Effectiveness of an Educational Program on Female Students' Practices toward Premenstrual Syndrome at Secondary Schools in Third Al- Rusafa Education Directorate

فاعلية البرنامج التعليمي على ممارسات طالبات المدارس الثانوية نحو متلازمة ما قبل الطمث في مديرية تربية الرصافة الثالثة

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المستخلص

الهدف: لمعرفة مدى فاعلية البرنامج التعليمي في ممارسات الطالبات تجاه متلازمة ما قبل الطمث.

المنهجية: تم إجراء دراسة تصميم شبه تجريبية شملت (140) طالب وطالبة في أربع مدارس ثانوية بمدينة الصدر ، و (70) طالبًا للمجموعة الدراسية ، و (70) طالبًا للمجموعة الضابطة. تم تحديد انتشار PMS من خلال معايير الكلية الأمريكية لأطباء النساء والتوليد (ACOG) (2015) لاختيار طلاب PMS قبل البرنامج. تم وضع برنامج التعليم في أربع خطوات ، الخطوة الأولى (قبل الاختبار) هي تقييم الممارسات ، قبل تنفيذ البرنامج ، والخطوة الثانية هي تنفيذ البرنامج ، باتباع خطوتين بعد الاختبار الأول والثاني بين كل اختبار أسبوعين. تم تحديد الصلاحية من خلال لجنة من الخبراء ، وتم تحديد موثوقية الاستبيان من خلال دراسة تجريبية لعشرة طلاب. تم تحليل البيانات من خلال الإحصاء الاستدلالي والوصفي.

النتائج: تشير الدراسة إلى أن عدد عينة الدراسة المصابة بمتلازمة ما قبل الحيض (140). توجد فروق ذات دلالة إحصائية عند (P- value≤ 0.01) بين الاختبار القبلي والبعدي الأول والاختبار البعدي الثاني. ووجدت فروق ذات دلالة إحصائية بين الاختبار الأول قبل تنفيذ البرنامج والاختبارين بعد تنفيذ البرنامج ، مقارنة بالمجموعة الضابطة.

الاستنتاجات: تشير الدراسة إلى أن عدد عينة الدراسة المصابة بمتلازمة ما قبل الحيض (140). توجد فروق ذات دلالة إحصائية عند (P- value≤ 0.01) بين الاختبار القبلي والبعدي الأول والاختبار البعدي الثاني. ووجدت فروق ذات دلالة إحصائية بين الاختبار الأول قبل تنفيذ البرنامج والاختبارين بعد تنفيذ البرنامج ، مقارنة بالمجموعة الضابطة.

التوصيات: أوصت الدراسة بأن تكون هنالك دورات تعليمية مبكرة في المرحلة الابتدائية تتعلق بالطمث، ومتلازمة ما قبل الطمث، وتدابير الرعاية الذاتية لهم.

الكلمات المفتاحية: الفاعلية، البرنامج التعليمي، ممارسات، المدارس الثانوية، متلازمة ما قبل الطمث.

Abstract

Objective: Determination the effectiveness of educational program on female students' practices toward premenstrual.

Methodology: A quasi-experimental design study was conducted involving (140) student purposely in four secondary schools at Al-sadder city (70) student for study group and (70) for control group. The prevalence of PMS selected through American College of Obstetricians and Gynecologists (ACOG) (2015) criteria to select PMS students before program. The education program were set in four steps, the first step (pre-test) is to assess the practices, before the implementation of the program, the second step is implementing the program, following two steps post-test I and II between each test two weeks. Validity is determined through a panel of experts, and the reliability of the questionnaire is determined through a pilot study of ten students. Data analyzed through descriptive inferential statistics.

Results: The study indicates that the number of study sample that reported having premenstrual syndrome was (140). There were significant differences at (P- value≤ 0.01) between pretest, posttest I and posttest II. A significant difference results were found between the first test before the implementation of the program and the two tests after implementation the program, compared to the control group.

Recommendations: The study recommended that early education courses in primary school regarding menstruation, premenstrual syndrome, and self-care measures.

Keywords: Effectiveness, Educational Program, Practices, Secondary Schools, Premenstrual Syndrome.

Introduction

Menstruation is regarded as a normal event in most of females' life through their reproductive age. Some of them affected by problems happened during menstruation, and one of the most common problems is premenstrual tension syndrome (PMTS) which was first indicated by Frank and Harney in 1931, who explained that hormonal disturbances are the main causes of it [(1)]. Premenstrual syndrome (PMS) is one of the most prevalent disorders at reproductive age and has a negative impact on emotions and the performance of women. It negatively affects the quality of life of millions of women [(2)]. It is the emergence of periodic one or more symptoms of symptoms before menstruation and in the first few days of menstruation. A series of factors that affect the health of people, activity, smoking, and food intake are factors associated with lifestyle, and evidence suggests that women and girls with PMS do not have an adequate life span [(3)]. Nutritional intake and metabolism may play an important role in the cause and treatment of menstrual disorders. Herbal and dietary therapies number among the more popular complementary medicines yet there is a lack of taxonomy to assist in classifying them. Herbs and other phytomedicinal products (medicine from plants) have been legally classified as dietary supplements vitamins, minerals, herbs or other botanicals, amino acids and other dietary substances are also classified as herbs [(4)]. Various vitamins and minerals and fatty acids, including B Vitamins and Magnesium are involved as co-enzymes in the production of these neurotransmitters and hence why some believe supplementing the diet with them helps to reduce PMS symptoms although, except for magnesium, a true deficiency in any particular nutrient has been hard to show [(5)]. Lifestyle modifications and exercise are first-line recommendations for all women with PMS and may be all that is needed to treat mild-to-moderate symptoms. Women who experience premenstrual breast tenderness can reduce or eliminate this symptom by taking (600 IU) of Vitamin E daily [(6)].

Methodology

A quasi-experimental design study was carried out through the application of (pre-test and post-test) approach for the study and control groups. The study was carried-out in four secondary schools at Third Al-Rusafa education directorate in Al-Sadder city which include; Al-Fadila secondary school, Al – Misra secondary school, Al–Rabab secondary school and Al – Estiqama secondary school. The Al-Sadder city contains two judicial (first Al-Sadder judicial and second Al-Sadder judicial) .The study conducted in first Al-Sadder judicial and divided to three districts (Al-Markaz, Al-Seddik Al-Akbar, Furat). It contains seven secondary schools. The study was conducted in four schools, out of seven schools the remaining three schools, two of Al Mutamayizeen schools and does not contain the literary branch and the third school is an evening shift school. The filling of the questionnaire and presentation of program carry on in the computer lab and class room, which contain screen for viewing videos and presentation of the program. The sample of the study non- probability sampling (purposive sample) of (140) female students' (74) students from scientific branch and (66) students literary branch was selected from four secondary schools and based on the study criteria. The sample divided into two groups (70) female students (study group) who

participated in the educational program and (70) female students (control group) who did not participate in the program the groups are almost matched relative to their characteristics. The primary assessment for diagnostic premenstrual syndrome was chosen according to American College of Obstetricians and Gynecologists (ACOG)[7] and a questionnaire format and educational program was constructed to assess practices and evaluate the effectiveness of educational programs concerning premenstrual syndrome on female student's practices. The questionnaire format composed of three major parts as follows (Part one / socio-demographic characteristics, part two / menstrual cycle information, and part three: student's practices about premenstrual syndrome. The validity of the instrument is determined through a panel of (17) experts in different fields. The pilot study was carried out in December 30th 2018 to January 13th 2019. Ten students in the Al – Estiqama School were participated in the program to determine the reliability of the questionnaire through the use of test and retest approach the duration between two tests was two weeks. The data was collected through the self-reporting technique (pre-test) by using the questionnaire form after obtaining permission from their families. The data was collected through the period from (December 20th 2018 to the February 27th 2019). Data collection started for (70) student for study group divided into two groups and for control group (70) student divided, into two group. Time needs to filled questionnaire (15-20) minutes. The methods that used in educational program (lectures with the discussion, a booklet containing all lectures, posters, video clips, role play, herb demonstration such as (cinnamon, chamomile, ginger, herb of Mariam, and mint), and measuring devices such as (Tape measure and Digital weight device) for measure (body mass index).

Results

Table (1): Distribution of the Study and Control Group Sample According to the Socio-demographic Characteristics

Variables	Study (N = 70)		Control (N = 70)	
	F	%	F	%
Age/Year				
14	1	1.4	0	0.0
15	3	4.3	0	0.0
16	27	38.6	29	41.4
17	31	44.3	28	40.0
18	7	10.0	7	10.0
19	1	1.4	4	5.7
20	0	0.0	2	2.9
Mean (SD)	**16.6 ± .89**		**16.8 ± 1.0**	
***Monthly Income (Iraqi Dinar)**				
< 200.000	5	7.1	3	4.3
201.000-400.000	12	17.1	10	14.3
401.000-600.000	13	18.6	26	37.1
601.000-800.000	23	32.9	21	30.0
801.000-1.000.000	11	15.7	10	14.3
> 1.000.000	6	8.6	0	0.0

Level of education	Father		Mother		Father		Mother	
	Study (N = 70)				Control (N = 70)			
	F	%	F	%	F	%	F	%
Unable to read and write	4	5.7	7	10.0	2	2.8	2	2.9
Read and write	6	8.6	3	4.3	13	18.6	**20**	**28.5**
Primary school graduate	8	11.4	15	21.4	4	5.7	4	5.7
Intermediate school graduate	14	20.0	**17**	**24.3**	9	12.9	9	12.9
Secondary school graduate	**16**	**22.9**	**12**	17.2	17	24.3	13	18.6
Diploma	8	11.4	8	11.4	7	10.0	7	10.0
Bachelor's degree and above	14	20.0	8	11.4	**18**	**25.7**	15	21.4
Occupation								
Governmental employee	**47**	**67.1**	11	15.7	**30**	**42.9**	16	22.9
Freelancer	15	21.4	4	5.7	**30**	**42.9**	4	5.7
Retired	2	2.9	3	4.3	2	2.8	0	0.0
Not working/ house wife	6	8.6	**52**	**74.3**	8	11.4	**50**	**71.4**

***Estimated from Ministry of Planning: Central Statistical Organization (CSO)**

Table (1) shows the observed frequencies, percent's of socio – demographical characteristics variables:-

- Student's Age: - The mean age for students in the study group is (16.6 ± .89); less than a half (n = 31; 44.3%) of the sample was reported at age 17-years, while the lowest

number (n = 1; 1.4%) who age 14-years and 19-years for each of them. For the control group, the mean age (16.8 ±1.0); more than one third (n = 29; 41.4%) age 16-years, while the lowest number (n = 2; 2.9%) who age 20-years.

- Monthly Income (Iraqi Dinar): - Family monthly income, around a third (n = 23; 32.9%) of the study group reported that their monthly income ranges between (601.000-800.000 I.D.), while the lowest number (n = 5; 7.1%) was income is less than (200.000 I.D.). For the control group, more than one third (n = 26; 37.1%) reported that their monthly income ranges between (401.000-600.000 I.D.), while the lowest number was income is less than (200.000 I.D.) (n = 3; 4.3%).

- Educational Level of Father and Mother: - As per fathers' level of education, more than a fifth (n = 16; 22.9%) of the study group are secondary school graduates, while the lowest number (n = 4; 5.7%). who are unable to read and write. For the control group; more than a quarter (n = 18; 25.7%) hold a bachelor's degree, while the lowest number (n = 4; 5.7%) who are primary school graduates, and those who are unable to read and write (n = 2; 2.9%). Concerning mothers' level of education, less than a quarter (n = 17; 24.3%) of the study group are intermediate school graduates, while the lowest number (n = 3; 4.3%) who read and write. For the control group, more than a quarter (n = 20; 28.5%) read and write, while the lowest number (n = 2; 2.9%) who are unable to read and write.

- Occupation of Subjects' father and mother: - Almost half of the study group (n = 47; 67.1%) are governmental employees, while the lowest number (n = 2; 2.9%) who are retired. For the control group, more than one third (n = 30; 42.9%) are both governmental employees and freelancers for each of them, while the lowest number (n = 2; 2.9%) who are retired. Concerning mothers' occupation, most of the study groups (n = 52; 74.3%) are housewives, while the lowest number (n = 3; 4.3%) who are retired. For the control group, most are housewives (n = 50; 71.4%), while the lowest number (n = 4; 5.7%) who are freelancers.

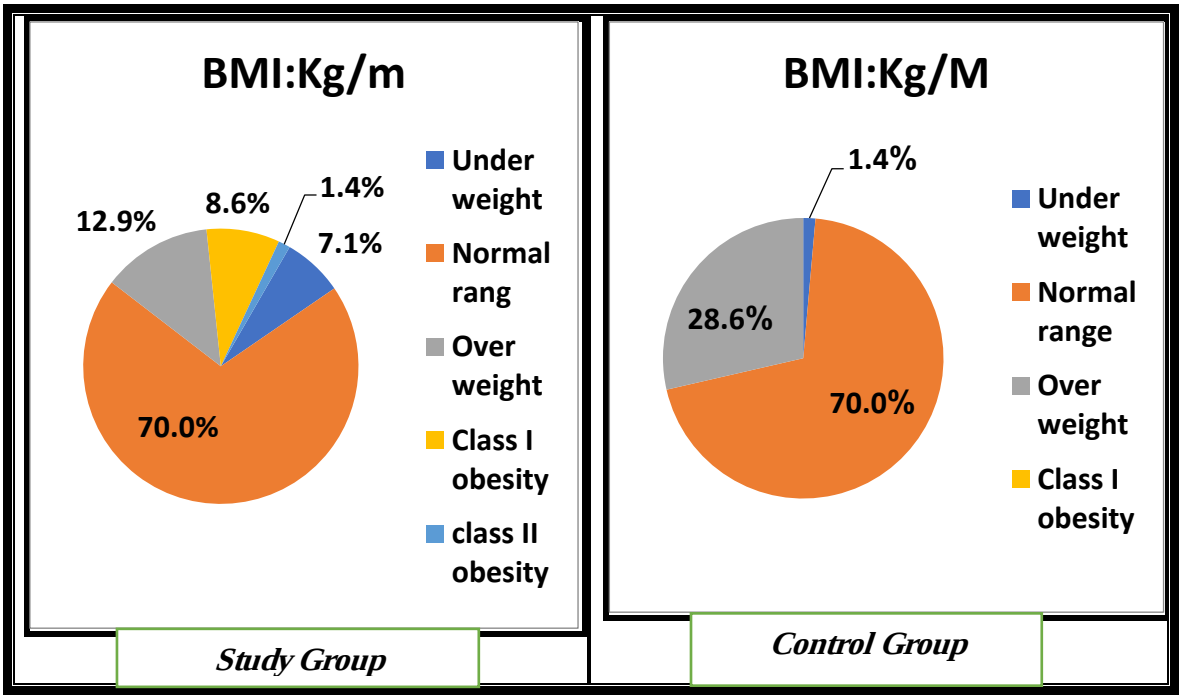

Figure (1): Pie Chart for Distribution of BMI for Study and Control Group

Concerning the body mass index; the mean BMI for students in the study group is (23.06 ± 4.06); most are within normal range (n = 49; 70.0%), and the lowest number (n = 1; 1.4%) who has obesity – class II. The control group, the mean BMI is (23.5 ± 1.96); most are within normal range (n = 49; 70.0%), and the lowest number (n = 1; 1.4%) who has underweight.

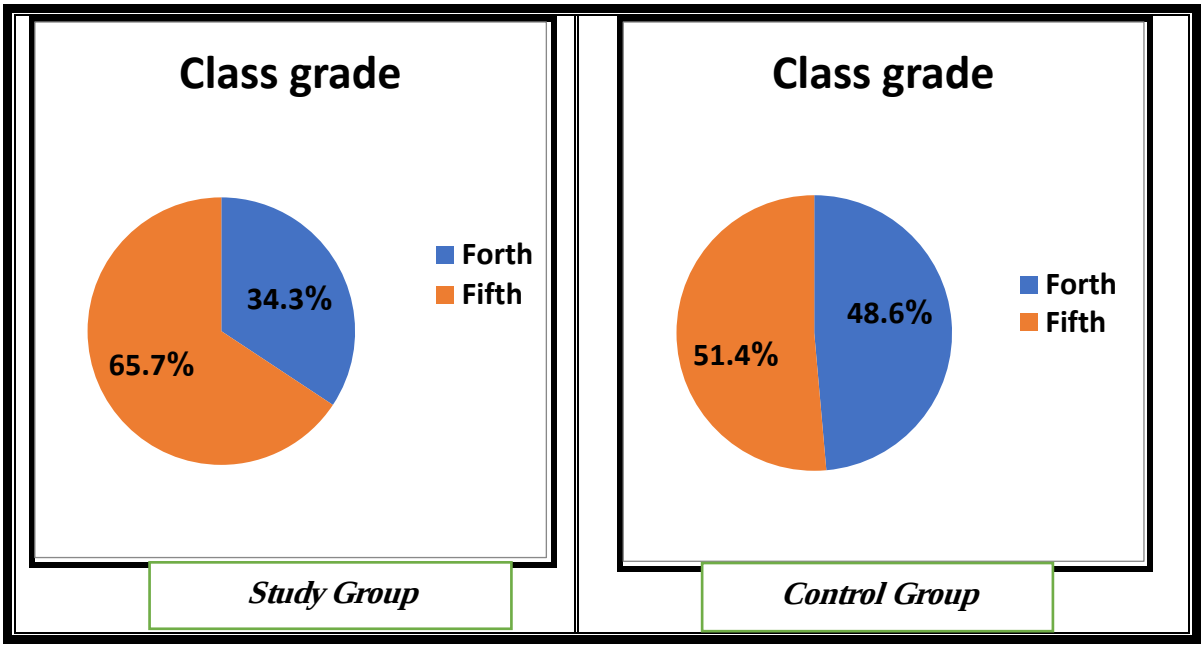

Figure (2): Pie Chart for Distribution of Class Grade for Study and Control Group

Regarding class grade, most (n = 46; 65.7%) of the study group are fifth-graders out of six, followed by those who are fourth-graders (n = 24; 34.3%). The class grade, for the control group, more than a half (n = 36; 51.4%) are fifth-graders out of six, followed by those who are fourth-graders (n = 34; 48.6%).

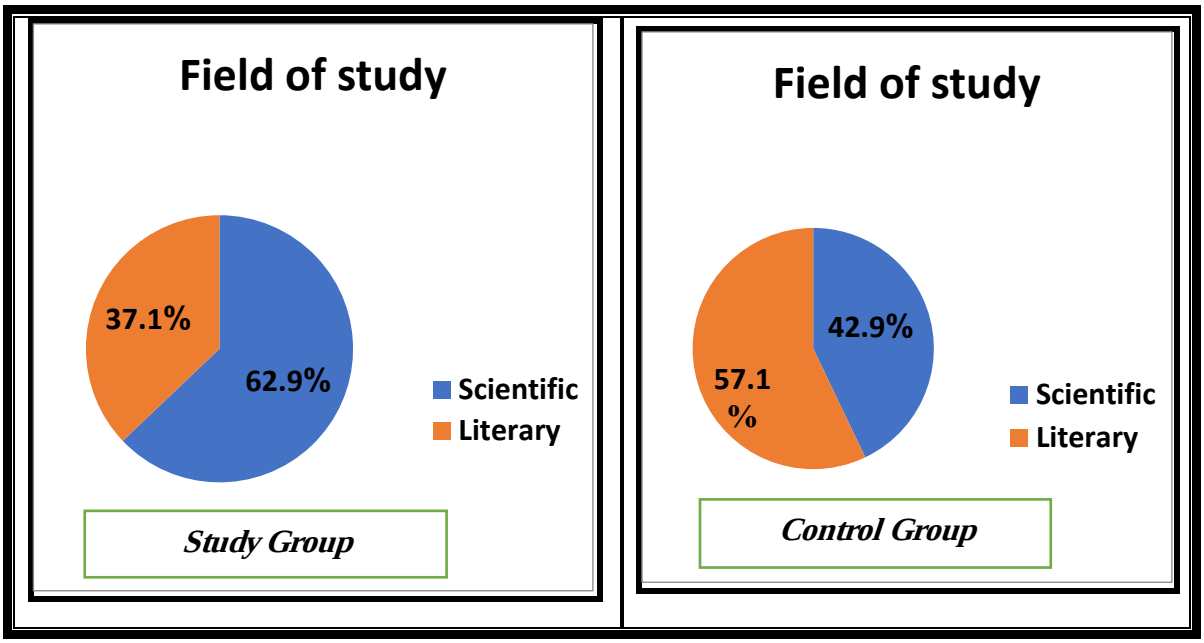

Figure (3): Pie Chart for Distribution of Field of Study for Study and Control Group

Regarding field of study, most of the study group (n = 44; 62.9%), are scientific, followed by those who are literary (n = 26; 37.1 %). The control group most of the study group (n = 40; 57.1%) are literary, followed by those who are scientific (n = 30; 42.9%).

Table (2): Distribution of the Study and Control Group Sample According to the Menstrual History

Variables	Study (N = 70)		Control (N = 70)	
	Frequency	Percent	Frequency	Percent
Menarche Age (Years)				
9	1	1.4	1	1.4
10	3	4.3	10	14.3
11	10	14.3	22	31.4
12	28	40.0	23	32.9
13	10	14.3	8	11.4
15	16	22.9	6	8.6
16	2	2.9	0	0.0
Mean (SD)	**12.4 ± 1.3**		**11.6 ± 1.2**	
Duration of menstrual flow (Days)				
< 4	5	7.1	8	11.4
4-5	28	40.0	39	55.7
6-7	28	40.0	23	32.9
≥ 8	9	12.9	0	0.0
***Amount of menstrual flow (Pad)**				
Mild (≤ 3 pads per day)	41	58.6	4	5.7
Moderate (4-5 pads per day)	20	28.6	45	64.3
Heavy (≥ 6 pads per day)	9	12.8	21	30.0
Menstruation Interval (Days)				
< 28	26	37.1	19	27.1
29-30	25	35.7	28	40.0
> 31	19	17.1	23	32.9
History of PMS in the family				
Yes	26	37.1	13	18.6
No	44	62.9	57	81.4
If yes, who?				
Mother	11	42.3	6	46.2
Sister	7	26.9	7	53.8
Both	8	30.8	0	0.0

***Each soaked normal sized pad hold a teaspoon (5ml) of blood normally to soak (1-7) normal sized pads in whole period [19].**

Table (2) shows the observed frequencies, percent's of menstrual history:-

- Students' age on Menarche:- The mean age for students of the study group is (12.4 ± 1.3); more than one third (n = 28; 40.0%) reported that they have menarche on the age of 12-years, and the lowest number (n = 1; 1.4%) who has it at the age of 9-years. For the control group, the mean of age at menarche is (11.6 ± 1.2); around a third (n = 23;

32.9%) have it at the age of 12-years, and the lowest number (n = 1; 1.4%) who has it at the age of 9-years.

- Duration of Menstruation:- More one third of the study group (n = 28; 40.0%) reported that their menstruation lasts for 4-5-days and 6-7-days for each of them, and the lowest number (n = 5; 7.1%) those whose menstruation lasts for less than four days. For the control group, more than a half (n = 39; 55.7%) reported that their menstruation lasts for 4-5-days, and the lowest number (n = 8; 11.4%) those whose menstruation lasts for less than four days.

- Menstruation Amount: More than a half of the study group (n = 41; 58.6%) reported that their menstruation is mild, and the lowest number (n = 9; 12.8%) those whose menstruation is heavy. For the control group, most (n = 45; 64.3%) reported that their menstruation is moderate, and the lowest number (n = 4; 5.7%) those whose menstruation is mild.

- Menstruation Interval: More than a third of the study group (n = 26; 37.1%) reported that their menstruation interval

is less than 28-days, and the lowest number (n = 19; 17.1%) those whose menstruation interval is longer than 31-days. For the control group, more one third (n = 28; 40.0%) reported that their menstruation interval is 29-30-days, and the lowest number (n = 19; 27.1%) those whose menstruation interval is less than 28-days.

- History of PMS in the Family:- More than a third of the study group (n = 26; 37.1%) reported that there is such a history compared to the control group (n = 13; 18.6%). Lastly, more than two-fifth of those in the study group (n = 11; 42.3%) who reported that there is such a history reported that their mothers experience PMS, followed by both mother and sister (n = 8; 30.8%), and sister (n = 7; 26.9%). For the control group, more than a half of sister experience PMS (n = 7; 53.8%) compared to mother (n = 6; 46.2%).

Table (3): Summary Statistics for the Practices Domain Items in Different Periods (Pretest, and Posttest) of Applying Educational Program toward PMS (Study Group) (n= 70)

List	Item	Pretest			Posttest			*t-test*	P-value
		MS	R.S%	Ass.	MS	R.S%	Ass.		
1.	***Nutritional Practices***	1.91	63.87	L	2.55	85,27	M	-5.911	.000 (HS)
2.	***Complimentary Foods***	1.31	43.77	L	2.32	77.44	M	-8.728	.000 (HS)
3.	***Herbs***	1.36	45.5	L	2.73	91.16	H	-1.017	.422 (NS)
4.	***Exercise***	1.66	55.65	L	2.74	91.33	H	-14.094	.000 (HS)
5.	***Rest and Relaxation***	1.83	61.16	L	2.78	92.95	H	-8.813	.000 (HS)
6.	***Spiritual Therapy***	2.03	67.66	L	2.80	93.55	H	-7.830	.000 (HS)

Assess.= Assessment, L=Low (R.S = less than 75%), M=Moderate (R.S = 75 % - 87.5%), H=High (R.S = 87.6% – 100%), MS = Mean Score, R.S = Relative Sufficiency, t = t-test, HS = Significant at P- value ≤ 0.05.

Table (3) shows that the mean of score of pretest is lower than posttest and throughout of the result posttest is higher than the pretest at p value for statistic (p 0.05) which is a statistically high significant result. In summary, the program is effective in improving the study sample practices and achieving the study's hypothesis.

Table (4): Descriptive Statistics for the Values of the Study and Control Group Practices about Domains Over Time (n=70)

Domains	Pretest				Posttest 1				Posttest 2			
	Mean		SD		Mean		SD		Mean		SD	
	S.G	C.G	S.G	C.G	S.G	C.G	S.G	C.G	S.G	C.G	S.G	C.G
1.Nutritional practices	30.71	29.62	4.93	5.40	35.31	29.44	4.48	5.56	35.38	29.45	4.46	5.56
2.Complimentary foods	3.95	3.70	1.34	1.05	5.27	3.72	1.75	1.08	6.98	3.72	2.48	1.08
3. Herbs	2.74	2.97	1.00	0.86	4.68	3.05	0.73	0.81	4.84	3.10	0.73	0.80
4. Exercise	5.01	4.51	1.54	1.43	8.01	4.47	1.36	1.45	8.22	4.47	1.06	1.45
5. Rest and Relaxation	14.71	12.92	3.75	3.50	22.22	12.78	3.05	3.51	22.61	12.78	2.53	3.51
6. Spiritual Therapy	6.10	5.78	1.69	1.76	8.38	5.62	1.14	1.73	8.55	5.62	0.81	1.73
-Over all Practices	10.54	9.92	2.38	2.33	13.98	9.85	2.09	2.36	14.43	9.86	2.01	2.36

S.G: Study Group
C.G: Control Group

Table (4) shows the observed descriptive statistics for the values of the study and control group practices.

- **Nutritional Practices:** The values of the students' nutritional practices for the study group noticeably increase by time (Pretest = 30.71, Posttest II = 35.31, Posttest II = 35.38). For the control group, such values slightly decrease by time (Pretest = 29.62, Posttest II = 29.45, Posttest II = 29.45).

-Complimentary Foods: The values of the students' practices related to complimentary foods for the study group noticeably increase by time (Pretest = 3.95, Posttest II = 5.27, Posttest II = 6.98). For the control group, such values slightly increase by time (Pretest = 3.70, Posttest II = 3.72, Posttest II = 3.72).

- **Herbs:** The values of the students' knowledge's about the herbs for the study group noticeably increase by time (Pretest = 2.74, Posttest II = 4.68, Posttest II = 4.84). For the control group, such values slightly increase by time (Pretest = 2.97, Posttest II = 3.05, Posttest II = 3.10).

-Exercise: The values of the students' exercise for the study group noticeably increase by time (Pretest = 5.01, Posttest II = 8.01, Posttest II = 8.22). For the control group, such values slightly decrease by time (Pretest = 4.51, Posttest II = 4.47, Posttest II = 4.47).

- **Rest and Relaxation:** The values of the students' practices related to rest and relaxation for the study group noticeably increase by time (Pretest = 14.71, Posttest II = 22.22, Posttest II = 22.61). For the control group, such values slightly decrease by time (Pretest = 12.92, Posttest II = 12.78, Posttest II = 12.78).

-Spiritual Therapy: The values of the students' spiritual therapy for the study group noticeably increase by time (Pretest = 3.10, Posttest II = 8.38, Posttest II = 8.55). For the control group, such values slightly decrease by time (Pretest = 5.78, Posttest II = 5.62, Posttest II = 5.62).

- Over all Practices: For the study group noticeably increase by time (Pretest =10.54, Posttest II =13.98, Posttest II =14.43). For the control group, such values slightly decrease by time (Pretest =9.92, Posttest II =9.85, Posttest II =9.86).

Discussions

Socio-demographic Characteristics of the Study Sample Table (1):-

Regarding to the students age the study sample aged 17 years old (16.89 ± .89), in comparison with the control group whose age 16 years old (13.88 ± 1.0). Concerning to Family monthly income, around one third of them reported that monthly income is ranges between (601.000-800.000 I.D) (n = 23; 32.9%) approximately (400-600) US Dollars, compared to control group who monthly income rang (401.000-600.000 I.D) approximately (300-500) US Dollars, more than half (n=39; 55.7%) of study sample from their point of view considered as some sufficient compare with control group more than half (n=40; 57.1%) considered as some sufficient. Concerning the educational level of the study sample mothers are intermediate school graduated (n = 17; 24.3%). While their fathers graduated from secondary school (n = 16; 22.9%). The majority (n = 47; 67.1%) of study groups father are governmental employee in comparison with the control groups father were (n = 30; 42.9%) who are freelancer, for mothers occupation for both group the majority (n=52; 74.3) (50; 71.4) are house wife. With respect to study sample BMI, the mean BMI is (23.06 ± 4.06); kg/m2 (n = 49; 70.0%) which considered as a normal range for both study and control group. Regarding class grade, class grade for both study and control group are fifth grade out of six. In respect to the field of study, the majority (n=44; 62.9%) of study sample are scientific field while the control group (n=40; 57.1%) are literary field. As per parents' living status, the majority (n = 61; 87.1%) and (n = 59; 84.3%) of study group and control group live together respectively, few of both groups are living in separated family, concerning accommodation, the majority (n = 62; 88.6%) (n = 59; 84.3%) of students in the study group and control group live with parents respectively, as a result more than half of the study sample may coping on their families or relying on their parents PMS management and menstrual related matters. Adolescence is an important and vulnerable period between childhood and adulthood. It is a common menstrual problems in adolescents and should be treated as dysmenorrhea according to Iraq circumstances that occur previously (war and economic sanctions....etc.), these may cause and since stress associated with PMS, this may play and increased PMS according to these factors. The prevalence of PMS frequently occurs among women with high stress level adolescent are in the process of undergoing tremendous physical and psychological changes on their way to adulthood, moreover the frequently experience stress related to their studies as well as their sexual reproductive health. Ethnicity and culture, diagnostic criteria and culture might difference across studies in variation of the prevalence of PMS [8][9][10][11].

Reproductive History (Table 2)-:

In respect to student age on menarche the mean age for students in the study group is (12.4 ± 1.3); more than one third (n = 28; 40.0%) reported

that they have menarche on the age of 12-years. Most girls reached menarche between 12-13 years (minimum of 9 years and maximum of 17 years) The findings of this study agree with study Self-Care Measures Regarding Premenstrual Syndrome among Female Nursing Students. More than one third (n = 28; 40.0%) (n = 39; 55.7%) of the study group and control group reported that their menstruation lasts for (4-5-days and 6-7-days) respectively which considered normal duration according to menstruation amount the highest percentage (n = 41; 58.6%) of the study group reported that their menstruation is mild. For the control group, highest percentage (n = 45; 64.3%) reported that their menstruation is moderate, also The findings of the study agree with this study the who reveals that more than three quarter of the studied sample (83.7%) had normal amount of the menstrual bleeding. Regarding to menstruation interval the result shows that highest percentage (n = 26; 37.1%) (n = 28; 40.0%) of the study group and control group reported that their menstruation interval is less than 28-days and 29-30-days respectively which considered as a normal interval. Regarding to history of PMS in the family more than one third (n = 26; 37.1%) of the study group reported that there is previous family history especially their mothers (n = 11; 42.3%), compared to the control group (n = 13; 18.6%), who reported that more than a half (n = 7; 53.8%) of sister experience PMS [12] [13] [14]. The findings of this study agree with the study Frequency, Intensity and Impact of Premenstrual Syndrome in Medical Students who mention that there are relationship between PMS and addressed reproductive factors which significantly associated risk factor was family history of PMS [15], this study agree with the study A Study to Evaluate the Effectiveness of Guided Imagery Technique in Alleviating Premenstrual Syndrome among First Year B.Sc. Nursing Students in Selected Nursing Colleges at Bangalore, indicated that majority of the students (43.3%) belongs to the non-oriental family history of premenstrual syndrome, also, indicated that Family history of PMS exerted a significant influence on the occurrence of premenstrual symptoms. PMS was detected in about (93%) of female students with a positive family history of PMS compared to (76%) without a family history of PMS (p=0.003) [16] [17].

Assessment of Practice toward PMS through the Period of the Program (Pre, Post Test) Table (3):-

The summary of the subjects responding at the items level that are done used the observed frequencies for the initial responding of questionnaire's items. The results reveals that all study items of students' practices about premenstrual syndrome are successful at the post period of time concerning study group, since significant differences are accounted in at least at ($p < 0.01$). The self-care regard study sample is used herb demonstration such as (cinnamon, chamomile, ginger, herb of Mariam, and mint). The findings of this study agree with study Self-Care Measures Regarding Premenstrual Syndrome among Female Nursing Students who reveals that self-care practice during PMS includes: correct and incorrect dietary changes of PMS; Supplementation of vitamins (Vit. B, Vit. E, Ca) Herbal cinnamon, mint, ginger, fenugreek, green-tea, chamomile Mind-Body Interaction; (yoga, hearing music, drawing, and hearing Quran); Manipulative and Body-based Methods (massage, exercises, warm shower, warm compress, more than one method). The herbal was the most common method that the subjects. The

four herbs used by the subjects in a descending percent were Cinnamon, Ginger, Mint, Green Tea, chamomile and fenugreek. These may be because traditionally use of herbs at Saudi so it become easy to use and most common available [12]. Also, the findings of this study agree with the study Studied Herbal Remedy used by Rural Adolescent girls with Menstrual Disorders which conducted from preparatory and secondary schools in rural village in El-behira governorate, Egypt. This study found that, (72.7%) of the study subjects had used herbal remedy for the treatment of premenstrual syndrome (PMS) [18]. Also, this study agree with the study found that only (9.5%) of the studied subjects used vitamins supplements. These study results may be due to the lake of students' knowledge about the importance of use vitamin supplements for managing PMS [12]. This study agree with the study Dietary B vitamin intake and incident premenstrual syndrome who discussing the "Dietary B vitamin intake and incident premenstrual syndrome" .They observed a significantly lower risk of PMS in women with high intakes of thiamine and riboflavin from food. In the current study the more than half of the subjects (62.9%) change their dietary practice, only (16.2%) reduced fat in their diet, while (4%) decreased coffee intake, salt was decreased by (6%) and species was reduced by (14%) of the subjects [19]. The study Knowledge and Practices of Female employee about Premenstrual Syndrome and its effect on daily life activities in El-Minia University who displays that, the most common used measures by the studied sample to overcome the premenstrual syndrome symptoms were; warm bathing, warm drinks, sports and activities, comfortable and rest period and medications (77.88%, 60.18%, 51.33%, 26.55%, & 24.78%) respectively [20].

The Values of the Study and Control Group Practices about Domains over Time Table (4):

The overall practices about domains over time for the study group noticeably increase by time for the study group (Pretest =10.54, Posttest II =13.98, Posttest II =14.43). For the control group, such values slightly decrease by time (Pretest =9.92, Posttest II =9.85, Posttest II =9.86)), the lack of practices in control group due to the effectiveness of the educational program for study group comes from the control group findings of no significant differences between pre and post PMS practices scores. As rational the overall practices of PMS had significantly increase practices and can help adolescent girls to decrees suffering of PMS and helping students to cover health-related issues and self-care management in future. The result of the study is in agreement with the study Very Heavy Menstrual Flow mention that the types of herbs used in management of PMS were fenugreek, peppermint and aniseed which were effective among almost all of the study subjects. Green tea, cinnamon and basil were moderately effective. The method that used mostly next to herb was prayer. Although the difference between pre and post intervention practice of the subjects regarding the use of vitamin supplementation, yoga, and art and music was statistically significant but the percent of increase was not effective. This result also agrees with a study A descriptive study to assess the premenstrual syndrome and coping behavior among nursing students, Nine, Pgimer, Chandigarh reported that a positive significant correlation between premenstrual syndrome and adjusting energy during preprogram implementation. This may be due to the students try to cope with their symptoms before educational program by having much sweet foots, practicing few exercise, avoiding socialization,

less concentration on needs of other, and using emotional verbalization. However at immediately post program implementation, premenstrual syndrome was negatively and significantly correlated with avoiding harm as well as awareness and acceptance of premenstrual changes. Moreover, premenstrual syndrome was positively and significantly correlated with self-care and communicating. Many other factors may have a role including environmental, psychological and personal factors, dietary changes, self-help, exercise, stress management and relaxation exercises. The study definitely proves that educating students regarding the causes of PMS symptoms, encouraging them to maintain a PMS symptom dairy, and advising some minor changes in their dietary pattern during the premenstrual phase and daily physical activity will be definitely useful in combating PMS [21] [22] [23].

Recommendations

-Encouraging female secondary school and university student to changing lifestyle interventions, exercises programs through special lessons during schooling day.

-The study recommended that health education programs regarding PMS and other menstrual problems could be included in the curriculum of secondary schools to bring down the prevalence of such problems.

-Establishing coordination between schools administrators and students families to enhance premenstrual syndrome follow up counseling among students, both at schools and home through periodic meeting.

- More school health interventions practices medical and health follow up for students to learn how to manage depression and decreasing the severity of symptoms.

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