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RESEARCH ARTICLE

EFFECT OF NUTRITION AND HEALTH EDUCATION ON THE KNOWLEDGE AND SYMPTOMS OF PREMENSTRUAL SYNDROME AMONG SCHOOL GOING ADOLESCENT GIRLS (14-16 YEARS)

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ABSTRACT

Background: Adolescent is a period of rapid growth. Even a malnourished child catches up its height in the secondary growth period, adolescence. In developing countries adolescent girls are not given adequate attention. Adolescent girls often neglect to speak about their reproductive health problems that are common in their menstrual cycle. Nutrition and health education is an important aspect that bridges the gap between health information and health practices and considered as a key factor in health promotion activities. The present study aimed at imparting a nutrition and health education programme in reducing the severity of premenstrual symptoms among the adolescent girls (14-16 years).

Methods: An educational programme was conducted in two areas of Coimbatore city. Sample size was 100; sampling design used was convenience sampling. Nutritional assessment and PMS symptom as well as knowledge of PMS symptom were done before conduct of nutrition and health education. Nutrition and health education was carried out for a period of four months and post test evaluation of nutritional status, PMS symptom and PMS knowledge score were done.

Results and Discussion: From the data gathered, it was noted that nutrition and health education improved the knowledge of the participants after intervention. Though weight does not show statistical significance, majority of the subjects gained less weight in the luteal phase. Also individual symptoms like back pain and head ache has reduced in their severity.

Conclusion: Adolescent girls often neglect the aspect of taking about their menstrual problems to any including their mothers. Hence a well planned nutrition and health education given to the adolescent population on PMS was able to increase the knowledge on PMS and to some extent reduced the PMS symptom score severity.

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INTRODUCTION

PMS is a cyclic reoccurrence of distressing somatic and affective symptoms in the luteal phase of menstrual cycle in the few days (1-3 days) of next follicular phase (Ziba, et al, 2008). Premenstrual symptoms (PMS), even though mild to moderate in intensity might have an adverse effect on the daily activity and work productivity. All women, regardless of race, age, or socioeconomic status, have experienced discomfort during their menstrual periods. Findings also reported that at least 25 per cent of all adolescent girls aged 14-15 years experienced Premenstrual Syndromes (PMS) (Delara, 2011). Adolescent girls in the stage of growth find it difficult to identify the problem of PMS and management become difficult. Hence the present study was framed to identify the prevalence of PMS and to determine the impact of health and

nutrition education on PMS. Neimi (2015) recorded that the prevalence of PMS in the age group of 18-24 years was 85.6 per cent based on ACOG criteria. Adolescence constitute one fifth of the growing population in India. The adolescent girls with the double burden of physical growth and ignorance are under the major risk for the premenstrual problems which is often neglected to be addressed even in highly educated families. Only when the condition becomes worse enough to impair the daily activities, one wants to meet a doctor. Hence the present study was aimed to find the prevalence of PMS among adolescent population and to determine the effect of nutrition and health education on the PMS symptom score.

MATERIALS AND METHODS

The target group adolescent girls (14-16Years) were selected from a residential school of Coimbatore District. The area was selected on the basis of easy accessibility, availability of adequate number of subjects having the problem of

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premenstrual syndrome and also the co-operation rendered by the participants. The participants were selected based on the ACOG diagnostic criteria (2010). A total of 100 adolescent girls (14-18 years) were selected. After clear explanation on the conduction of the study the written consent was obtained from all the participants. The participants were given orientation regarding the protocol of the study and also explained modalities and purpose of the study. They were also informed about the nutrition education and the follow-up to be carried out for four months for the assessment of nutritional and health status. Among the participants, those who were having the problem of PMS were selected for the further interventions. Nutrition and health education module was prepared on various aspects like menstrual cycle, menstrual problems, meaning of premenstrual syndrome, causes, prevalence, role of nutrition on PMS, complications, premenstrual dysphoric disorder and management of PMS. Each aspect was taken in one session. Totally 11 -20 min. sessions (once in a fortnight) were taken covering all ten aspects and final session was a discussion session where the participants were given a summary of all the aspects and their doubts and queries were clarified. The nutrition and health education programme included lecture, power point presentation, exhibition and distribution of pamphlets. A well structured PMS knowledge questionnaire was prepared with 20 questions covering all aspects of PMS. The questionnaire was administered to the participants before and after nutrition and health education. Apart from knowledge, anthropometric measurements, dietary survey and PMS symptom scores were recorded. Dietary survey was carried out by 24 hour recall method. PMS symptoms were noted using ACOG diagnostic criteria before and after nutrition and health education.

RESULTS AND DISCUSSION

It was noted that 38 percent of the participants were 14 years of age, 43 percent were in 15 years of age and 24 per cent were in 16 years of age. The mean age of the participants was 15.04 ± 2.1 . Forty five per cent of the participants were in class ten, 35 per cent in class nine and 20 per cent were in class eleven. Fifty six per cent of the participants reported that the age at menarche was 10-13 years. Thirty four participants reported the age at menarche to be 14 and ten percent reported the age at menarche as 15 years. The mean age at menarche was 13.62 ± 1.43 years. Eight nine participants had regular menstrual cycle and only 11 per cent reported irregular periods. The menstrual cycle days were 25 for 13 per cent of the participants, 26-28 days among 46 per cent of the participants and 30-32 days among 30 per cent of the participants. Mean menstrual cycle days was 27 days. Duration of menstrual days was three among 18 per cent, five among 57 per cent, seven among 18 per cent and more than seven days among seven per cent of the population.

Table 1. Demographic variables of the participants

	Mean and SD
Age	15.04 ± 2.1
Age at menarche	13.62 ± 1.43
BMI	23.65 ± 4.8

The mean BMI value was 23.65 ± 4.8 . The mean age at menarche was 13.32 ± 0.83 years. This was in accordance with the study conducted by Kumara and Sachdeva (2016) among the University students, in which the mean age at menarche was 13.3 ± 1.3 years.

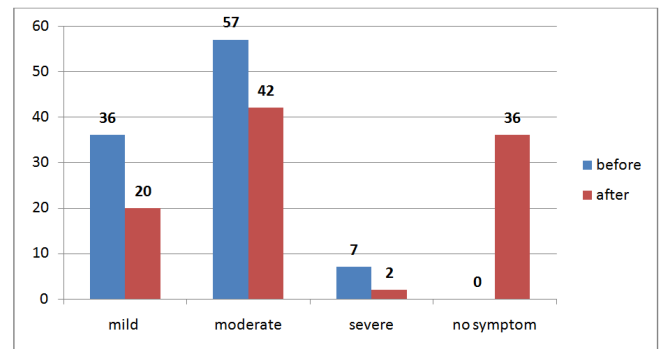


Fig. 1. Distribution of sample based on the severity of PMS symptoms

From Fig-1, it was noted that only 36 per cent of the participants had mild symptoms, 57 per cent had moderate symptoms and seven per cent of participants had severe PMS symptoms before intervention and 20 per cent of the participants had mild PMS symptoms, 42 per cent had moderate, only two had severe PMS symptoms. Thirty six percent of the participants did not experience PMS symptom at all.

Table 2. Pre and post scores of PMS symptom and knowledge

PMS details	Before (mean, SD)	After (mean, SD)	Mean difference	't' value and significance
PMS knowledge	6.82 ± 0.53	14.88 ± 0.53	8.06	5.02**
PMS symptom score	2.08 ± 0.53	1.06 ± 0.23	1.02	12.63**
Number of PMS symptoms	7.54 ± 1.7	3.0 ± 0.71	4.54	3.79**

** Significant at 5% level

Table 3. Individual affective and somatic symptoms (in frequency)

Type of symptom	Before (N=100)	After score (N=100)	Significance*
Affective			
Depression	52	34	0.030*
Anger	58	36	0.053*
Irritability	68	56	0.00**
Anxiety	44	30	0.030*
Confusion	44	46	0.042*
Withdrawal	44	34	0.001**
Somatic			
Breast tenderness	40	22	0.01**
Abdominal bloating	24	17	0.05*
Head ache	31	24	0.05*
Swelling of extremities	22	17	0.043*

McNemar's test, *-significant at 5%, ** significant at 1%

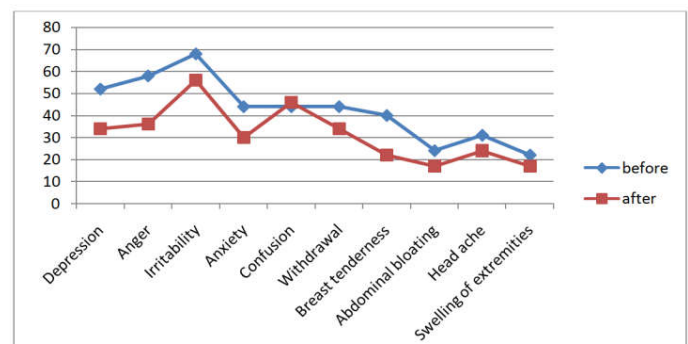


Fig.2. Distribution of participants based on the occurrence of symptoms before and after intervention

Table-2 presents the mean score of PMS knowledge, mean score of PMS symptoms and number of PMS symptoms. It was noted that there was significant a difference in the pre-test and post-test scores of the participants in PMS knowledge ($p < 0.05$) and PMS symptom score ($p < 0.05$). It was clear from the table that the number of PMS symptoms were also reduced from 7.54 to 3.0 ($p < 0.05$). Table-3 and Figure 2 presents the occurrence of individual PMS symptoms in frequency before and after nutrition and health education. It was noted that the symptoms frequency has reduced considerably after nutrition and health education. The affective symptoms like depression ($p < 0.03$), anger ($p < 0.053$), irritability ($p < 0.00$), anxiety ($p < 0.0.0$), confusion ($p < 0.042$) and with drawl ($p < 0.001$) were significantly reduced in post-test period. The somatic symptoms like breast tenderness ($p < 0.01$), abdominal bloating ($p < 0.05$), head ache ($p < 0.050$), swelling of extremities ($p < 0.043$) showed statistically significant reduction in the presence of symptoms among the participants after nutrition and health education. At the end of nutrition and health education 32 participants reported that there was no PMS symptom in post-test.

DISCUSSION

PMS was a condition often confused with other complications and careful maintenance of record and awareness can help the girls to differentiate the PMS symptoms from others. According to Chou and Chang (1999) in their study among Hong Kong students, generally the students lacked basic knowledge on PMS and the educational programme has been of value in helping them to obtain a better understanding of health –related issues and PMS self care measures. Nutrition and health education has shown improvement in the reduction of symptoms of PMS among the participants. In 32 percent of the participants, the symptoms were absent after the nutrition and health education. Also it was noted that the individual symptoms were also reduced that showed statistically significant difference in the pre and post test period. The present study was comparable with the study done by Ramya *et al.* (2014) in which health education has shown significant reduction in the severity of symptoms of PMS and disappearance of PMS symptoms 30.2 per cent of rural and 34.4 per cent of the participants after health education. Similar results were reported in the study Chau and Chang (1999).

Hence it was suggested that the well structured nutrition and health education programme can help the adolescent as well as adult in minimising the severity of PMS as well as menstrual problems and help them in managing the PMS symptoms effectively. It may included as a part of their curriculum in the physical education classes or can be a part in the medical check up and camps conducted in school or in school health programmes. When there is a clear knowledge on PMS and menstrual problems are there, the adolescent girls can take some steps in the management of the problems without affecting their regular activities. This may reduce the school absenteeism by the adolescent girls due to menstrual problems.

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