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Impact of Lifestyle Modification Technique on the Knowledge Level on Premenstrual Syndrome (PMS), Manifestations Associated with PMS among College Students in Selected Nursing Colleges in Thiruvananthapuram, Kerala

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ABSTRACT

Menstrual cycle causes many changes in the female reproductive system and other systems. Abnormalities in the process of menstruation are known as menstrual disorders. Common menstrual disorders are the disorders related to menstrual cycle i.e. abnormal menstrual duration or length, hypo or hypermenorrhoea, poly or oligomenorrhoea, dysmennorrhoea, amenorrhoea, menorrhagia and Premenstrual Syndrome (PMS).World Health Organization in 2009 estimated that 90% of women have experienced at least one symptom of PMS. PMS may have an impact on student nurse's health, quality of life, self-confidence, self-esteem and relationship with others and achievement of goals. Aim of the present study is to assess the effect of lifestyle modification technique on the manifestations associated with PMS among college students in selected nursing colleges at Tiruvananthapuram District. The conceptual framework of the study was based on the Ernestine Widenbach's helping art of clinical nursing theory.Research approach used was quantitative and the research design was quasi experimental –time series design. Dependent variables were knowledge on PMS and manifestations associated with PMS and the independent variables were lifestyle modification techniques. Study was conducted in two selected Nursing colleges. Samples were 326 Nursing students with mild to moderate PMS. Data were collected using self administered questionnaire on Demographic variables and Daily Record of Symptoms scale.Analysis of the data showed that after the intervention the mean knowledge score increased from 49.8±8.4to 78.8±8.5. Regarding the manifestations associated with PMS in posttest I and II no symptoms were seen among 70.6% and 73.6% subjects respectively and none of the subjects had moderate symptoms and severe symptoms in intervention group. But in control group, 80.45 subjects had mild, 18.4% had moderate and 0.6% had severe symptoms. It can be concluded that lifestyle modification technique is one of the easy, cost effective and simple non-pharmacological interventions to solve the problems of subjects with PMS.

Key words: Premenstrual syndrome (PMS), Lifestyle modification, Aerobic exercise and Progressive Muscle Relaxation.

INTRODUCTION

God has created woman in such a manner that she plays a major role in the perpetuation of human beings [1].

Premenstrual disorders ranges from mild PMS to Premenstrual Dysphoric Disorder (PMDD). In 1931, first Frank described this clinical phenomenon as "Premenstrual Tension". According to American College of Obstetrics and Gynecology (ACOG) guidelines, PMS includes one or more affective or somatic symptoms that negatively affect a woman's function and lifestyle that occur during the five days prior to menstruation and are present in each of three previous menstrual cycles. The listed affective symptoms are depression, angry outbursts, irritability, anxiety, confusion, social withdrawal and the somatic symptoms include breast tenderness, abdominal bloating, head ache and swelling of extremities. These symptoms are relieved within four days of the onset of menstruation without recurrence until at least the cycle day thirteen [2].

It was reported that about 80-95% of women in reproductive age complain about PMS symptoms to varying degrees and 5-10% of women experience serious PMS that requires treatment [3].

A meta-analysis systematically reviewed the prevalence of PMS. About 17 studies met the inclusion criteria and findings showed that the pooled prevalence of PMS was 47.8%. The lowest and highest prevalence was reported in France 12% and in Iran 98% respectively [4].

Study conducted in India identified that all the 100 participants suffered with PMS and among them 42% were suffering regularly and 58% occasionally. Among them 68% suffered with back pain, 64% with leg cramps, fatigue, breast tenderness , anger and anxiety and generalized body ache were seen among 58% and 62%. Of all the sufferers only 34% received the treatment for PMS.

PMS causes problems in education, family roles and relationship. It may even lead to suicidal tendency, increased number of sick days, impaired productivity and work absenteeism. Premenstrual impairement may be more severe at home, influencing the marital relationship and home making as compared to social and out of home occupational impairment [5].

A cross sectional study conducted among 150 unmarried medical students of S.V Medical College, Tirupathi, Andhrapradesh showed that the prevalence of PMS was 82%. Severe symptoms present were abdominal pain (76%), body ache (67.7%), back ache (48.4%), irritation (22.6%), breast discomfort (66.72%), head ache (15.3%), abdominal bloating (0.5%) and acne (44.2%). Among those who had the symptoms, only 56 girls took medications to get relief from the symptoms [6].

The prevalence and knowledge of PMS among undergraduates in Karnataka revealed that 65(6.4%) subjects had borderline to mild PMS, 23(2.3%) had mild to moderate PMS and 9(0.9%) had severe PMS. About the knowledge level, 18(1.8%) had good knowledge, 453 (44.9%) had poor knowledge and majority of the subjects i.e. 539 (53.4%) had average knowledge regarding PMS [7].

Aerobic exercise at different intensities on the PMS among 86 women with PMS for 6 weeks in Pondicherry reported that the menstrual symptoms scores had decreased significantly in the next menstrual cycle [8].

A quasi experimental study conducted among 70 nursing students in Iran to determine the effect of aerobic exercise and walking exercise on physical and psychological symptoms and pain associated with PMS showed that there was a significant reduction on the level of pain at the end of first and third month of intervention [9].

Literature reviewed showed that lifestyle modification is an important non-pharmacological strategy to solve the problems associated with PMS. The lifestyle modifications can be done by creating awareness among the subjects on PMS, demonstrating and making the subjects to do regular aerobic exercise and relaxation technique. Hence the researcher was interested in evaluating the effect of lifestyle modification techniques on the PMS symptoms among the nursing students.

Statement of the problem

A study to assess the impact of lifestyle modification technique on the knowledge level on premenstrual Syndrome (PMS), manifestations associated with PMS among college students in selected Nursing colleges in Thiruvananthapuram, Kerala.

Objectives of the study

1. To assess the pretest and posttest knowledge level on PMS among college students in the control and intervention group.
2. To determine the pretest and posttest manifestations associated with PMS among college students in the control and intervention group.
3. To find out the association between pretest knowledge level on PMS, manifestations associated with PMS and the selected demographic variables.
4. To find out the association between pretest knowledge level on PMS, manifestations associated with PMS and the selected clinical variables.
5. To find out the association between pretest knowledge level on PMS, manifestations associated with PMS and the selected menstrual variables.

Hypotheses

H_1: There is a significant difference in the pretest and posttest knowledge level on PMS among college students in the control and intervention group.

H_2: There is a significant difference in the pretest and posttest manifestations associated with PMS among college students in the control and intervention group.

H_3: There is a significant association between pretest knowledge level on PMS, manifestations associated with PMS and selected demographic variables.

H_4: There is a significant association between pretest knowledge level on PMS, manifestations associated with PMS and selected clinical variables.

H_5: There is a significant association between pretest knowledge level on PMS, manifestations associated with PMS and the selected menstrual variables.

Materials and Methods

Research approach: Quantitative research approach. **Research design:** Quasi experimental. **Dependent variables:** Knowledge level on PMS and manifestations associated with PMS. **Independent variables:** Lifestyle modification techniques. It includes Video Assisted Teaching program on PMS, Progressive Muscle Relaxation technique and aerobic exercise. **Settings of the study:** Two selected Nursing colleges in Thiruvananthapuram District. **Subjects:** Students studying BSc.(Nsg) course. **Sample size:** 326.

Conceptual framework

Researcher adopted the Ernestine Widenbach's helping art of clinical nursing theory (1964). This prescriptive theory directs the action towards an explicit goal and consists of three factors such as central purpose, prescription and realities.

Tools and techniques of data collection

Data were collected from the subjects through self-administered questionnaire and scales. The tool used to gather data had four sections. They were Data on Demographic variables, clinical variables, menstrual history, Questionnaire to assess the knowledge on PMS and the Daily Record of Severity of Symptoms.

Data collection procedure

After getting the written permission and informed written consent all the nursing students of selected nursing colleges were screened for the presence of premenstrual symptoms using the ACOG diagnostic criteria for PMS retrospectively. Based on the inclusion criteria, 326 subjects with premenstrual symptoms (163 for control and 163 for intervention group) were selected. Pretest was conducted for the subjects in the control and intervention group. Manifestations associated with PMS were assessed during the first and second menstrual period. After two months, the researcher conducted a video assisted teaching program on PMS for 45 minutes and demonstrated the progressive muscle relaxation technique and aerobic exercise only to the subjects of intervention group. From the next day of demonstration, the researcher supervised the practice of progressive muscle relaxation technique for 30 minutes in the morning and aerobic exercise for 30 minutes in the evening for two months. No intervention was provided to the subjects in the control group. Posttest was conducted after the intervention for the subjects in both the groups. Manifestations associated with PMS were assessed during the first and second menstrual period after the intervention. Then the data were prepared for analysis.

RESULTS

Section A: Demographic variables

It was noted that in the intervention group, 31.3% of subjects were in the age of 19 years, 62.6% were Hindus, 82.8% were living in the rural area, 85.3% belonged to joint family, 52.1% of their fathers and 41.1% of their mothers have studied up to high school, 45.4% of their fathers were coolie workers and 68.7% of their mothers were home makers and the monthly income was below Rs.10000/ in 66.9% subjects. In the control group also, 35.6% were in the age of 19 years, 58.3% were Hindus, 77.3% were living in the rural area, 81.6% belonged to the joint family, 58.3% of their fathers have completed high school education and 42.3% of their mothers had higher secondary education, 39.3% of their fathers were coolie workers and 62.6% of their mothers were home makers and 62% of them had the monthly income below Rs.10000/.

Section B: Clinical variables

In the intervention group, 58.9% of subjects had normal Body Mass Index, 99.4% were non-vegetarians, 72.4% had the habit of taking fast food occasionally, 90.2% had the habit of drinking coffee/tea 1-2 times per day, 44.2% didn't have the habit of drinking milk daily, 57.1% didn't have the habit of fruit intake daily, 59% took <100 grams of green leafy vegetables and 62% didn't do regular exercise daily.In the control group also 54% of subjects had normal Body Mass Index, 96.3% were non-vegetarians, 69.9% had the habit of taking fast food occasionally, 43.6% had the habit of taking fried food occasionally, 85.3% had the habit of drinking coffee/tea 1-2 times per day, 42.3% didn't have the habit of drinking milk daily, 53.4% didn't have the habit of fruit intake daily, 36.2% took <100 grams of green leafy vegetables and 55.2% didn't do regular exercise daily.

Section C: Menstrual variables

In the intervention group, the age at menarche was below 12years among 81% subjects, the duration of menstrual bleeding was < 6 days among 79.8% subjects, the onset of discomfort was 3 days before menstruation among 71.8% subjects , disappearance of discomfort was within 2 days of menstruation among 46% subjects, family history of PMS was absent among 60.1% subjects, mother was affected with PMS among 34.4% subjects, none of them took treatment for PMS and previous knowledge on PMS was present in 59.5% subjects.In the control group 73.6% attained menarche between 12-15 years, 77.3% had the menstrual duration for < 6 days, 63.2% had the onset of discomfort 3 days prior to menstruation, 47.2% had the disappearance of discomfort within 2 days of menstruation, 91.4% had no family history of PMS, 6.7% subject's mothers were affected with PMS,

none of them took treatment for PMS, 68.7% had the previous knowledge on PMS and for 33.7% subjects, their mothers were the source of knowledge.

Section D: Effect of lifestyle modification technique on the Knowledge level on PMS

Table 1: Frequency and percentage distribution of subjects based on pretest and posttest Knowledge level on PMS.

N=326

Knowledge level on PMS	Intervention Group n=163				Control Group n=163			
	Adequate		Inadequate		Adequate		Inadequate	
	N	%	N	%	N	%	N	%
Pretest	83	50.9	80	49.1	79	48.5	84	51.5
Posttest	163	100	0	0.0	79	48.5	84	51.5

Table 4.5: Mean pretest and posttest scores on knowledge level on PMS in intervention and control group

N=326

Knowledge level on PMS (total score)	Intervention Group n=163		Control Group n=163		t $p \leq 0.05$	p
	Mean	Sd	Mean	Sd		
Pretest	49.8	8.4	50.2	7.9	0.429	0.668
Posttest	78.8	8.5	50.2	7.6	32.115*	<0.001

Section E: Effect of lifestyle modification on manifestations associated with PMS among the subjects

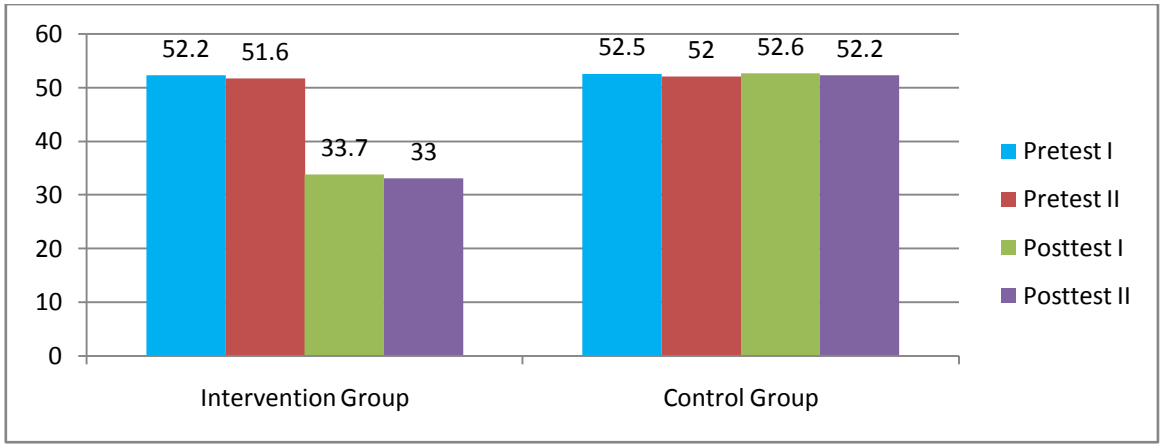

Figure 4.5: Mean pretest and posttest severity of symptoms (total score) in the intervention and control group.

Table 4.22: Mean pretest and posttest physical symptoms scores in the intervention and control group.

N = 326

Group	Pretest I		Pretest II		Posttest I		Posttest II	
	Mean	Sd	Mean	Sd	Mean	Sd	Mean	Sd
Intervention Group	24.1	4.7	24.0	5.3	14.4	3.2	14.7	4.0
Control Group	24.3	4.8	24.4	5.5	24.4	4.4	24.3	5.3

Table 4.24: Mean pre test and posttest emotional symptoms scores in the intervention and control group.

N=326

Group	Pretest I		Pretest II		Posttest I		Posttest II	
	Mean	Sd	Mean	Sd	Mean	Sd	Mean	Sd
Intervention Group	12.6	4.5	12.1	4.0	7.9	2.1	7.7	1.8
Control Group	12.4	4.0	12.2	4.2	12.5	3.9	12.2	4.2

Table 4.26: Mean pretest and posttest behavioural symptoms scores in the intervention and control group.

N = 326

Group	Pretest I		Pretest II		Posttest I		Posttest II	
	Mean	Sd	Mean	Sd	Mean	Sd	Mean	Sd
Intervention Group	15.4	5.3	15.3	5.7	11.1	2.2	10.7	1.9
Control Group	15.8	5.6	15.5	5.7	15.8	5.6	15.5	5.6

DISCUSSION

The mean posttest level of knowledge on PMS (total score) was 78.8±8.5 in the intervention group and it was 50.2±7.9 in the control group. There was statistically significant difference between the mean scores of posttest (total score) in the intervention and control groups.

Similar study carried out to assess the effect of an educational program in increasing the knowledge among 106 nursing students in a private nursing college in Jeddah, Saudi Arabia showed that there was a significant difference between student's knowledge before and after the programme. Before the programme the total score mean rank was 34.72 and after the programme it was 86.28.

In pretest I and II mild symptoms (total score) were present among 77.3% and 80.4% subjects in the intervention group and in the control group it was 77.9% and 82.2% respectively. All the remaining subjects had moderate symptoms. In posttest I and II no symptoms were seen among 70.6% and 73.6% subjects in intervention group. And none of the subjects had moderate symptoms and severe symptoms. But in control group, 80.45 subjects had mild, 18.4% had moderate and 0.6% had severe symptoms.

Findings are congruent with a study conducted by R.Vishnupriya and P.Rajarajewaram (2011) conducted a study to analyze the effect of aerobic exercise in Pondicherry. There was a significant reduction in the level of pain (Muscle stiffness, headache, cramps, backache, fatigue and general aches), Insomnia, forgetfulness, confusion, lowered judgement, difficulty in concentrating and accidents after the intervention.

A randomized control trial conducted to evaluate the effect of selected relaxation exercises among 230 girls in selected nursing colleges in Karnataka also revealed that they were effective to reduce the anxiety and PMS symptoms among the girls.

CONCLUSION

From the findings of the present study it can be concluded that lifestyle modification technique is one of the easy, cost effective and simple non-pharmacological interventions to solve the problems of subjects with PMS.

NURSING IMPLICATIONS

Present study findings help the nurses to understand the importance of assessing the college students for the presence of premenstrual symptoms and their knowledge level on PMS Findings help the nurses to understand that lifestyle modification Nursing students may be motivated to give health teaching to the patients with PMS on lifestyle modifications for PMS and they can demonstrate relaxation and aerobic exercise to them. Findings motivate the nurse researchers to find out some non- pharmacological measures to solve the problem of premenstrual symptoms.

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