Kap study – for pms among college students

Business

INTRODUCTION 1. 1.

Introduction: Women experience a lot of changes (symptoms) during their menstrual cycle, which markedly compromises their quality of life and ability to function, leading to higher direct medical costs for increased physician visits and laboratory tests, and higher indirect costs to employers through lower productivity at work. This group of symptoms form the Pre Menstrual Syndrome which varies in severity from person to person. Premenstrual syndrome (PMS) is a cyclic, complex, interactive disorder, which includes physical, emotional and behavioral symptoms. Premenstrual syndrome is characterized by mental and physical symptoms that vary with different phases of the menstrual cycle. Symptoms start shortly after ovulation, increase in severity, and reach a maximum during the last five premenstrual days. After the onset of menstrual bleeding, the symptoms rapidly disappear and are usually gone within three to four days.

Diagnostic procedures using prospective daily symptom ratings have recently been developed, allowing a more precise diagnosis of the cyclical mood changes and leading to a clearer picture and definition of the condition. Robinson et al. , 2000). Results from community studies show that the severity of the cyclical mood changes varies within a population of women of fertile age, from those having no cyclical mood changes to those severely handicapped by the symptoms for 14 days of the month. The severity assessment of subjective symptoms is difficult since severity is difficult to compare among individuals.

Premenstrual emotional and physical changes occur in nearly 80% of menstruating women. The symptoms vary from woman to woman and from cycle to cycle. Their intensity ranges from mild to incapacity. About 20% to 40% of women who have PMS experience symptoms that make life difficult and 2. 5% to 5% experience PMS that is debilitating.

PMS leads to substantial impairment in normal daily activities and occupational productivity among women and significantly increased work absenteeism. (Dean et al. , 2004). Dysmenorrhea interferes with their daily life activities and results in absenteeism between one to seven days. The prevalence of dysmenorrhea is 71% as shown by a study on the K.

A. P about dysmenorrhea and menstrual hygiene among adolescent girls in Tehran (Poureslemi 2000). Women under identify the severity of PMS difficulties and they are reluctant to seek help because of attitudinal barrier (Robinson 2000). The benefits of the PMS educational program employed in a study about the effects of educational programme on adolescents with PMS showed a decrease in the total PMS scores and a reduction in the experimental group's premenstrual symptoms of anxiety, water retention and craving. The schoolgirls in the experimental group reported less PMS symptoms 3 months after the educational program, while no significant changes were found in the control group.

Poureslemi 2000). Another study about the efficacy of self care measures shows that more than 90% of the women are affected by one or more symptoms of PMS and significant increase in self care measures resulted in reduction of symptoms (Kirkpatrick et al. , 1990). One goal in determining

economic impact of premenstrual conditions is to establish whether treatment of PMS would decrease healthcare utilization and improve worker performance, thus decreasing the burden of illness. Since the research showed that PMS was associated with greater absenteeism and decreased occupational performance and productivity, the actual cost to the individual woman and society was important to determine. (Kirkpatrick et al.

, 1990). One does not have to suffer the difficulty. Treatment and changes in life style can help reduce these symptoms. This study was aimed at reducing the burden of the problem among girls by intervening with a health education programme regarding the right symptomatic therapy and a healthy diet that will help overcome the problem. 1.

2. RESEARCH QUESTION: Will a health education session in the form of interactive lecture and educational pamphlets improve the knowledge, attitude and practice of 60 female undergraduate/post graduate students of Stella Maris College about premenstrual syndrome? 1. 3. OBJECTIVES: * To evaluate the knowledge, attitude and practice about premenstrual syndrome among female undergraduate students * To create awareness about practices, which might help reduce the suffering through health education. * To evaluate the effectiveness of intervention in increasing awareness 1.

4. Assumptions and Limitations Several assumptions and limitations pertain to this study. First, the study used a forced choice survey instrument. The instrument being a questionnaire indicates that the participants in the study could not state their view on the questions but had to select from the

answers already provided. This indicates that the survey need not necessarily indicate or represent the view of the participants of the study.

The second limitation of this study is that the size of the sample was small and was limited to a small sub sect of the students of the college. This indicates that there is no evidence that the sample in this study is typical of the broader population, even within the same college. The third limitation of this research is the fact that the collection of data took place at a particular point in time. It has been well established that the responses are governed by other factors outside the control of the researcher including setting, time of day, recent conflicts and fatigue of participants (Shell, 2001). 1. 5.

Description of research report The present research report is organized in to five major chapters. In Chapter one the concise background of the analytical problem and is discussed. In addition, the chapter also sets the aims and objectives, outlines research questions which are discussed through the course of the dissertation presentation. The chapter two reviews the literatures on the origins of green computing. The chapter also rationalizes the need of the hour for establishing solutions to the problems arising due to pre menstrual syndrome symptoms. In chapter three the research methodology is discussed.

This includes the research study design, data collection techniques, validation and reliability assurance of data. Chapter four of the report focuses on data analysis. The empirical survey findings are presented in the form of tables and figures along with the interpretation of the results in comparison with other studies. Chapter five of the report is the final chapter

and it gives the executive summary of the study, implications and further recommendation for future study. Chapter six of the report contains the bibliography section that is used in the study.

The study also has an appendix section which includes the questionnaire used for interviewing students of the case study. 1. 6. Conclusion As explained in this chapter, the study shall focus on the key determinants of solutions to symptoms of pre menstrual syndrome . The next chapter presents the literature reviewed for this study. REVIEW OF LITERATURE 2.

1. Introduction: Premenstrual syndrome (PMS), which occurs 7–14 days before the onset of menstruation and subsides with the commencement of menstrual flow, affects women during their reproductive age, and is associated with physical, psychological and behavioral changes. Premenstrual syndrome (PMS) affects millions of women during their reproductive years. Symptoms typically begin between the ages of 18 and 35 years (Reeder and Martin, 1987). Women who have severe affective symptoms may also meet criteria for premenstrual dysphoric disorder (PMDD).

In both PMS and PMDD, symptoms diminish rapidly with the onset of menses. (Steiner 2000). Up to 85 percent of menstruating women report having one or more premenstrual symptoms, and 2 to 10 percent report disabling, incapacitating symptoms. More than 200 symptoms have been associated with PMS, but irritability, tension, and dysphoria are the most prominent and consistently described. 2. 2.

EtiologyThe etiology of PMS remains unknown and may be complex and multifactorial. The role of ovarian hormones is unclear, but symptoms often improve when ovulation is suppressed. Changes in hormone levels may influence centrally acting neurotransmitters such as serotonin, but circulating sex hormone levels are typically normal in women with PMS. Genetic factors also seem to play a role, as the concordance rate is two times higher in monozygotic twins than in dizygotic twins(Freeman et al, 1997). Preliminary studies suggest that up to 40% of women with symptoms of PMS have a significant decline in their circulating serum levels of beta-endorphin. Beta endorphin is a naturally occurring opioid neurotransmitter which has an affinity for the same receptor that is accessed by heroin and other opiates.

Some researchers have noted similarities in symptom presentation between PMS symptoms and opiate withdrawal symptoms (Giannini et al, 1990). 2. 3. Diagnosis: There is no laboratory test or unique physical findings to verify the diagnosis of PMS. The three key features are: * The woman's chief complaint is one or more of the emotional symptoms associated with PMS (most typically irritability, tension, and/or unhappiness).

Symptoms appear predictably during the luteal (premenstrual) phase, reduce or disappear predictably shortly before or during menstruation, and remain absent during the follicular (pre-ovulatory) phase of the menstrual cycle. * The symptoms must be severe enough to disrupt or interfere with the woman's everyday life. To establish a pattern, a woman's physician may ask her to keep a prospective record of her symptoms on a calendar for at least two menstrual cycles. (Lori et al, 2003). 2.

4. Symptoms: More than 200 different symptoms have been associated with PMS, but the three most prominent symptoms are irritability, tension, and dysphoria (unhappiness). Common emotional and non-specific symptoms include stress, anxiety, difficulty in falling asleep (insomnia), headache, fatigue, mood swings, increased emotional sensitivity, and changes in libido. The presence of physical symptoms associated with the menstrual cycle, such as bloating, abdominal cramps, constipation, swelling or tenderness in the breasts, cyclic acne, and joint or muscle pain are also symptoms of PMS. (Johnson S 2000). The exact symptoms and their intensity vary from woman to woman and even from cycle to cycle.

Most women with premenstrual syndrome experience only a few of the possible symptoms, in a relatively predictable pattern. Under typical definitions, symptoms must be present at some point during the ten days immediately before the onset of menses, and must not be present for at least one week between the onset of menses and ovulation. Although the intensity of symptoms may vary somewhat, most definitions require that the woman's unique constellation of symptoms be present in multiple, consecutive cycles. Johnson S 2000). 2.

5. Risk Factors: Premenstrual syndrome (PMS) is reported in women in many cultures worldwide. About 80% of women in their reproductive years have some emotional and physical symptoms before their periods that impair daily activities. Between 3 – 8% of women report very severe symptoms, notably premenstrual dysphoric disorder (PMDD). A number of factors may put a woman at higher risk for PMS. Age: The risk for severe PMS is higher in younger women, and onset usually begins around the mid-twenties.

Some evidence suggests that PMS symptoms diminish after age 35. Naturally, PMS and any manifestation of it end at menopause. Psychological Factors: Women with a history of or susceptibility to depression may be at increased risk for PMS and premenstrual dysphoric disorder (PMDD). Cultural factors may also affect the perception and severity of PMS symptoms. Other Factors Associated with PMS: Studies have found some factors associated with a higher risk for PMS or more severe symptoms, (although the evidence behind these claims is not very strong): * Having a mother who had PMS Being sedentary * Stress * High-sugar diet * Consumption of large amounts of caffeine * Alcohol abuse (http://www.

umm.
edu/patiented/articles/how_premenstrual_syndrome_diagnosed_000079_3.
htm) 2. 6. Menstrual distress questionnaire: Moos developed the Menstrual Distress Questionnaire (MDQ) which categorizes 47 perimenstrual symptoms into eight scales including pain, water retention, negative affect, autonomic reaction, impaired concentration, behavioral change, arousal and control (Moos, R.

1968). Abraham modified Moos' MDQ and included only the 19 symptoms that were found to have the greatest changes premenstrually. Thus Abraham's Menstrual Symptom Questionnaire (MSQ) had four common subgroups of PMS: PMT-A consisting of behavior changes, PMT-H associated with symptoms of water and salt retention, PMT-C characterized by craving, and PMT-D includes symptoms of depression. (Abraham, 1983). The Premenstrual Assessment Form (PAF) developed by Halbreich et al.

(Halbreich et al. , 1982) comprises 95 symptoms which are grouped into premenstrual physical, mood and behavioral changes. Eighteen categories could be identified including major and minor depression, withdrawn, agitated/anxious, irritable, hostile, impulsive, increased well-being, general discomfort, water retention, fatigue, autonomic physical, impaired social functioning, and organic mental features. MOOS MDQ 2. 7.

Treatment: Dietary supplement: Dietary supplements that have been evaluated in women with PMS include vitamins (A, E, and B6), calcium, magnesium, multivitamin/mineral supplements, and evening primrose oil. Because most studies have been small or poorly designed, efficacy needs to be confirmed in large, well-designed clinical trials before evidence-based recommendations can be made. (Wyatt et al, 1999). Supplements of calcium carbonate in a dosage of 1, 200 mg per day for three menstrual cycles resulted in symptom improvement in 48 percent of women with PMS, compared with 30 percent of placebo-treated women (Thys-Jacobs et al, 1998). Herbal remedies: As many women experiencing symptoms of premenstrual syndrome (PMS) seek relief from natural products (NP), health care providers should have quality information available to aid women in making evidence-based decisions regarding use of these products. Since physical and emotional stress often times play a significant role in predisposing a woman to menstrual irregularities and a heightened irritability level, herbs with nutritive properties and specific components that support the cardiovascular and central nervous systems are welcome additions to herbs that primarily target hormones.

(Schulz et al. 1998). Evening primrose oil: Evening primrose oil, a prostaglandin precursor, has been studied in women with PMS, based on the theory of inadequate levels of prostaglandin E1. A systematic review of placebo-controlled trials of evening primrose oil suggested lack of benefit in PMS, although mild relief was demonstrated in women with breast tenderness. (Buderi et al, 1996).

Vitex agnus castus: The fruits of Vitex agnus castus (the chaste tree) contain a mixture of iridoids and flavonoids, and some compounds similar in structure to the sex hormones have been isolated from the leaves and flowers. Chasteberry contains a variety of active compounds that affect different aspects of the reproductive system and create a balancing, or normalizing, effect. The effects of agnus castus have been described as similar to those of the corpus luteum. Today, chasteberry is widely used and accepted in Europe as a treatment for female complaints such as PMS, dysmenorrhea, mastodynia (painful breast swelling), and menopause. Chasteberry appears to act directly on the pituitary gland to inhibit the secretion of follicle stimulating hormone (FSH) and promote the secretion of luteinizing hormone (LH). Clinical benefits of chasteberry were demonstrated in a 3-month randomized double-blind, placebo-controlled trial of 37 women with PMS.

Women receiving the chasteberry extract (20 mg/day) had a significant reduction in prolactin release compared to placebo, a significant average increase in the luteal phase of 5 days, an increase to normal levels of progesterone during the mid-luteal phase, and a decrease in PMS symptoms (Schellenberg 2001). Black cohosh: Black cohosh (Cimicifuga racemosa) is a

popular herbal remedy in Europe for treating a variety of female health problems, particularly PMS. The action of black cohosh is attributed to the synergy of the entire profile of its active components. These active constituents include the isoflavone (phytoestrogen) formononetin, triterpene glycosides including 27-deoxyactein, actein, racemoside, and cimicifugoside, as well as the aromatic acids ferulic acid and isoferulic acid. The clinical efficacy of black cohosh in treating women with symptoms of PMS has been demonstrated in 5 controlled studies comparing the extract with a placebo or with estrogen therapy. These research studies found that black cohosh extract, at doses of 80-160 mg/day, produced significant changes.

These results support the therapeutic efficacy of black cohosh extract for PMS symptoms women (Hobbs, 1996). Crocus sativus: Saffron is a spice derived from the flower of the saffron crocus (Crocus sativus), a species of crocus in the Iridaceae. Saffron contains more than 150 volatile and aroma-yielding compounds. It also has many nonvolatile active components, many of which are carotenoids, including zeaxanthin, lycopene, and various ? – and ? -carotenes (Fikrat , 2000). A Double-blind, randomised trial was conducted by the departments of Gynaecology/Obstetrics and Psychiatry, Tehran and Zanjan University of Medical Sciences.

Women aged 20-45 years with regular menstrual cycles and experience of PMS symptoms for at least 6 months were eligible for the study. Women were randomly assigned to receive capsule saffron 30 mg/day (15 mg twice a day; morning and evening) (group A) or mix of saffrom in milk twice a day for two menstrual cycles. The primary outcome measure was the Daily Symptom Report, and secondary outcome measure was the Hamilton

Depression Rating Scale. In this trial, saffron was found to be effective in relieving symptoms of PMS. A significant difference was observed in efficacy of saffron in cycles 3 and 4 in the Total Premenstrual Daily Symptoms and Hamilton Depression Rating Scale. The results of this study indicate the efficacy of C.

sativus L. in the treatment of PMS. However, a tolerable adverse effects profile of saffron may well confirm the application of saffron as an alternative treatment for PMS (Agha-Hosseini et al, 2008). Exercise: Many women of reproductive age experience PMS. Exercise has been proposed as a potential treatment in this regard, and several observational studies have reported a reduction in PMS and associated symptomatology in physically active women relative to their less active counterparts.

There is a paucity of research on the effects of exercise on PMS. Although the American College of Obstetricians and Gynecologists (ACOG) has advised that regular aerobic exercise may help relieve PMS, to make any evidence-based policy recommendations regarding the effectiveness of exercise, more high-quality research is required. The effects of aerobic exercise and strength training on premenstrual symptoms were evaluated in 23 healthy premenopausal women. Premenstrual symptoms were assessed at baseline and following 3 months of exercise participation. Women who engaged in aerobic exercise significantly increased their aerobic capacity, while the women who participated in non-aerobic exercise did not.

Results showed that while participation in both exercise conditions was associated with general improvement in many premenstrual symptoms,

subjects in the aerobic exercise group improved on more symptoms, especially premenstrual depression. Steege et al, 1993). Table 2. 1: Common herbs used in treatment of PMS (MAYO, 1998). Figure 2.

1. : Herbal remedies used in treatment of PMS 2. 8. KAP study: KAP studies are highly focused evaluations that measure changes in human knowledge, attitudes and practices in response to a specific intervention, usually outreach, demonstration or education. KAP studies have been widely used and valued around the world for at least forty years in public health, water supply and sanitation, family planning, education and other programs.

National governments, nongovernmental groups, United Nations agencies and the World Bank use KAP evaluation methods. KAP studies are more cost-effective and resource conserving than other social research methods because they are highly focused and limited in scope. KAP studies tell us what people know about certain things, how they feel, and how they behave. Each KAP study is unique to a particular setting and designed for a specific issue. Whereas social surveys may cover a wide range of social values and activities, KAP studies focus specifically on the knowledge, attitudes and practices (behaviors) for a certain topic. The Knowledge possessed by a community refers to their understanding of that topic.

• Attitude refers to their feelings toward this subject, as well as any preconceived ideas they may have towards it. • Practice refers to the ways in which they demonstrate their knowledge and attitudes through their actions. Understanding these three dimensions will allow a project to track changes in them over time, and may enable the project to tailor activities to

the needs of that community. KAP should be conducted twice, both pre- and post-intervention, in order to measure impact. http://files.

dnr. state. mn. us/assistance/grants/community/6kap_summary. pdf) 2.

9. Steps in Preparation of a KAP- PMS Questionnaire 1. Domain identification: For the purposes of a premenstrual syndrome project, the general domain areas are PMS syndrome and premenstrual dysphoric disorder. More specifically, the domain will be the Knowledge, Attitude and Practices of the population with regard to these two diseases 2. Question preparation: Questions should be prepared to test all three areas of the study, Knowledge, Attitude, and Practices.

Questions included in the Knowledge section should be designed to test the knowledge of respondents on PMS and PMDD. Questions should cover the following topics: · Epidemiology · Symptoms · Diagnosis · Treatment options · Risk factors · Treatment options Questions included in the Attitude section should be designed to gauge the prevailing attitudes, beliefs and misconceptions in the population about these diseases. Questions included in the Practice section should be designed to assess the practices of the population with regard to these two diseases. 3. Validation of questionsOnce the questions for the study are prepared they must be validated. This validation should be aimed at assessing their ease of comprehension, relevance to their intended topics, effectiveness in providing useful information, and the degree to which the questions are interpreted and understood by different individuals.

2. 10. Conducting a KAP Study The first step in conducting a KAP study is the selection of the sample to which the survey will be given. The sample should be sufficiently large so as to represent the population without being so large that the data collection and analysis is prohibitively difficult. In choosing a sample size be careful to take into account that some of those selected may be difficult or impossible to contact, or unwilling to participate in the study.

The survey should then be conducted and the data collected. A standard method for conducting the survey should be decided upon in advance, and should be consistent for each category surveyed so as to ensure that differences in the result are independent of the sampling method and depend solely on the characteristics of the population in question. Sampling methods include interviews, either in person or on the telephone, and distribution of the questionnaire by mail. After collection, the data should be analyzed to determine the KAP level of the community. Once the data has been collected and analyzed it should be presented in a report that can then be distributed to other interested parties. (Kaliyaperumal, 2000) 2.

11. Education programme: Although the etiology of PMS is uncertain, a major emphasis in the treatment, apart from pharmaceutics management, is educating women to practice self-care measures to reduce the severity of symptoms. In studies that examined the effects of educational programmes, the findings reflected a significant improvement in the outcome measures. (Kirkpatrick et al. , 1990). Seideman studied the effect of an education program on premenstrual symptomatology on 47 women (= 33.

6 years) employed in an industrial setting. The results showed a significantly reduced occurrence of anxiety and craving symptoms among subjects in the experimental group as well as a significant decrease in the severity of edema symptoms (Seideman, 1990) In another study, Kirkpatrick et al. valuated the efficacy of education interventions in raising the number of self-care measures practiced by the 84 women (= 33. 5 years) and the alterations in the symptoms of PMS. A significant increase in the self-care measures was found post-test among both experimental groups and a significant decrease was found in relation to the total PMS scores of one of the experimental groups (Kirkpatrick et al. , 1990).

However, in determining the effectiveness of the proposed self-care measures, most studies have focused on the efficacy of a single intervention for the relief of PMS. Examples include cognitive-behavioral therapy, relaxation response and nutritional intervention. Few attempts have been made to study the effectiveness of a combination of self-care measures on helping women with PMS and most of these studies recruited adult women as the major participants (Kirkpatrick et al. , 1990). Nowadays, there is more effort in evaluating education programs in terms of improvement in individuals' health status including physical and psychological well-being. A major goal in health education is also to promote better health.

Some scholars argue that when PMS in youth is ignored, it can cause an impact on their health and quality of life. Thus improvements in physical and psychological well-being were the main concerns of the educational programme and were evaluated as longer-term goals. (Halas, 1987). 2. 12.

Conclusion: This review of literature has given a summary of the solutions to pre menstrual syndrome symptoms. Chapter three describes the methodology that is used for this study. A review of the study's purpose and research questions is presented, followed by an outline of the research design. The survey instrument used for the study is evaluated. The procedures for data collection and analysis are also presented.

METHODOLOGY 4. 1. Introduction: Methodology can be defined as " The analysis of, the rationale for, the particular methods or methods used in a given study" (Feinberg et al. , 2000). This chapter looks at the method used by the researcher for the purpose of the dissertation.

The factors of this research methodology has been influenced by the aims and objectives indicated in the introduction of the report. The chapter details the research design taken up in the study, the research questions and the hypothesis statement. It also discusses the data collection and data analysis procedures. 3. 2. Hypotheses formulation The following hypotheses were formulated and tested: * Students who receive the educational program on PMS will demonstrate a reduction in total PMS symptoms as compared to a group of students who do not receive the educational program.

* Students who receive the educational program on PMS will demonstrate an increase in knowledge about PMS and related self-care strategies after the educational program. . 3. Experimental design * An experimental pre-test–post-test control group design was used to determine the efficacy of a PMS educational program. * There was one experimental group and one control group.

* The experimental subjects received an educational session and a brochure on PMS and related self-care measures. * The control group subjects received the same educational sessions after the collection of post-test data. Both groups completed pre- and post-tests questionnaire. (Appendix I and II)

3. 4. Procedure Study Setting: Stella Maris College, Mylapore, Chennai.

Study Population: 60 undergraduate/post graduate students were selected. * 30 students in the experimental group attended the teaching session and the pre-test and post-test questionnaires. The mobile numbers and/or the email id of the experimental group students were collected during the pre test. * They were requested to answer the follow up questionnaire after a period of 45 days. * 30 students in the control group completed both the questionnaires and the same education intervention was offered to all the students interested after completion of the study.

Selection of students for control or experimental group: The students were selected for either control or for experimental group based on their roll numbers. * Those who had odd numbers were selected for control group and those who had even numbers were selected for experimental group. * Thus a random design of selection was employed. Ethical consideration: The procedure of the study was clearly explained to all the students. They were also asked to sign a statement of consent. (Appendix III).

3. 5. Data collection Designing the questionnaire Pretest questionnaire: * A modified version of the Abraham's MSQ was used to assess PMS. The students were asked to rate 16 symptoms commonly found in PMS on a four-point scale with responses ranging from: 0 = no effect; 1 = mild, present; 2

= moderate; and 3 = severe disabling with regard to the degree of interference and disruption to usual family, school and social activities. * Three subscales to categorize the symptoms into: * PMT-A, for behavioral changes; * PMT-C, manifestations of craving; * and PMT-D, characterizing depression.

* These items were for the purpose of distinguishing between menstrual and premenstrual symptoms. Subjects were also tested on their knowledge of the disease, its risk factors and its effects on their social life. * The Premenstrual Syndrome Knowledge Questionnaire section was used to measure the students' knowledge regarding PMS and related self-care strategies. * It was used primarily as an outcome measure to demonstrate one aspect of intervention efficacy in increasing the knowledge of the subjects. (Appendix I). Post-test questionnaire: * The post test questionnaire was similar to the pretest questionnaire with a few modified elements.

The Abraham's MSQ was included to compare the pretest and post test scores. The Knowledge questions were also included to see if the intervention has made an impact. * There was a section included on the different types of self-treatment strategies which were suggested during the intervention. This was used to determine which method served most effective. (Appendix II). 3.

6. Intervention: * A health education package was designed and reviewed by a gynecologist. The development of the educational package was based on an extensive review of the literature. Material relating to self-care strategies to relieve the symptoms of PMS was selected from available materials

developed in other research projects such as `Total Dietary Programs for Premenstrual Syndrome' by Haid and Abraham (Haid and Abraham, 1992) and `Premenstrual Blues' by Abraham (Abraham, 1991). * The objective and content of the educational intervention had the following highlights: * Introduce PMS, and discuss how it can have both physical and psychological effects. * Provide a summary of prevalence of PMS symptoms among students.

Provide information on different categories of PMS symptoms and their impact on various aspects of life. * Discuss relationship between stress and PMS. * Discuss self-care measures related to dietary change. * State the importance and benefits of regular exercise. * Following the intervention, the students were given a brochure which contained the different self care methods they could follow to reduce the symptoms of PMS. (Appendix 1V).

3. 7. Data collection procedures: Experimental group: Before the first education session began, each student was asked to complete the pre-test questionnaire. The actual intervention sessions were carried out in the form of a PowerPoint presentation and took place after college hours. This intervention lasted for about 30 mins.

They were then given an information brochure and asked to come back for a follow up session after 45 days. Control group: The students in the control group were invited to complete the pre-test and post test questionnaires . The same education sessions were offered to all the students interested. Data analysis: The following software were used for analyses of the collected data: 1. Epiinfo, Version 3. 1.

(CDC, USA) was used for creation of charts, pie diagrams and graphs 2. Epiinfo, Version 3. 1. 5 (CDC, USA) was used for calculation of Mean, Standard deviation(SD) 3. Unpaired t test was carried out using graphpad's free online quick statistical calculator.

4. The paired t –test (for comparing the pre and post test scores) was carried out using graphpad's free online quick statistical calculator (http://www. graphpad. com/quickcalcs/index. cfm) 5.

The BMI was calculated using the BMI calculator prescribed by the National Institute of Health, USA. (http://www. hlbisupport. com/bmi/) 3. 8.

Summary As this chapter has argued, the research methodology that is most suited for this study involves both a quantitative, deductive one as well as qualitative research. The next chapter will present the results of the questionnaires handed out to the students as well as give suggested results based on the qualitative analysis thereby presenting the study's findings on the basis of these results. RESULTS 4. 1. Introduction: This chapter presents a summary of the findings, followed by analysis and discussion of the study's results. The results are studied with relation to the statement of the problem, purpose of the research, and the research question.

4. 2. Demographic profile: * The mean age of all 50 students in the study was 20. 2 years with a minimum age of 18 and maximum age of 25 years. The majority of the students were undergraduates. * All students reported that the duration of their menstrual cycle was from 21 to 40 days (= 30.

2, SD = 3. 86) and that the length of menstrual flow for the most recent cycle was from 3 to 8 days (= 5. 56, SD = 1. 14). * The height of students in both groups ranged from 155 to 180 cm (= 159.

54, SD = 6. 1) and weight ranged from 50 to 75 kg (= 47. 59, SD = 6. 96). The height and weight of the students were converted to a single unit of measurement [body mass index (BMI)] and was also used for subsequent analyses. The mean BMI was 20.

45 (SD = 2. 93) for the experimental group and 20. 33 (SD = 2. 59) for the control group, with a range of 14. 1–28. 9.

Table 4. 1 : Demographic profile SNo| Demographic profile| Mean| Standard deviation| 1| Age| 20. 8 | | 2| Duration of menstrual cycle| 30. 3| 3. 86| 3| Length of menstrual flow| 5. 56| 1.

14| 4| Height| 159. 54| 6. 41| 5| Weight| 47. 59| 6. 96| 6| BMI| 20.

45| 2. 93| . 3. Effectiveness of the educational program: Group comparability: Comparisons were made between experimental and control groups to detect any significant group differences on baseline demographic characteristics and other variables being studied. The experimental and control groups were compared for differences in the incidence and severity of premenstrual symptoms. Table 4.

2 : Comparison of PMS-A symptoms between control and experimental groups : Group| Control group| Experimental group| Mean| 5. 30| 5. 12| SD| 2. 56| 2. 37| SEM| 0. 474| 0.

512| N| 25| 25| | | | Calculated values: Calculated t value = 0. 2580Degree of freedom = 48 P value and statistical significance: The two tailed P value equals 0. 7975 By conventional criteria the difference is considered to be not statistically significant. Table 4. 3. : Comparison of PMS-D symptoms between control and experimental groups : Group| Control group| Experimental group| Mean| 5.

45| 5. 20| SD| 2. 12| 2. 40| SEM| 0. 424| 0.

480| N| 25| 25| | | | Calculated values: Calculated t value = 0. 3904 Degree of freedom = 48 P value and statistical significance: The two tailed P value equals 0. 6980 By conventional criteria the difference is considered to be not statistically significant. Table 4. 4 : Comparison of PMS-C symptoms between control and experimental groups : Group| Control group| Experimental group| Mean| 5.

3200 | 5. 4400| SD| 2. 1200 | 2. 3600| SEM| 0. 4240 | 0.

4720| N| 25| 25| | | | Calculated values: Calculated t value = 0. 1891 Degree of freedom = 48 Level of significance = 95% P value and statistical significance: The two tailed P value equals 0. 8508 By conventional criteria the difference is considered to be not statistically significant. Results indicated no significant group differences when the the three PMT subscale scores and were compared. 4.

5. Change in attitude of students Work capacity: PMS leads to substantial impairment in normal daily activities and occupational productivity among women and significantly increased work absenteeism. (Dean et al. , 2004).

The suggested means of self-care during PMS did bring down the inability of students to work during PMS.

However this decrease was not found to be significant. Figure 4. 1. : Ability to work during PMS – before and after the intervention Measures to relieve pain: At the end of the educational intervention most students accepted that medication would help relieve the pain during PMS. Figure 4.

2. : Change in attitude of students over medication to reduce pain before and after the intervention 4. 6. Effect on the PMS distress questionnaire: The three subscale scores of the experimental group showed significant post-test differences. Table 4. 5.

: Comparison of PMS-A symptoms before and after the educational intervention: Test| Pre test| Post test| Mean| 5. 12| 4. 20| SD| 2. 37| 2. 40| SEM| 0.

47| 0. 48| N| 25| 25| | | | Calculated values: Calculated t value = 2. 4323 Degree of freedom = 24 Level of significance = 95% Table t value = 2. 064 P value and statistical significance: The two tailed P value equals 0. 0228.

By conventional criteria the difference is considered to be statistically significant. Table 4. 6. : Comparison of PMS-D symptoms before and after the educational intervention: Test| Pre test| Post test| Mean| 5. 20| 4.

20| SD| 2. 40| 2. 36| SEM| 0. 48| 0. 47| N| 25| 25| | | | Calculated values: Calculated t value = 2. 820 Degree of freedom = 24 Level of significance = 95% Table t value = 2.

064 P value and statistical significance: The two tailed P value equals 0. 0095. By conventional criteria the difference is considered to be very statistically significant. Table 4. 7. : Comparison of PMS-C symptoms before and after the educational intervention: Test| Pre test| Post test| Mean| 5.

44| 3. 92| SD| 2. 36| 2. 50| SEM| 0. 47| 0.

50| N| 25| 25| | | | Calculated values: Calculated t value = 3. 2950 Degree of freedom = 24 Level of significance = 95% Table t value = 2. 064 P value and statistical significance: The two tailed P value equals 0. 0024. By conventional criteria the difference is considered to be very statistically significant.

As shown in above tables the three subscale scores of the experimental group showed significant pre and post-test differences. There was significant difference with regard to PMS- C and PMS-D. There was some difference observed in the PMS-A symptoms but not as significant as the other two. Effect of exercise: * The types of exercise commonly performed by the study population were categorized into light, moderate and heavy. * Exercise commonly performed included: light exercise (40%) such as walking, sit-ups, press ups; moderate level of exercises (30%) included volleyball, badminton, cycling, dancing; heavy exercise (10%) included jogging or playing tennis (20%) of students indicated that they did not perform any regular exercise at all. * For those schoolgirls who did perform exercise, the average length of exercise was approximately 1 h per week (= 59.

65 min, SD = 60. 12). Figure 4. 3: Effect of Exercise Effect of alternative medicine: * Most students welcomed the use of alternative medicine as a

treatment option. * Majority of the students preferred to using saffron in milk (65%) as a treatment option over infusion of chaste berry (20%). This can be attributed to easier availability of saffron in comparison to chaste berry.

Also most students (75%) felt that the decrease in pain and other symptoms was due to eating healthy and exercise more than the herbal remedies. Figure 4. 4: Effect of Herbal remedies Summary: This chapter gives a summation of all the results obtained in the study. DISCUSSION 6. 1. Discussion of results: The benefits of the PMS educational program employed in this study provide support for the use of a multifactoral approach to interventions where biological and psychosocial factors were addressed within the program.

The students in the experimental group reported less PMS symptoms 45 days after the educational program, while no significant changes were found in the control group. Group comparability and similarity were established using the pre-test scores of both experimental and control groups to improve the effectiveness of the control in the research design . Thus it could be claimed that the reduction in PMS scores was not due to natural changes which might have affected both conditions equally, but is most likely due to the treatment effect. The significant increase in the pre and post knowledge test scores indicates that the educational intervention has been vital in improving the knowledge of the students in the problems and self care methods of PMS. Additional support for the benefits of the educational program for the experimental group comes from the control group findings of no significant differences between pre- and post-test total PMS scores, all four PMT subscale scores, and menstrual pain scores. This supports previous

findings that the incidence of premenstrual and menstrual symptoms is quite stable.

The positive outcome of the study was evident by the significantly reduced numbers of negative comments about the impact of PMS symptoms on work capacity and absenteeism. The The positive findings of the present study are consistent with the assumption that education programs benefit individuals with PMS. The importance of education in the management of PMS, which has been well documented (O'Brien, 1982), was supported by the positive outcomes in this study. The findings that the educational program had positive effects on premenstrual symptoms of anxiety, depression and craving are consistent with the findings of Seideman (Seideman, 1990). . 2.

Limitations of the study: The use of a convenience sample in this study also limits the ability to generalize the findings. An additional limitation in this study is that the self-care behavior of the students before and after the educational program was not measured. It would be helpful to have a measure of self-care to provide baseline information and to help in identifying behavioral changes after the educational program. 6. 3.

Implications and recommendations for further research It is encouraging that positive outcomes were found even though minimum interventions were delivered to students. Further investigation using longitudinal studies with continual assessment and evaluation of education interventions for girls with PMS would be of great value in primary health promotion. A lack of general knowledge related to menstruation as reflected in the findings and reviewed by students themselves indicates a need to extend the education. More

effective and appropriate interventions to help students manage symptoms of depression and menstrual pain should be incorporated in further programs. REFERENCES 1. Abraham, G.

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any questions you don't wish to answer at any time. Confidentiality: Only the principal researcher will have access to the results associated with your identity. In the event of publication of this study no personally identifying information will be disclosed. Who to Contact with Questions: Questions about this study should be directed to the primary investigator. STATEMENT OF CONSENT: I have reviewed the evaluation design outlined above and have had any questions I have about the evaluation answered to my satisfaction. I understand that my participation is voluntary and that I can withdraw from the evaluation at any time without prejudice. I ACKNOWLEDGE THAT I HAVE READ THE ABOVE EXPLANATION OF THIS EVALUATION THAT ALL OF MY QUESTIONS HAVE BEEN