The menstrual cycle is a normal physiological event in the lives of most women of reproductive age.(1) It does not disrupt women's lives.(2) A small percentage of women experience recurring menstrual-related problems, and some of these women find that those problems seriously affect their lives.(3) Premenstrual disorders affect many women across different cultures worldwide.(4) Premenstrual syndrome (PMS) can be defined as a set of physical, emotional, and behavioral symptoms that appears in the premenstrual phase and presents rapid resolution when menstruation begins.(1) The varied symptoms of PMS include mood swings, tension, anger, irritability, headache, bloating, and increased appetite with food cravings. These symptoms are sufficient to impair daily life and relationships.(5) These symptoms occur during the luteal phase of the menstrual cycle and resolve with the onset of menstruation or shortly afterward (wood et al, 2000). (6)

The cause of PMS is not known, but there are factors which are believed to play a part in causing the symptoms. Before a woman gets her period, levels of estrogen and progesterone fluctuate. This is believed to contribute to the symptoms that a woman feels each month.(7) Aside from hormonal changes, chemical changes may also be involved. Serotonin is a neurotransmitter, which is thought to affect the mood of a person. Premenstrual depression could result if there is an insufficient amount of serotonin in an individual.(8) Also, too much intake of salty food and caffeine may also play a role in PMS symptomatology. Aside from that, there may be an association of PMS among individuals who don’t have enough vitamins and minerals in their diet. (9)

There are no definitive tests to diagnose PMS, doctors would usually advise a woman to keep a record of her symptoms for at least two months, or two cycles. It is also important to note dates like when the symptoms started, and when it has also ended.(10) Since PMS cannot be prevented, the management is focused on relieving symptoms. Having a record of PMS symptomatology will help woman understand how PMS affects her physical and emotional health.(11) Knowing the symptoms can help because it allows for coping strategies, which can reduce stress and anxiety. (6)

In the Egyptian culture, it is not usual to visit obstetricians before marriage unless it is urgent and serious condition. (12) It is much accepted that young girls normally suffer during their period and theses pains indicates more feminine signs and it will ends all after marriage. Also the intimate and sensitive nature of menstrual disorders among adolescence girls in a predominantly socio religious environment would be expected and influence the reporting of PMS.(13) However, the impact of these socio cultural factors and the conservative life style on the symptomatology of PMS in the adolescence is unknown. This cultural background makes young ladies suffering in silence expecting that all what they are going through is normal experience and that they have to go through without telling any one.(14) Also, service provision in Egypt for this problem is unfocused and greatly varying among different medical schools. Treatment of PMS at present should depend on comprehensive, longitudinal evaluation with attention paid to the severity and time of appearance of symptoms, as well as to medical, social, and psychological factors that may affect symptom appearance.(11) Treatment may include social support, education, counseling, life-style changes and pharmacotherapy tailored to a patient's individual needs.(15) It is therefore important to investigate these issues further by exploring the effect of the awareness raising intervention program on PMS students' knowledge, self care practices and PMS symptomatology.

Aim of the study

The study was carried out to evaluate the effect of introducing awareness raising intervention program on PMS students' knowledge, self care practices and PMS symptomatology.

Material and Methods

Study design: This study was a quasi experimental design which was used to evaluate the effect of the awareness raising intervention program on student's suffering of PMS. Using non-equivalent intervention and control groups to avoid the pollution between the two groups, therefore the intervention and control groups were from the same faculties, the same academic year but from different universities.

Setting: The study was conducted at the Faculties of Nursing at MansouraUniversity and BanhaUniversity.

Subjects

 The study sample included second year nursing students with PMS at the above mentioned settings with the exclusion of those who are married or under hormonal treatment. The study sample included 200 students out of total number of 650 students in both sites, 100 students from each site. Those students suffered from PMS and did not expose to PMS topic in their education yet.

Inclusion criteria: To be classified as having PMS, students were required to meet the following criteria:

(1) Increase in symptom severity during the 5 days preceding menses compared with days 6-10 of the cycle

(2) Moderate-to-severe symptoms on at least 3 of the 6 premenstrual days

(3) A total of five or more symptoms premenstrual

(4) At least one moderate-to-severe emotional symptom

(5) Meeting criteria 1-4 for two menstrual cycles

Students were asked to complete the prospective Menstrual Symptoms Chart (MeReC, 2003)(16), for two passed cycle .

Analysis included days 6-10 of the post menses and days 5 to 1 of the pre menses. These days were selected to avoid any symptoms associated with menses or ovulation.

Tool of data collection

Data were collected using a structured interview questionnaire which composed of three main parts:

Part One: This part was developed by the researchers to assess student's age, residence and menstrual history, age of menarche, regularity, and length of menstruation and duration of menstrual cycle.

Part Two: This part aimed to assess PMS symptoms among students in both groups. Students were asked to rate 19 symptoms commonly found in PMS each on a lickert 3-points scale (1 mild, 2 moderate, 3 severe). The symptoms were categorized according to Abrahams 1983(16) into the following classification:

PMS-A (A=anxiety): most common category are Anxiety, Irritability, Mood swings and Nervous tension

PMS-C (C=carbohydrate craving): Appetite Increase, Headache, Fatigue, Dizziness or Fainting, Palpitations

PSM-D (D=depression): Depression, Crying, Forgetfulness, Confusion, Insomnia

PMS-H (H=hyper hydration): Fluid Retention, Weight Gain, Swollen Extremities, Abdominal bloating, Breast tenderness

Part three: This part focused on knowledge and self care practices regarding PMS symptomatology. It included questions which assess students general knowledge of menstruation, definition, signs and symptoms, definition of PMS, signs and symptoms, aggravating factors and self care practices which include using of pain relief, practicing regular sports, eating certain types of food and pattern of eating, drinking warm fluid, bathing with warm water.

Methods:

1. Approval from the coordinator of students' affairs was obtained to carry out the study in both Faculties.
2. The students in the two faculties were asked to join the study after explaining the study aims, the students with PMS who agreed to join the study were asked to sign a consent form prepared by the researchers.
3. Students who agreed to participate were divided into the intervention and control groups randomly, according to their sites.
4. Content validity of the tool was checked by a panel of three experts in Obstetric and Gynecology of Nursing and the correction was done accordingly based on their feedback.
5. A pilot study was carried out on 20 students not included in the study. The pilot study aimed at refining the questionnaire, to test the clarity of the tool and to asses the time needed for completing the questionnaire. The necessary modifications were done accordingly.
6. The questionnaires were distributed to students in the two sites at the same time, in one of their educational lecture (pre-test, two follow up post test) to get a 100% response.
7. The questionnaire first read by the researcher to ensure that the students understand all parts and there is no any difficult terminology as the questionnaire was used in English language. The average time for completing the questionnaire was 25 minutes.
8. The awareness raising intervention program was developed after reviewing the related literatures and the result of the pre test. The program was aimed to enhance students knowledge of PMS, improve students self care practices, and reduce symptoms and complains of students with PMS
9. Preparation of presentations in English form, brochures and leaflets
10. Target groups were the intervention group at MansouraUniversity and the control group after complete collecting of data, for ethical consideration.
11. The program was applied to the intervention group. It included 2 sessions, each session was for 2 hours long and handout leaflet was given to each student.
12. First session included definition, physiology and signs and symptoms of menstruation, definition of PMS, etiology, signs and symptoms, causes, exaggerator factors.
13. Second session included discuss of self care measures, dietary change, healthy food, benefits of regular exercises, importance of personal hygiene in alleviating PMS symptomatology.
14. Program evaluation : both intervention and control group were followed by doing one month post-test and three months post-test after the awareness raising intervention program to assess the efficacy of the program on PMS students' knowledge, self care practices, and PMS symptomatology. The same interview questionnaire used in the pre test assessment was used.
15. Data were collected during the period from February 2007 to June 2007.

Scoring system

1. A scoring system for PMS students' knowledge was adopted, as this part included two clusters of knowledge, General knowledge about menstruation and general knowledge about PMS. Each cluster contains true – false items, The students were asked to choose whether each item is true or false. The true item was equal 1 point while the false item was equal 0 point. Therefore a total of 15 points were allocated to the knowledge section.
2. A scoring system for PMS subscale and total PMS symptomatology score. This part was to assess PMS symptoms among students in both groups. The student asked to rate 19 symptoms commonly found in PMS, each on a 3-points lickert scale (1 mild, 2 moderate, 3 severe).

Statistical design

 Collected data were verified prior to computerized entry. The statistical package for social science (SPSS 15.0) was used for analyzing the data. Descriptive statistics were applied (e.g., number, percentage, mean, standard deviation). Tests of significance, Wilcoxon Signed Ranks test was used for paired comparison of pre-test and post-test within the same group . The Mann-Whitney Test was used for comparison of pre test and post tests between the study groups. All reported P values are two-tailed. A significant level value was considered when p<0.05.

Results

 Table (1) shows the distribution of the studied groups according to their age, residency and menstrual history. The table shows that the mean age was (18.9±.74) years for the control group and (19±.0 71) years for the intervention group. More than half of students in the study were from rural area. As regard menstrual history, among all study subjects, it appears that the mean age of menarche was (12.6 ± 2.86), the mean of the duration of students' menstrual cycle was (28.9 ± 5.37) and the mean of the length of menstrual flow, was (4.7±1.51) for the control and (4.8±1.57) for the intervention groups. It was noticed that 52% of the students in the control group had regular menstruation in relation to 49% from the intervention group. In conclusion, there were no significant differences between the two groups regarding age, residency and menstrual history.