Original Research Article

A Study to Evaluate the Effectiveness of a Structured Teaching Programme on Knowledge regarding Selected Non-Pharmacological Management of Pre-Menstrual Syndrome among Adolescent Girls in Selected Schools, Bangalore

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Abstract

Premenstrual syndrome is a common problem in young girls which adversely affects their educational performance and emotional well-being. Changing lifestyle, modifying diet, exercises, yoga, massage and stress reduction can optimize quality of life and overall health of adolescent girls suffering from premenstrual syndrome. A pre-experimental one group pre test, post test design was conducted in selected schools, Bangalore which aimed to assess the effectiveness of a structured teaching program regarding selected non-pharmacological management of premenstrual syndrome and its association with its demographic variables. Data were collected from 60 samples by non-probability purposive sampling technique which was used by structured knowledge questionnaire prepared by the investigator to assess the effectiveness of a structured teaching program. Paired t-test value was 39.76, and the pre test score which was 40.4% and the post test score which was 83.0% significance difference between pre test and post test score was 42.6%. It reveals that the structured teaching program was highly effective. There was a significant association among adolescent girls with their demographic variables at (p 0.05) level of significance. This study finding indicate that the Structured Teaching Programme was effective in enhancing the knowledge of adolescent girls regarding selected non-pharmacological management of premenstrual syndrome in selected schools, Bangalore.

Keywords: Premenstrual Syndrome; Modifying Diet; Exercise; Stress Reduction; Adolescent Girls; Structured Teaching Programme.

Need of the Study

Worldwide more than 1.2 billion are adolescents and about 21% of Indian population are adolescents (243 million). Young and growing children have poor knowledge and lack of awareness about physical and psychological changes that occurs during adolescence and the ill health affecting them. Premenstrual Syndrome is described as a collection of predictable physical, cognitive, affective, and behavioural symptoms that occur cyclically during the luteal phase of the menstrual cycle and resolve quickly within a few days of the onset of menstruation.

The typical symptoms of premenstrual syndrome normally involve the symptoms related to mood changes and physical conditions – like headache, fatigue, bloating, sleep disturbances, nausea, and breast tenderness. Premenstrual syndromes affect their educational performance, emotional well-being and daily activities.

Today's life style factors are also associated with the severity of premenstrual syndrome. Therefore changing lifestyle, modifying diet, exercises, stress reduction and provision of services by health providers, can optimize Quality of life and overall health of women suffering from Pre Menstrual Syndrome. There are two methods for premenstrual

syndrome management - pharmacological and non-pharmacological. Since non-pharmacological management has no side effect and from the available literature reviewed it is evident that it has a significant effect in minimizing the severity of premenstrual syndrome.

Improper lifestyle among the adolescent girls causes a rise in the premenstrual syndrome cases; hence the study is of a particular interest of the researcher as the adolescent girls should be educated to manage the problem accordingly. This will also enlighten their hearts and minds towards prompt management.

Therefore, the researcher found it relevant to evaluate the effectiveness of a structured teaching programme on knowledge regarding selected non-pharmacological management of premenstrual syndrome among adolescent girls in selected schools in Bangalore.

Objectives are as Follows

- Assess the level of knowledge of adolescent girls regarding selected non-pharmacological management of pre-menstrual syndrome.

- Evaluate the effectiveness of a structured teaching programme on knowledge of adolescent girls regarding selected non-pharmacological management of pre-menstrual syndrome.

- Determine the association between the mean pre-test knowledge scores of adolescent girls regarding selected non-pharmacological management of pre-menstrual syndrome with their selected socio-demographic variables.

Research Approach

A quantitative pre-experimental approach was adapted for this study since the investigation was aimed to assess the effectiveness of a structured teaching programme on selected non-pharmacological management of pre-menstrual syndrome among adolescent girls in selected schools, Bangalore.

Research Design

A One group pre- test, post- test design was selected for the study.

Variables

Independent Variable

In the present study, the independent variable is the Structured Teaching Programme (STP) for the adolescent girls regarding selected Non pharmacological management of premenstrual syndrome.

Dependant Variable

In this study, the dependent variable is the knowledge level of the adolescent girls regarding the selected non-pharmacological management of premenstrual syndrome.

Attribute Variables

In the present study, the attribute variables of adolescent girls that are being described are Age, age of attaining first menstrual period, Religion, educational status, dietary pattern, type of family, family's monthly income, Weight, exercise practice and prior information regarding selected non-pharmacological management of premenstrual syndrome.

Population

The target population for the study comprised of adolescent girls studying in selected schools, Bangalore.

Settings of the Study

The study was conducted at selected schools in Bangalore.

Sample

The sample for the present study comprised of 60 adolescent girls.

Sampling Technique

A non probability purposive sampling technique was used.

Sampling Criteria

Inclusion Criteria

The Study Sample Consists of "Adolescent Girls" who are:

- 13 to 17 years of age

- Available at the time of data collection

- Interested in participating in the study

Exclusion Criteria

The Study Excludes "Adolescent Girls":

- Not attained menarche
- Not able to communicate in English
- Treatment on irregular menstrual periods
- Exposed to any educational programme regarding non-pharmacological management of premenstrual syndrome within the period of 6 months.

Description of the Tool

To meet the objectives of the study the tool was developed by the investigator. The tool used for the study comprised of a structured knowledge Questionnaire and a structured teaching programme regarding selected non-pharmacological management of premenstrual syndrome for adolescent girls.

Stuctured Knowledge Questionnaire

Structured knowledge questionnaire consists of two parts namely part A and part B

Part A

This part of the tool consists of a section on socio-demographic variables. The characteristics included were Age, Age of first menstrual period, Religion, Educational status, Dietary pattern, Type of family, Family's monthly income, Weight, Exercise practice and prior information regarding selected non-pharmacological management of premenstrual syndrome.

Part B

This part consisted of 28 multiple choice items regarding various aspects on selected non-pharmacological management of premenstrual syndrome. There are 3 sub sections for this part.

Section A: This section consists of 6 items to assess the knowledge about female reproductive system and menstruation.

Section B: This section comprises of 6 items to assess knowledge regarding premenstrual syndrome, its causes, signs and symptoms and diagnosis.

Section C: This section comprises of 16 items related to selected non-pharmacological management of premenstrual syndrome.

Structured Teaching Programme

A structured teaching programme was also planned and prepared by the investigator regarding selected non-pharmacological management of premenstrual syndrome. The major content area covered in this structured teaching programme includes selected non pharmacological management of premenstrual syndrome.

Steps of Preparing Structured Teaching Programme

Teaching plan is a guide for the teacher because it helps to cover the topics comprehensively with proper sequencing of points without missing anything. Structured teaching programme was developed by the investigator by the following steps:

1. Framing the outline of the teaching plan
2. Preparing the outline of the content
3. Deciding the method of instruction and audio visual aids

Criterion Measures

The items were phrased in a multiple choice form with three options as distractors and with one correct response. The correct response is given a score of one mark and the wrong response is given a score of zero. Thus, the maximum possible score was 28. The resulting knowledge is graded as follows:

Table 1: Levels of knowledge

Adequate	(22-28)	>75%
Moderately adequate	(15-21)	51-75%
Inadequate	(1-14)	≤50%

Content Validity and Reliability

Content validity of the tool was ensured by 2 Obstetrics and Gynaecological specialists and 9 nursing experts specialized in Obstetrics and Gynaecological nursing. The reliability of the knowledge questionnaire was established by using split half method.

Pre-test was given on day one followed by the administration of the Structured Teaching Programme for all the subjects and on 8th day post-test was given for the same subjects.

Ethical Consideration

Following steps were identified in regard to ethical consideration for the present study

- Research problem and objectives were approved by research committee.

- Due permission from authorities was sought out and obtained.

- Informed written consent was taken from the participants.

- Explanation was given regarding the study.

- Confidentiality and anonymity was ensured.

- Freedom was given to withdraw from study anytime.

Data Analysis and Interpretation

Data analysis was done by using descriptive and inferential statistics. The analysis of data is organized and presented under the following headings:

Section I: Socio demographic profile of the samples.

Section II: Pre-test knowledge score of adolescent girls regarding selected non-pharmacological management of premenstrual syndrome.

Section III: Aspect wise mean pre-test knowledge score of adolescent girls regarding selected non-

Table 2: Comparison of overall Pre- test and Post- Test Mean Knowledge score on selected non-pharmacological Management of Pre-menstrual syndrome   N=60

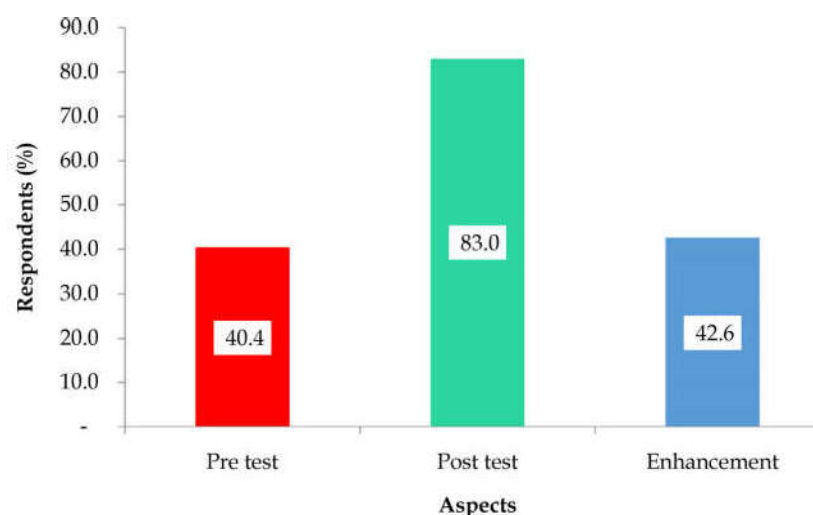| Aspects	Max. Score	Knowledge Scores				Paired 't' Test
		Mean	SD	Mean (%)	SD (%)	
Pre test	28	11.30	2.4	40.4	8.6	
Post test	28	23.23	2.2	83.0	7.7	39.76*
Enhancement	28	11.93	2.3	42.6	8.3	

*Significant at 5% level, t=0.05, 59df=1.96

Fig. 1: Over all Pre test and Post test Mean Knowledge scores on Selected non-pharmacological Management of Pre-menstrual syndrome

Table 3: Aspect Wise Mean Pre Test and Post Test Knowledge Scores on Selected Non-Pharmacological Management of Premenstrual Syndrome   N = 60

No	Knowledge Aspects	Knowledge (%)						Paired 't' Test
		Pre test		Post test		Enhancement		
		Mean	SD	Mean	SD	Mean	SD	
1.	Female reproductive system and Menstruation	53.3	17.4	87.2	14.1	33.9	19.2	13.68*
2.	Premenstrual syndrome, Causes, Signs & symptoms and Diagnosis	33.3	17.7	75.0	14.8	41.7	19.1	16.91*
3.	Non pharmacological Management	38.1	12.4	84.4	9.9	46.3	11.8	30.39*
	Combined	40.4	8.6	83.0	7.7	42.6	8.3	39.76*

*Significant at 5% level, t=0.05, 59df=1.96

pharmacological management of premenstrual syndrome.

Section IV: Post-test knowledge scores of adolescent girls regarding selected non-pharmacological management of premenstrual syndrome.

Section V: Aspect wise mean post- test knowledge scores of the adolescent girls regarding selected non-pharmacological management of premenstrual syndrome.

Section VI: Comparison of pre- test and post- test knowledge scores to evaluate the effectiveness of the structured teaching programme.

The data depicted in the Table 2 and Figure 1 shows that the mean post-test knowledge scores of the subjects were 23.23 and the mean pre-test knowledge scores were found to be 11.30. When a paired 't' test was done, the obtained 't' value 39.76 is found to be significant at 0.05 level.

The Table 3 and Figure 2 depicts the comparison of aspects wise mean, pre-test and post-test knowledge scores of adolescent girls regarding selected non-pharmacological management of premenstrual syndrome. A paired 't' test was done to compare the mean pre-test and post-test knowledge scores on each aspects. For female reproductive system and menstruation, the obtained 't' value is 13.68 and is found to be significant at 0.05 level (t=0.05, 59df=1.96). Regarding premenstrual syndrome, causes, signs and symptoms and diagnosis, the mean post-test knowledge scores were found to be significantly higher than the mean pre-test knowledge scores. The obtained 't' value is 16.91 is significant at 0.05 level (t=0.05, 59df=1.96).

Regarding the non-pharmacological management, the 't' value obtained is 30.39 which is also significant at 0.05 level (t=0.05, 59df=1.96). The observed mean percentage enhancement score was found to be 42.6% with the standard deviation percentage of 8.3. When a paired 't' test was done the obtained 't' value 39.76, (t =0.05, 59df =1.96) was found to be significant.
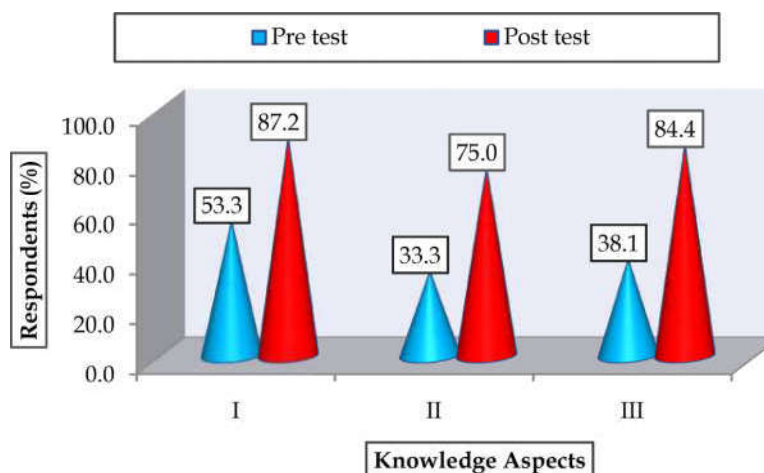

Fig. 2: Aspect wise Mean Pre test and Post test Knowledge scores on Selected non-pharmacological Management of Pre-menstrual syndrome

Table 4: Association between Demographic variables and Pre test Knowledge level on selected non-pharmacological Management of Pre-menstrual syndrome   N=60

Demographic Variables	Category	Sample	Knowledge Level				χ^2 Value	P Value
			Inadequate		Moderate			
			N	%	N	%		
Age Group	13 years	6	5	83.3	1	16.7	1.10 NS	P>0.05
	14 years	27	22	81.5	5	18.5		(7.82)
	15 years	20	14	70.0	3	60.0		
	16 years	7	5	71.4	2	28.6		
Age attained first menstrual periods (years)	9-11	8	7	87.5	1	12.5	0.61 NS	P 0.05
	12-14	52	39	75.0	13	25.0		(3.84)
Religion	Hindu	11	5	45.5	6	54.5	9.42*	P<0.05
	Christian	18	13	72.2	5	27.8		(5.99)
	Muslims	31	28	90.3	3	9.7		

Variable	Category							
Educational status	8th Std	4	3	75.0	1	25.0	0.16 NS	P>0.05
	9th std	37	29	78.4	8	21.6		(5.99)
	10th Std	19	14	73.7	5	26.3		
Dietary pattern	Vegetarian	6	2	33.3	4	66.7	7.00*	P<0.05
	Mixed	54	44	81.5	10	18.5		(3.84)
Type of family	Nuclear	39	26	66.7	13	33.3	6.34*	P<0.05
	Joint	15	14	93.3	1	6.7		(5.99)
	Extended	6	6	100.0	0	0.0		
Family Income/month	Rs.5,001-15,000	20	15	75.0	5	25.0	0.34 NS	P>0.05
	Rs.15,001-25,000	21	17	80.9	4	19.1		(5.99)
	Above Rs.25,001	19	14	73.7	5	26.3		
Weight (kg)	Less than 35	8	6	75.0	2	25.0	1.69 NS	P>0.05
	36-40	28	20	81.4	8	28.6		(7.82)
	41-45	11	10	90.9	1	9.1		
	Above 46	13	10	76.9	3	23.1		
Doing Exercise	Yes	11	11	100.0	0	0.0	4.10*	P<0.05
	No	49	35	71.4	14	28.6		(3.84)
Prior information on Non-pharmacological management	Yes	1	1	100.0	0	0.0	0.31 NS	P>0.05
	No	59	45	76.3	14	23.7		(3.84)
	Combined	60	46	76.7	14	23.3		

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

Section VII: Association between the mean pre- test knowledge scores and selected socio- demographic variables.

The Table 4 depicts Chi-square test reveals religion ($\chi 2$ =9.42), dietary pattern ($\chi 2$ = 7.00), type of family ($\chi 2$=6.34), doing exercise ($\chi 2$ =4.10) showed a significant association with their mean pre-test knowledge scores at 0.05 levels of significance whereas the other variables age, age of attaining first menstrual periods, educational status, family income per month, weight and prior information, were found to be non-significant at 0.05 levels of significance.

Conclusion

After the detailed analysis, this study leads to following conclusion:

In the present study it was observed that the mean pre- test knowledge scores of adolescent girls regarding selected non-pharmacological management of premenstrual syndrome was inadequate 76.7% (46 out of 60) and the remaining 23.3% (14 out of 60) had only moderately adequate knowledge. The mean post-test knowledge of the respondents was higher than their mean pre-test knowledge scores. Majority of the samples gained adequate knowledge 73.3% (44 out of 60), followed by moderately adequate knowledge 26.7% (16 out of 60). It's evident that structured teaching program was effective in enhancing the knowledge of adolescent girls. Nurse should act as facilitator to educate adolescent girls regarding non-pharmacological management of premenstrual syndrome in order to improve the health and well-being of the adolescent girls.

Implications

The results of the study show that majority of adolescent girls had inadequate knowledge about the selected non-pharmacological management of premenstrual syndrome in the pre- test. So the study has several implications for nursing practice, nursing education, nursing administration and nursing research.

Nursing Practice

The gynaecological registered nurses are prepared to consistently practise safely, compassionately, competently and ethically in diverse practice settings, with a variety of clients at different levels throughout the continuum of health and illness. Gynaecological nurses undertake foundation units focusing on theories, nursing assessment, processes and practices in gynaecological nursing and also enable nurses to explore the care of adolescent girls and their families in giving health education and preventive aspects like menstrual problems, dietary counselling, menstrual hygiene, sexually transmitted diseases and health screenings. The investigator as a nurse felt nurse should act as facilitator to educate adolescent girls regarding non-pharmacological management of premenstrual syndrome in order to improve the health and well-being of the adolescent girls.

Nursing Education

Nurse educator can educate students about the menstrual problems and how to prevent and manage these problems. For these activities nurses also need to update their knowledge through regular in-service education.

Nurse educator can teach through various teaching methods to acquire knowledge on prevention and management of premenstrual syndrome. Findings of the present study show that the adolescent girls had inadequate knowledge regarding selected non-pharmacological management of premenstrual syndrome.

Nursing Administration

Nurse administrators are in a key position to organize educational programme in the community to provide knowledge regarding premenstrual syndrome and its management. The nursing administrator should organize in service education programs, seminars, and workshops for the adolescent girls in various schools regarding premenstrual syndrome and its management. Nurse administrators can improve the knowledge through educational programmes by issuing information booklets and pamphlets regarding management of premenstrual syndrome though changing the lifestyle. The findings of the study showed that majority of the respondents had lack of knowledge about selected non-pharmacological management of premenstrual syndrome. The findings of the study suggest that there is an increased need for conducting awareness programmes for adolescent girls.

Nursing Research

The findings of the study show that majority of adolescent girls had lack of knowledge regarding selected non-pharmacological management of premenstrual syndrome. Based on these findings researchers can conduct further studies on other non-pharmacological management of premenstrual syndrome on a large sample.

The study will motivate the novice researchers to conduct the studies with different variables on a large scale. Nursing research can help to identify the existing knowledge gap. This will help to improve the quality and standard of care based on evidence based practice. This helps to give meaningful, need based information and create awareness towards premenstrual syndrome and its various non-pharmacological management to prevent it.

Recommendations

- Similar study can be replicated on large number of samples to generalize the findings.

- A comparative study can be done to find out the difference in knowledge between urban and rural adolescent girls regarding premenstrual syndrome and its non-pharmacological management.

- Similar study can be conducted of other different non-pharmacological management of premenstrual syndrome

- A study can be done to assess the knowledge, attitude and practices of adolescent girls regarding management of premenstrual syndrome.

References

Books

1. Dutta DC. Textbook of Gynaecology. 4th edition. Calcutta: New central agency publication; 2005.

2. Polit FD, Beck CT. Nursing Research 8th edition. Philadelphia: J.B. Lippincott; 2003.

3. George B L. Nursing Theories. The base for professional Practice. 3rd ed.Library of Congress. 1989.p.259-278.

Journals

4. Chandraratne NK, Gunawardena NS. Premenstrual syndrome: the experience from a sample of Sri Lankan adolescents. Journal of paediatric and adolescent gynaecology. 2011;24(5):304-310.

5. Derman O, kanbur NO, Tokur TE, Kutluk T. premenstrual syndrome and associated symptoms in adolescent girls. European Journal of obstetrics and gynaecological reproductive biology. 2004; 116(2).p.201-206.

6. Kumbhar S, Tondare D, Tejaswini G et al. Study of Prevalence of Pre-Menstrual Syndrome among the 13 to 22 Years of Young Girls Residing in Kadapa Town of Andhra Pradesh. International Journal of Contemporary Medicine. 2014;2(2).p.143-145.

7. Mandal J, Sarkar AP, Ghorai S. A study on premenstrual syndrome among adolescent girl students in an urban area of west Bengal. International journal reproduction, Contraception, Obstetrics and Gynaecology. 2015;4(4):1012-1015.

8. Cleckner CS, Doughty AS, Grossman JA. Premenstrual symptoms. Prevalence and severity in an adolescent sample. Journal of Adolescence Health. 1998 May;22(5).p.403-408.

9. Bianco V, Cestari AM, Casati S, et al. Premenstrual syndrome and beyond: lifestyle, nutrition, and personal facts. Minerva Ginecologica. 2014;66(4):365-375.

10. Amany ES, EmanSM, Eman MM. Life Style Factors Associated with Premenstrual Syndrome among El-Minia University Students, Egypt. Journal of Public Health. 2013;13(3).p.1234-1237.

11. Navdeep K, Ramesh T. A descriptive study to assess the premenstrual syndrome among nursing students, NINE, PGIMER, Chandigarh. Nursing and Midwifery Research Journal. 2009;5(1).p.17-19.

12. Shahhosseini Z, Abedian K, Danesh M. Effect of starch dietary regimen on treatment of premenstrual syndrome. Journal of Obstetrics and Gynaecology. Feb 2012;24(1):156–159.

13. Mahmoodi Z, Shahpoorian F, Bastani F, Parsay S, Hoseini F. Comparison of the effect of carbohydrate rich supplement and diet supplement and diet on premenstrual syndrome. Behbood 2010;14(1): 10-19.

14. Yekta S, Sara S, Davood k et al. The association between premenstrual syndrome and physical activity and aerobic power in female high school students. Crescent Journal of Medical and biological Sciences. 2015;2(2):53-58.

15. Leily G, Maryam M. Assessment of the effects of massage therapy on premenstrual syndrome. Zahedan Journal of Research in Medical Science. 2013; 4(3):345 -350.

16. Sharma B, Mishra R, Singh K, Sharma R, Archana. Comparative study of effect of anuloma-viloma (pranayama) and yogic asanas in premenstrual syndrome. Indian Journal of physiology and pharmacology. 2013;57(4):384-389.

17. Chau J, Chang A. effects of an educational programme on adolescents with premenstrual syndrome. Health education research. 1999;14(6): 817-830. Unpublished thesis:

18. Rani J.J. Effectiveness of structured teaching module on knowledge and practice about premenstrual syndrome its care among adolescent girls in selected schools of Horamavu village in Bangalore. Rajiv Gandhi University of Health Sciences: 2008.p.1- 2.