9.1	10	90.9		
	> 5 days	5	1	20.0	4	80.0		
Source of Information	Nursing books	6	1	16.7	5	83.3	2.29 NS (3df= 7.815)	P>0.05
	Television	2	0	0.0	2	100.0		
	Electronic data base	3	0	0.0	3	100.0		
	Others	9	3	33.3	6	66.7		
Religion	Hindu	16	1	6.3	15	93.7	14.14* (2df= 5.991)	P<0.05
	Muslim	3	3	100.0	0	0.0		
	Christian	1	0	0.0	1	100.0		
Food habit	Vegetarian	15	1	6.7	14	93.3	6.88* (2df= 5.991)	P<0.05
	Non-vegetarian	2	1	50.0	1	50.0		
	Mixed	3	2	66.7	1	33.3		
Education of Mother	Illiterate	3	0	0.0	3	100.0	5.42 NS (3df= 7.815)	P>0.05
	Primary	6	1	16.7	5	83.3		
	Secondary	6	3	50.0	3	50.0		
	Graduate	5	0	0.0	5	100.0		
Education of Father	Primary	1	0	0.0	1	100.0	0.40 NS (2df= 5.991)	P>0.05
	Secondary	8	2	25.0	6	75.0		
	Graduate	11	2	18.2	9	81.8		
Combined		20	4	20.0	16	80.0		

Table 6: Association between Demographic variables and Pre-test ay Menstrual distress level-Active Exercise Respondents n=20

** Significant at 5% Level, NS: Non-significant*

8. Conclusion

The implication of the study can be discussed in four broad areas namely; Nursing Practice, Nursing Education, Nursing Administration and Nursing Research.

The research design, findings and the tool can be used as avenues for further evidenced based research. The expanded role of a professional nurse emphasizes those activities which promote health maintenance behaviour among the people.

The findings of the study can be used by nurse administrator in treatment of primary dysmenorrhea for providing information to nurse especially posted in Gynaecology department. It can be also used in a community department.

8.1. Recommendations

Based on the findings of the present study recommendations offered for the future study are:

- The similar study can be conducted on a larger sample for each group. This would provide invaluable evidence in the area of practice.
- A comparative study can be conducted with control group.
- Further study could be carried out to assess the effectiveness of dietary ginger v/s active exercise by adopting purposive sampling or randomized sampling of all adolescent girls.
- An experimental study could be carried out to assess the effectiveness of dietary ginger and active exercise on primary dysmenorrhea among adolescent girls.
- A similar study can be conducted on another adolescent girls of medical and para medical colleges, Arts and Commerce colleges and in community area.
- A study can be done to assess the knowledge and practice of adolescent girls regarding administration of dietary ginger v/s active exercise on primary dysmenorrhea.
- A longitudinal study can be done using post-test after one month, six months and one year to see the effectiveness of both on primary dysmenorrhea.

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