Assessment On Outcome Of Papaya Fruit On Premenstrual Tension Syndrome Among Adolescent Girls In Selected Setting

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Abstract

Background: Premenstrual syndrome is medically defined as distressing physical and psychological symptoms not caused by organic disease which appear before menstruation regress during the menstruation, perhaps a hormone imbalance, due to lack of progesterone, a poor diet and lack of exercise. Premenstrual tension syndrome is the emotional tension, insomnia, depression, irritability associated with the premenstrual week. Somatic sensations associated with the syndrome are bloating, cramping, tenderness of the breasts, swelling of hands and feet, temporary weight gain. Premenstrual disorder is a condition in which the symptoms of premenstrual syndrome are more severe and cause significant functional impairment .It has been estimated that anywhere from 3 to 9% of women suffer from this disorder (Woods, 2005).
In premenstrual syndrome, symptoms can be controlled to some extent by the dietary manipulations. Studies suggest that a diet high in vitamin C, calcium and magnesium was helpful in order to reduce the level of premenstrual tension syndrome. It is advisable to take diet consisting of fruits which is rich in calcium, antioxidant, vitamin A and minerals from one week prior to menstruation. Papaya fruit is an excellent source of dietary fibre, folate, vitamin A, C and E.It also contains small amount of calcium, iron, riboflavin, thiamine and niacin. It is also very rich in antioxidant nutrients flavonoids and carotenes, very high in vitamin A and C & and also low in calorie.

Materials and Methods: Premenstrual syndrome is linked to other disorders associated with inadequate calcium, iron, vitamins and minerals. Hence the researcher was interested to reduce the level of premenstrual tension syndrome by providing papaya fruit for adolescent girls. The aim of the study was to determine the outcome of papaya fruit on premenstrual tension syndrome among adolescent girls in selected setting. A Quasi experimental design was adopted. The study was conducted at selected government school, Arakonam.60 adolescent girls were selected.30 in experimental and 30 in control group. Adolescent girls who fulfilled the inclusion criteria were selected by using non probability purposive sampling technique.
Results:The demographic variables were age in years, age at menarche, weight in kilogram, body mass index and type of diet. The pretest and posttest level of PMTS was determined by modified premenstrual tension syndrome scale.75 mg of papaya fruit was provided by the researcher from the 5th day of last menstrual period in mid morning for 21 days. Data analysis was done by using descriptive and inferential statistics. The pretest and posttest level of premenstrual tension syndrome were compared and found that in pretest 6(20%)had mild level of premenstrual tension syndrome,24(80%)had moderate level of premenstrual tension syndrome ,none of them comes under severe level of premenstrual tension syndrome and in post test 27(90%) had mild level of premenstrual tension syndrome,3(10%) had moderate level of premenstrual tension syndrome, none of them comes under the severe level of premenstrual tension syndrome.

Conclusion:Thus the study concludes that papaya fruit was effective to reduce the level of premenstrual tension syndrome. The conceptual framework was based on modified Weidenbach's helping art nursing theory. The research hypothesis formulated for the study was "there is a significant relationship between the premenstrual tension syndrome and papaya fruit" .The outcome was proved in comparing the pretest and post test level of premenstrual tension syndrome where the result showed $p<0.05$ level of significance. Thus the research hypothesis was accepted. It was also found that papaya fruit have a role in reducing PMTS. This is statistically proved that research hypothesis was accepted as papaya fruit was effective to alleviate PMTS

INTRODUCTION:

"Adolescence" refers to the period from puberty to maturity which physical, emotional and psychological changes occur in a boy or girl (Alkha Dhal, 1995).The prime factor which contributes to happiness in life is "Good Health" (Elizabeth Hurlock) **.**Menstruation is a normal physiological impact in each girl's life. Menstruation is monthly uterine bleeding for 3-5 days after every 28 days from puberty to menopause .A change in mood, behavioral appearance of some abnormal vague symptoms is often noticed in second half of the cycle of a women or require medical help, called premenstrual syndrome.Atleast one of the following somatic affected symptoms appears 5 days before menses or prior menstrual cycle. The affected symptoms are depression, anger outburst, irritability, anxiety, confusion and social withdrawals. While in somatic symptoms, there are breast tenderness, abdominal bloating and headache. These symptoms relieved within 4 days of the onset of menses (Varney, 2005).

Pre-menstrual syndromes (PMS) are a group of menstrual related, chronic, cyclical disorders manifested by emotional and physical symptoms in the second part of the menstrual cycle, which subside after the beginning of the menstrual period.Many doctors do not believe there is such condition as premenstrual tension syndrome and, consequently, fail to recognize and treat it. Of 482 women who called the National Association for premenstrual syndrome (NAPS) helpline last year, 42 percentages said that their GPs were unsympathetic or did not seem to know much about premenstrual tension syndrome.

Over the last 60 years, research has been directed towards establishing the causes and generating effective treatments for premenstrual tension syndrome. The lack of agreement about premenstrual problems as a syndrome, and its diagnosis has contributed greatly to GP's disbelief. Its recognition is a twentieth century event, reflecting changes in our social structure and lifestyle. In the past the time between puberty and the menopause was filled with many pregnancies when premenstrual syndrome disappears. Each was followed by the cessation of ovulation caused by prolonged breastfeeding. Nowadays with fewer pregnancies the effects of the menstrual cycle are more apparent**.**

MATERIALS AND METHODS:

An evaluative approach was used to evaluate the outcome of papaya fruit on PMTS. Selection of the design based on purpose of the study .The purpose of the study was used to evaluate the outcome of papaya fruit on PMTS, so quasi experimental design was selected by using manipulation and control . The study was conducted in Government Girl's Higher Secondary School, Arakkonam, Vellore district for experimental group and Government Higher Secondary School, Pallavaram, Vellore district for control group. The distance between these two schools is 10 kms.Keeping in mind the geographical distance, time available for data collection, availability of subjects, easy acquaintance, accessibility and the investigator selected this setting for the availability of the sample and feasibility of the study. The distance between the two selected setting is 10 kms.Total number of students in each school is 2200 and 2100 respectively. In this, more than 300 girls were suffering from premenstrual tension syndrome. Total number of students studying in 7^{th}, 8^{th} and 9^{th} standard is 550 and 600 respectively. Among these girls, 30 students were selected in each school who fulfilled the inclusion criteria for experimental and control group. 60 samples where 30 in experimental and 30 in control group. The investigator selected samples by non probability purposive sampling technique. The tool was constructed after extensive review of literature and discussion with experts, to collect the data. The tool to measure the PMTS was based on modified PMTS scale.

DATA COLLECTION PROCEDURE:

The study was conducted from 15-6-2011 to 15-7-2011 two schools in Arakkonam.A formal permission was obtained from the Headmaster of 2 government schools in Arakkonam and 30 adolescent girls with PMTS were selected for experimental group and 30 adolescent girls with PMTS were selected for control group by using non probability purposive sampling technique. The researcher selected the samples in experimental and control group who fulfilled the inclusion criteria. A brief introduction about the self and the study was given to the adolescent girls and consent was obtained (both oral and written) and the confidentiality of the response was assured.

Pre assessment was done in both experimental and control group. The premenstrual tension syndrome was assessed by modified PMTS scale. The girls were given 75 gms of raw papaya fruit for 21 days from the 5 th day of LMP for experimental group in midmorning. Papaya fruit was not given to the control group. Following the last day intervention, post assessment was done to assess the level of PMTS.Pamphlets were distributed for both groups.

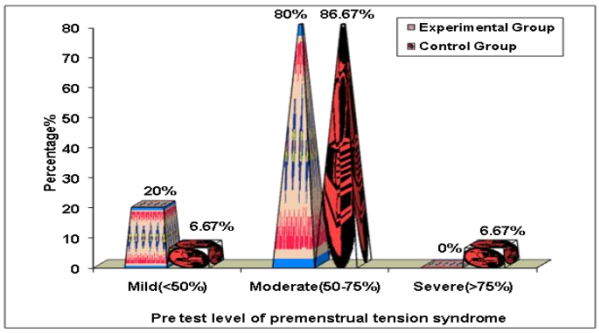
Table I Frequency And Percentage Distribution Of Demographic Variables In Experimental And Control Group.

n= 60

Demographic Variables	**Experimental group**		**Control Group**	
	No.	**%**	**No.**	**%**
Age in years				
11 - 12 years	2	6.70	3	10.00
13-14 years	27	90.00	22	73.30
15-16 years	1	3.30	5	16.70
Age at menarche				
11 - 12 years	16	53.30	7	23.30
13-14 years	14	46.70	20	66.70
15-16 years	-	-	3	10.00
Weight in kilogram				
31-40kg	23	76.67	24	80.00
41-50kg	7	23.33	5	16.67
51-60kg	-	-	1	3.33
Body mass index				
<19	8	26.67	8	26.67
20-25	22	73.33	22	73.33
>30	-	-	-	-
Type of Diet				
Vegetarian	3	10.00	3	10.00
Non-vegetarian	2	6.67	2	6.67
Mixed	25	83.33	25	83.33

Table II Frequency And Percentage Distribution Of Pretest Level Of Premenstrual Tension Syndrome Among Adolescent Girls In Experimental And Control Group.**n=60**

Pretest	Mild(<50%)		Moderate(50-75%)		Severe(>75%)	
	No.	%	No.	%	No.	%
Experimental group	6	20	24	80	-	-
Control group	2	6.67	26	86.67	2	6.67

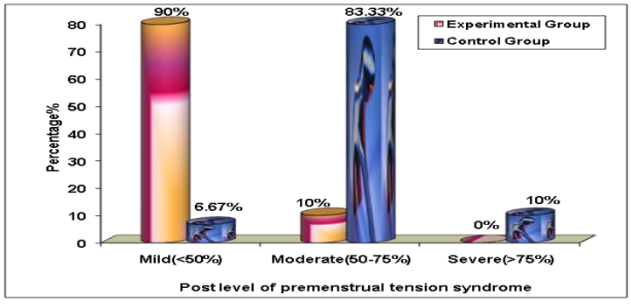


Percentage Distribution Of Pretest Level Of Premenstrual Tension Syndrome Among Adolescent Girls In Experimental And Control Group.

Table III Frequency And Percentage Distribution Of Post Test Level Of Premenstrual TensionSyndrome Among Adolescent Girls In Experimental And Control Group.

n=60

Post test	Mild (50%)		Moderate (50-75%)		Severe (>75%)	
	No.	%	No.	%	No.	%
Experimental group	27	90	3	10	-	-
Control group	2	6.67	25	83.33	3	10



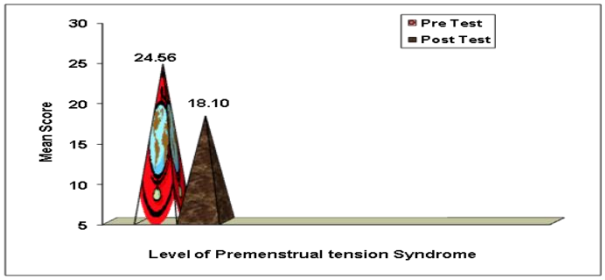
Percentage Distribution Of Post Test Level Of Premenstrual Tension Syndrome Among Adolescent Girls In Experimental And Control Group

Table IV Comparison Of Pretest Level And Post Test Level Of Premenstrual Tension Syndrome In Experimental Group.

n = 60

Test	Mean	S.D	't' value
Pre test	24.56	3.40	10.9*** ("S")
Post test	18.10	1.02	

***p<0.001, S- Significant



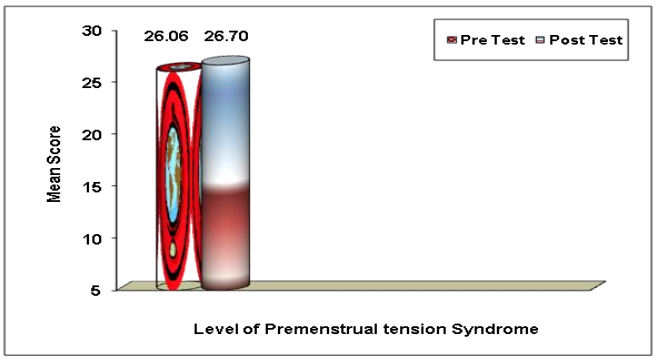
Comparison Of Pretest Level And Post Test Level Of Premenstrual Tension Syndrome In Experimental Group.

Table V Comparison Of Pretest Level And Post Test Level Of Premenstrual TensionSyndrome In Control Group.

n= 60

Test	Mean	S.D	't' value
Pre test	26.06	3.507	-4.57 N.S
Post test	26.70	3.407	

N.S – Non Significant



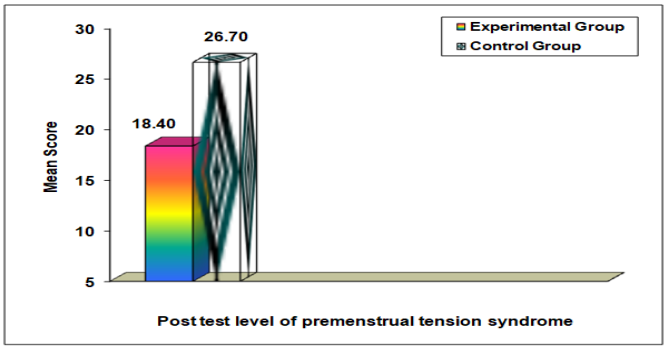
Comparison Of Pretest Level And Post Test Level Of Premenstrual Tension Syndrome In Control Group.

Table VI Comparison Of Post Test Level Of Premenstrual Tension Syndrome BetweenExperimental And Control Group.

n=60

Test	Mean	S.D	't' value
Experimental group	18.4	1.02	13.15 ("S")***
Control group	26.7	3.50	

***p<0.001, S- Significant



Comparison Of Post Test Level Of Premenstrual Tension Syndrome Between Experimental And Control Group.

Table VII Association Of Post Test Level Of Premenstrual Tension Syndrome Among Adolescent Girls With The Demographic Variables In Experimental Group.

Demographic Variables	Mild		Moderate		Severe		Chi Square Value
	No.	%	No.	%	No.	%	
Age in years							χ^2 = 6.370 d.f = 4 N.S
11-12 years	-	-	2	6.67	-	-	
13-14 years	27	90.00	-	-	-	-	
15-16years	-	-	1	3.33	-	-	
Age at menarche							χ^2 = 6.500 d.f = 4 N.S
11-12 years	16	53.33	-	-	-	-	
13-14 years	11	36.67	3	10.00	-	-	
15-16years	-	-	-	-	-	-	
Weight in kilogram							χ^2 = 0.200 d.f = 4 N.S
31-40 kg	22	73.33	1	3.33	-	-	
41-50 kg	5	16.67	2	6.67	-	-	
51-60kg	-	-	-	-	-	-	
Body mass index							χ^2 = 0.692 d.f = 4 N.S
<19	8	26.67	-	-	-	-	
20-25	19	63.33	3	10.00	-	-	
>30	-	-	-	-	-	-	
Type of diet							χ^2 = 0.500 d.f = 4 N.S
Vegetarian	3	10.00	-	-	-	-	
Non vegetarian	2	6.67	-	-	-	-	
Mixed	22	73.33	3	10.00	-	-	

DISCUSSION:

The first objective was to assess the pre-test level of premenstrual tension syndrome among adolescent girls in experimental and control group.

In the experimental group, majority 24 (80%) of adolescents girls were in the moderate level of premenstrual tension syndrome, 6(20%) of adolescents girls were in the mild level of premenstrual tension syndrome none of them comes under the severe level of premenstrual tension syndrome.

In the control group, majority 26(86.67%) of adolescent girls were in the moderate level of premenstrual tension syndrome, 2(6.67%) were in the mild level of premenstrual tension syndrome and 2(6.67%) were in the severe level of premenstrual tension syndrome.

The findings of the study were consistent with the study done by Samia Tabassum et al (2010), had conducted a study to determine the frequency and severity of premenstrual syndrome in young college girls in Europe. An observational study was conducted among 384 young girls by convenient sampling technique. Data was collected over two cycles by filling a 29 items shortened premenstrual assessment form. The results showed that the frequency of premenstrual syndrome was 53%according to ICD -10 criteria among which 42% were mild, 18.2% were moderate and 31.7% were severe. The study concludes that premenstrual syndrome is a common problem in young girls.

The second objective was to assess the post-test level of premenstrual tension syndrome among adolescent girls in experimental and control group.

In the experimental group, majority 27(90%) had mild level of premenstrual tension syndrome, 3(10%) were in the moderate level of premenstrual tension syndrome and in the control group 25(83.33%) had moderate, 2(6.67%) had mild and 3(10%) had severe level of premenstrual tension syndrome respectively.

The third objective was to determine the outcome of papaya fruit among adolescent girls in experimental and control group.

In the experimental group, the pretest mean score was 24.56 with S.D 3.40 and in the post test the mean score was 18.10 with S.D1.02. The calculated't' value was 10.9 which was statistically highly significant at $p<0.001$ level. Hence the research hypothesis H_1 stated that "there is a significant relationship between premenstrual tension syndrome and papaya fruit" was accepted.

The study findings were found to be consistent with the study conducted by Edinburg et al (2009) which assess the effectiveness of papaya fruit on premenstrual tension syndrome between the ages of 18 to 45 years.920 women were screened.500 were enrolled. There was no difference between groups on the mean screening symptom score of the luteal, menstrual and inter menstrual phase of the menstrual cycle. Since there is a significant relationship between premenstrual tension syndrome and papaya fruit among adolescent girls thus the research hypothesis H_1 stated that earlier was accepted.

The conceptual framework of this study was based on modified Weidenbach's helping art of clinical nursing theory [1964]. The investigator adopted this model and perceived apt in enabling to assist the outcome of papaya fruit on premenstrual tension syndrome. This model views the premenstrual symptoms among adolescent girls as an individual unique experience that is in need for relief from premenstrual tension syndrome. The central purpose of the study is to facilitate the adolescent girls to cope up with the premenstrual tension syndrome. The investigator planned the prescription that will fulfill the central purpose by identifying the various means to achieve the goal. Thus the investigator selected two groups where papaya fruit is provided for one group and no intervention for the other group.

The fourth objective was to associate the level of premenstrual tension syndrome among adolescent girls in experimental group with selected demographic variables.

The association table VII reveals that the demographic variable in the experimental group were not associated with post assessment level of premenstrual tension syndrome among adolescent girls.

The study findings were consistent with the study conducted by Janita P. C. Chau et al (1998), conducted a study to determine the effects of an educational programme on adolescents with premenstrual syndrome .Participants from a sample of 94 schoolgirls aged between 14 and 18 years from four secondary schools in Hong Kong were assigned to either the experimental or control group. Immediately following the education program, the schoolgirls in the experimental group had significantly increased knowledge scores as measured by the Premenstrual Syndrome Knowledge Questionnaire. Three months following the education program, schoolgirls in the experimental group reported having a significant reduction in total PMS scores and three of the subscale scores as measured by a translated version of Abraham's Menstrual Symptom Questionnaire. The results showed that no significant association between demographic variables with the post test level of premenstrual syndrome.

CONCLUSION:

The study findings concluded that the adolescent girls in experimental group had reduction in the PMTS when compared with control group after the intervention; hence papaya fruit can be incorporated as an effective treatment in managing the PMTS among adolescent girls.

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