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Abstract

This experimental study was designed to compare the relief of Premenstrual Syndrome (PMS) symptoms of women between the ages of 18 to 40. The experimental group was asked to follow a nonmedical PMS Intervention Program one week prior to and during their menstrual cycle. The researcher hypothesized that there would be no significant difference in PMS symptoms between women who participated in the treatment and women who did not participate in the treatment.

A researcher-designed survey which consisted of the Menstrual Symptomatology Fact Sheet (MSFS) and the Menstrual Symptomatology Questionnaire (MSQ) was administered to 35 women who reported PMS symptoms and achieved a score of 46 or above on the MSQ.

To test the null hypothesis, the t test was used on pre-MSQ, post-MSQ, and change in MSQ scores. Since there was a significant difference in change in MSQ scores, the null hypothesis was rejected. The researcher concluded that a nonmedical intervention program could decrease PMS symptoms in women.

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Chapter I

The Research Problem

Premenstrual Syndrome (PMS) is a complex of symptoms occurring during the perimenstrum that alters physical and psychological health (Jones, Cox, Levy, & Thompson, 1984). PMS affects a significant proportion of the female population (Dalton, 1977; Hanna, 1980). Possibly up to 12 million adult American women may suffer from moderate to severe forms of PMS (Abraham, 1980a). Up to 90% of all women of childbearing age are affected by PMS, and as many as 40% suffer so severely that it interferes with the quality of their lives (Simmons, 1983).

An estimated 140 million work hours at a cost of billions of dollars are lost in the United States each year because of menstrual discomfort (Kistner, 1982; Reid & Yen, 1981). As the role of women in the work force becomes increasingly significant, the impact of PMS on absenteeism and work inefficiency has become a significant issue. Even so, women with PMS have received little attention from either the medical or the nursing community (Field & Frunke, 1976; Hanna, 1980; Swaffield, 1980).

The focus of this study is on the effects of a non-medical intervention program to relieve symptoms associated

with PMS. The nonmedical intervention program subsumes three variables which are a combination of relaxation, diet, and exercise therapy. Concurrently, the multidimensional nature of PMS is determined by its classification as mild, moderate, or severe.

The problem of PMS can be traced to ancient times. PMS treatments have been recorded throughout history. The ancient Hindus in 1200-600 B.C. advocated rubbing oil or ghee on the pubis and distending the vagina with a roll of cloth. The early Romans used herbs, specifically asparagus root to relieve menstrual pain. The Chinese shaped pulverized wormwood into small cones and placed them on a slice of ginger. This was placed on a specific area of the abdomen, ignited and left to burn down to the skin (Pickles, 1979).

The multiplicity of associated symptoms and elusive etiology of PMS made identification of the syndrome difficult; therefore, there exists lack of satisfactory treatment. Recognition of PMS as a medical problem did not occur until the 1930s. Frank (1931) has been credited with the first scientific findings delineating PMS as a life span event of women. His finding increased scientific interest in this female maladaptation. Identification of symptoms that are included within the syndrome have only recently been substantiated. This delay is likely due to the reluctance of women in past decades to discuss their

menstrual problems with their physicians, who were predominantly male. However, for the most part, physicians did not seriously consider such difficulties to be medical problems, but rather a fact of the female condition or at best indicative of a psychosexual maladjustment (Rose & Abplanalp, 1983).

In the 1920s the cause of PMS was related to personality factors of women, but the past few decades have witnessed a striking revolution in social mores and attitudes toward sexual function. These social changes have allowed more open discussions of all aspects of human reproduction, including the menstrual cycle (Rose & Abplanalp, 1983). Consequently, a more accurate description of PMS symptomatology became possible.

The wide range of somatic and psychic symptoms which characterize PMS is person-specific. All women with the syndrome do not exhibit the same pattern of symptoms. Dalton (1977) identified over 60 major symptoms of PMS which ranged from headache to depression and irritability. Yet over the past 50 years approximately 150 signs and symptoms have been noted in the literature as related to PMS (Abraham, 1980a).

Various theories have been developed to explain the cause(s) of PMS (Abraham, 1980a; Frank, 1931; Reid & Yen, 1981). These theoretical positions range from the "raging hormone" stereotype misperceptions of women as irrational

beings to the somatic etiologic position of a hypothalamic-pituitary-ovarian axis aberration. Although it is generally accepted that the primary etiology is somatic with secondary psychic symptoms, a cohesive pathophysiologic formulation of PMS has not been established (Dalton, 1977; Parker, 1960; Reid & Yen, 1981).

Treatment regimens are as diverse as the postulated causes of PMS. Prior to the 1930s, treatment usually consisted of advising women that they needed to "pull themselves together" or to see a psychiatrist because of their servitude to those "raging hormones" (Reid & Yen, 1981). Later the primary focus of PMS treatment focused on finding an effective medication. Drug therapies ranging from aspirin to oral contraceptives were utilized but none proved successful primarily due to numerous adverse effects of the drugs. Today, the use of tranquilizers to control psychic manifestations and diuretics to alleviate generalized fluid retention have become accepted treatments (Abraham, 1980b; Field & Frunke, 1976; Reid & Yen, 1981). Also, progesterone hormone in suppository form is recommended for PMS treatment by Dalton (1977).

A limited number of studies have reported varied results using nonmedical intervention. Some of the nonmedical interventions include a dietary adjustment, a vitamin therapy program, counseling, and an exercise regimen. These nonmedical interventions were used as a

separate entity with a minimal success rate. However, no studies were reported that used a combination of these therapies (Chihal, 1982; Hanna, 1980; Norris, 1983; London, 1983).

The interventions of PMS are of much interest to this researcher because of personal experience with an unsuccessful medical treatment in hopes of relieving the symptoms of PMS. Not only was the treatment unsuccessful in relieving the symptoms, but side effects occurred due to the drug taken by the researcher. Also, as a health care professional working in an obstetric/gynecology service, this researcher has given nursing care to numerous women suffering from PMS. Because medical treatment was unsuccessful, this researcher has observed the devastating effects of PMS.

PMS is significant to the Family Nurse Clinician (FNC) whose practice may include clients who are suffering from PMS. The FNC is in a unique position to intervene effectively with the potential and recognized effects of PMS. Often times, the FNC functions in the ambulatory setting, in communities, in educational settings, and perhaps is the first person to come in contact with the PMS client. Also, the FNC is concerned for the health of women and their multiple roles in contemporary society, such as employees, professionals, wives, mothers, and community leaders.

There exists a biopsychosocial maladaptation secondary to PMS in which there is lack of a single or specific intervention or remedy to decrease or alleviate the symptoms associated with PMS. It appears that treatment must be individualized in which physiological as well as psychosocial interventions may be required (Reid & Yen, 1981).

The purpose of this study was to evaluate the effectiveness of a nonmedical PMS intervention program. The question to be answered was, "Does a nonmedical program involving a combination of an exercise program, a diet plan, and relaxation techniques relieve and/or alleviate PMS symptoms"?

Chapter II

Theoretical Framework

The theoretical basis for this study is Roy's adaptation model. Roy's adaptation model (1976) views man as a biopsychosocial being who faces problems in an unpredictable environment through adaptive mechanisms. Problems develop when the adaptive mechanisms of man are incapable of providing the biopsychosocial needs necessary for sustaining well-being.

The adaptation of man is dependent on his adaptation level and is a function of the stimulus with which man is involved. The adaptation level is determined by the pooled effect of three classes of stimuli, such as focal stimuli which immediately confronts the person. In this study, premenstrual syndrome is considered as focal stimuli. Contextual stimuli are all other stimuli present. In this study, nursing or nonmedical interventions, such as diet, exercise, and relaxation therapy, are considered the contextual stimuli. Residual stimuli includes beliefs, experiences, attitudes, and traits which have an immeasurable effect on the present situation, such as client's negative and positive attitudes about certain diets, beliefs about exercise and relaxation therapy,

cultural background, age, educational level, and race (Riehl & Roy, 1980).

Roy (1976) views man as a biopsychosocial being and describes man as being composed of four adaptive modes necessary for adapting to stimuli. These modes are physiological needs, self-concept, role function, and interdependence. The stimuli of Premenstrual Syndrome (PMS) requires adaptation to physiological needs.

Roy's (1976) particular classification of physiological needs stems from observation of man's attempts to cope with internal and external changes. Women who suffer from PMS undergo internal manifestations in which numerous external modalities have been tried to decrease these manifestations. Roy further views a physiological need as a requirement within the individual which stimulates a response to maintain integrity.

The physiologic adaptive mode, then, has as its basis man's need for physiological integrity. Roy subdivides this mode according to the following types of physiological needs: exercise and rest, nutrition, elimination, fluid and electrolytes, oxygen, circulation, and regulation, including temperature, the senses, and the endocrine system. The woman who suffers from PMS is often faced with the inability to cope with need deficits and excesses in the realm of exercise, rest, and nutrition (Riehl & Roy, 1980). The framework for this study is developed from the concepts

mentioned which set out to determine whether diet, exercise, and relaxation therapy assist women to adapt to the stimuli of PMS.

Chapter III

Hypothesis

Theoretical Null Hypothesis

There will be no significant difference in Premenstrual Syndrome (PMS) symptoms among women who follow a PMS Intervention Program and women who do not follow a PMS Intervention Program.

Definition of Terms

Significant difference: at the .05 level using the t test.

Women: females between the ages of 18 and 40.

Premenstrual Syndrome (PMS) symptoms: symptoms identified on the Menstrual Symptomatology Questionnaire (MSQ) (Abraham, 1980b).

PMS Intervention Program: a schedule consisting of a diet plan, an exercise program, and relaxation techniques.

Operational Hypothesis

When women between the ages of 18 and 40 who have followed a researcher-designed program of diet, exercise, and relaxation for one week prior to and during menses complete the Menstrual History Questionnaire, and the

results are compared by the *t* test to scores of women not participating in the program, there will be no difference at the .05 level of significance.

Chapter IV

Review of Literature

There is an increasing awareness of Premenstrual Syndrome (PMS) among consumers, clinicians, and other health care personnel that has resulted in closer examination of PMS symptomatology (Gonzalez, 1981). A voluminous amount of research has been accomplished in the area of drug therapy in hopes of alleviating the discomfort and pain associated with PMS. However, limited research has been done concerning the effect of diet, exercise, and relaxation therapy used concurrently as a multidimensional approach to relieve the discomfort and pain associated with PMS. This selected review of literature includes studies associated with the incidence, physical and psychosocial effects, and the variety of existing treatment modalities of PMS.

The "true" incidence of PMS is difficult to obtain due to cases that are never reported or because symptoms common to PMS are associated with other illnesses or disease. However, PMS has become a major clinical entity afflicting a large segment of the female population (Reid & Yen, 1981). Chihal (1982) estimated that approximately 5% of women who have PMS suffer so severely that it significantly

debilitates them. The life style of these women change and relationships with family and friends deteriorate. It has been observed that 36% of 1,500 women in one plant sought sedation in the premenstrual week (Simmons, 1983).

Hanna (1980), a third-year medical student, increased public awareness of the distressing effects of PMS on the life style of women who suffer from the maladaptation. She estimated the physiological as well as the psychological effects associated with PMS. The sample consisted of 132 women under the care of the PMS clinic at London's University College Hospital in December 1977. The respondents were of childbearing age who were married and had one or more children. Each woman was interviewed to collect information on psychophysiological effects of PMS. The psychological effects were identified as previous admission to a psychiatric hospital, attempts of suicide or murder, child abuse, alcoholic bouts, and criminal behavior. The following findings were reported: 37% had a previous admission to a psychiatric hospital; 34% had attempted suicide; 9% had alcoholic bouts; 6% had abused their infants; 4% were afraid of hurting their children; 6% had a history of criminal behavior, such as assault or vandalism; 7% had premenstrual epilepsy; and 5% had premenstrual distress. The physical effects were identified as premenstrual epilepsy in which 7% were affected and 5% had premenstrual asthma.

Rose and Abplanalp (1983) reported on the numerous effects of PMS. They characterized PMS as a cluster of physical and psychological symptoms that are temporarily limited to the week preceding menstruation and are relieved by onset of menses. They identified the somatic complaints as painful or swollen breasts, bloating, abdominal pain, headache, and backache. The psychological symptoms identified included depression, anxiety, irritability, and behavioral changes. After conducting a survey, they reported that 30% to 40% of the adult female population in the United States experience monthly symptoms which they attribute to PMS. Ruble (1981) conducted a study on 44 healthy college students, all of whom were at the same point in their menstrual cycle. A questionnaire was given to each student. Ruble reported that the women who were about to have their menstrual cycle had greater degrees of pain, water retention, and changes in eating habits than the women who were already experiencing their menstrual cycle.

Rose and Abplanalp (1983) recommended that nurses, physicians, and other medical personnel be more alert to nonmedical treatments, such as diet therapy and daily exercise. London (1983) reported that a comprehensive nutrition and life style approach proved significant relief for herself and other clients treated in this program. Along with aerobic exercise and planned relaxation, the John-Hopkins Sinai Program emphasizes a nutrition program

for relieving discomfort and pain associated with PMS. This nutritional program emphasizes decreasing salt intake to reduce water retention and bloatedness. Caffeine and refined sugar were also eliminated from the diet to alleviate nervousness and irritability (London, 1983).

A study conducted by Abraham and Lubran (1981) reported the effects of magnesium deficiency in PMS. The subjects were 35 women. Nine were normal premenopausal subjects, ranging in age from 23 to 35 years. The other 26 women, ages 24 to 44, suffered from pain associated with PMS. After informed consent was obtained, blood was drawn to determine magnesium levels. It was reported that women who suffer from PMS have lower, or deficient levels of magnesium than normal premenopausal women.

Hanna (1980) from her study reported that women may also help their discomfort and pain associated with PMS by watching their diet. "Restricting fluids will stop the bloated feeling, salt restriction will help to lower water and sodium retention, more potassium should be taken to combat depletion, by eating potassium-rich foods, such as bananas," adds Hanna (p. 37). Also, Hanna supports relaxation therapy, such as deep breathing and muscle control exercises to reduce pain and discomfort.

Dalton (1980) expanded even further on diet therapy. She agrees that restricting salt and limiting fluids helps to prevent water retention which often leads to an

unpleasant bloated feeling. Dalton also advocates the usage of potassium-rich foods, such as bananas and tomatoes, for those women who suffer from PMS.

Chihal (1982) recommends that women who suffer from PMS symptoms start on a regular exercise program of some type, such as walking, jogging, or aerobic dancing, at least three times a week every week. Also, Chihal (1982) recommends that maintaining a diet high in complex carbohydrates, low in simple sugars, and salt be used to decrease the discomfort of PMS.

Connell (1984) reported that many cases of PMS are successfully controlled through simple dietary changes; for example, eating three well-balanced meals each day, cutting down on salt to reduce water retention, and on sugar and caffeine to alleviate tension and irritability. In addition, Connell (1984) reported that exercise may alleviate symptoms such as tension and fatigue associated with PMS.

Norris (1983), a leading authority on PMS, has evaluated and treated over 2,000 women with an astounding 90% success rate. Norris reported that women with PMS have extremely poor eating habits. Norris developed a nutritional program to correct the nutritional imbalances that were a causative factor in PMS. Norris recommended that women with PMS eat a regular breakfast, lunch, and dinner every day. Also, Norris recommended reducing sugar

intake to five teaspoons, salt intake to a half teaspoon, reducing caffeine, increasing magnesium, and taking in 2.6 grams per day of potassium. By doing this, nervous tension, mood swings, abdominal bloating, breast tenderness, muscle weakness, and lethargy could be prevented. Andrews (1984) supports these recommendations and reports that daily exercise and a well-balanced diet can alleviate symptoms, such as tension, fatigue, and bloatedness felt by women who suffer from PMS.

Thus, the review of literature illustrates the multi-dimensions of PMS and the interrelationships of the different and numerous treatment modalities available that result in decreasing and perhaps alleviating the discomfort and pain associated with PMS. Also, it has developed the awareness in the two aspects of PMS: the physical and the psychosocial.

Chapter V

Research Design and Methodology

Research Design

The research design employed in this study was quasi-experimental. According to Polit and Hungler (1983), quasi-experimental research involves a manipulative component but lacks randomization. This quasi-experimental design involved the use of a pretest/posttest control group procedure. This study was designed to evaluate the amount of relief that a nonmedical Premenstrual Syndrome (PMS) Intervention Program would have on a group of women who suffered from PMS.

Variables

The dependent variable was the level of discomfort associated with PMS as determined by self-report to include the Menstrual Symptomatology Fact Sheet (MSFS) and the Menstrual Symptomatology Questionnaire (MSQ) (Abraham, 1980b) (see Appendices A and B). The independent variables included the utilization of a diet plan, an exercise program, and relaxation technique. Controlled variables included the age of participants (18-40 years) and degree of PMS symptomatology (a score of 46 or above on the MSQ).

Intervening variables were honesty in answering questionnaires, motivation, and educational level.

Setting, Population, and Sample

The setting for this study was a university town located in the west central portion of Alabama. In 1980, the population of this county was 137,541 (Bureau of the Census, 1982). Of this number, 37,907 lived in the rural area while 99,634 lived in an urban area of this 1,333-square mile county. There are a variety of educational facilities in the county. These include a state university, a junior college, and a private church affiliated college. There are numerous medical facilities which include two hospitals, a health department, three mental institutions, and a community health center. In this west central Alabama County, the majority of persons 25 years and older have a high school education, and 12,237 of this age group have four or more years of college (Bureau of the Census, 1982).

The accessible population for this study included women between the ages of 18 and 40 years who are students at the University of Alabama, attend the Baptist Student Union functions, and attain a score of 46 or above on the MSQ.

Data Gathering

The researcher invited women with PMS symptoms from the Baptist Student Union on the campus of the University of Alabama, who were interested in the PMS study, to complete the MSQ. Only those women whose score was 46 or above were invited to participate in the study. They were considered to manifest PMS symptoms based on their score on the MSQ. These subjects were asked to sign a consent form at the beginning of the study (see Appendix C). No names appeared on any forms, except the consent forms, so all forms were marked with an even or odd number. The nature of the research was explained verbally to each participant; in addition, a cover letter was provided (see Appendix D for the experimental group and Appendix E for the control group). All participants were asked to complete the MSFS to derive demographic data and to recognize any underlying disease process, such as endometriosis. Participants in both experimental and control groups were provided a self-addressed stamped envelope to return a completed MSQ following their next menstrual period. The score on the MSQ served as the posttest. Telephone contact was made to those participants who did not return the MSQ.

The 20 women who were assigned to the experimental group received the PMS information sheet (see Appendix F) and the PMS Intervention Booklet (see Appendix G). The PMS Intervention Program was explained to the individual

subject and the PMS Intervention Booklet was given to each participant. The 20 women were asked to follow the PMS Intervention Program for seven days prior to and during their next menstrual cycle. The 15 women assigned to the control group only received the PMS Information Sheet. These 15 women were asked to read the information concerning PMS during this study. Data collection was accomplished between May and June, 1985.

Instrumentation

Two tools were used to gather data related to demographic information and PMS symptoms. The MSFS was a self-administered tool developed by the researcher to solicit information, such as age, marital status, education, ethnic background, religious preference, church participation, menstrual history, menstrual discomfort, such as endometriosis, date of last menstrual history (LMP), previous treatment of PMS, usage of contraception, number of pregnancies and children.

The MSQ used in this study was adapted from Abraham's (1980b) MSQ. Written permission was granted by the author to utilize the MSQ in this study. The MSQ is a list of the 23 most commonly occurring symptoms of PMS. The items are rated by self-report according to severity on a scale of 0 to 3; 0 indicating none, 1 indicating mild, 2 indicating moderate, and 3 indicating severe. The higher the score is the greater the PMS symptoms will be. The pre-MSQ scores

were compared to the post-MSQ scores to obtain a MSQ change score. A reduction in the post-MSQ scores revealed a relief in PMS symptoms, while an increase revealed no relief in PMS symptoms. Reliability and validity of the instruments have not been established at this time. A pretest of the MSFS and MSQ was conducted using three subjects who have PMS symptoms and who did not participate in the research.

Statistical Analysis

The statistical analysis used on the collected data was the *t* test. The *t* test was selected because of the small sample size.

Assumptions

1. PMS is a definable and measurable construct which is exhibited in degrees that can be ranked as mild, moderate, or severe (Abraham, 1980b).

2. Recognition of premenstrual syndrome is dependent upon the perception of the affected women (Abraham, 1980b; Dalton, 1980).

3. Subjects did not practice the diet alterations, exercise program, and/or relaxation technique prior to this study.

4. Subjects responded honestly on the survey.

5. Subjects assigned to the experimental group followed the PMS Intervention Program approximately 50% of the time.

Limitations

1. Use of a sample from one geographic area and the small sample size limited generalizability of the findings to other geographic locations.

2. Data collected was limited to only one menstrual cycle.

3. Use of women between 18 and 40 years of age limits generalizability of findings to women less than 18 years and greater than 40 years of age.

Chapter VI

Analysis of Data

The purpose of this study was to determine if a non-medical intervention program consisting of diet alterations, exercise therapy, and relaxation techniques would relieve or alleviate the symptoms of Premenstrual Syndrome (PMS). Data were collected from 35 women who completed the Menstrual Symptomatology Fact Sheet (MSFS) and the Menstrual Symptomatology Questionnaire (MSQ). Of the 35, 15 were in the control group, and 20 were in the experimental group.

This group consisted of 25 Caucasian and 10 Black women. The ages ranged from 18 years to 45 years of age with a mean age of 18 (42.9%). Of the 35, 13 (37.1%) were single, 15 (42.9%) were married, 5 (14.3%) divorced, and 2 (5.7%) widowed. Ten (28.6%) had completed high school, 12 (34.3%) were attending college, 6 (17.1%) had finished college, 2 (5.7%) were attending graduate school, and 5 (14.3%) had finished graduate school. These data along with the individual subject scores related to the pre, post, and the change in MSQ scores are found in Table 1.

Table 1

Raw Subject Data Including Age Range, Marital Status Educational Level, Race, Pre, Post, and Change in MSQ Scores

Subject	Age Range	Marital Status	Ed (Yrs)	Race	Pre-MSQ	Post-MSQ	Change in MSQ
C_1	31-40	D	12-16	W	51	45	6
C_2	31-40	W	16	W	59	36	23
C_3	26-30	M	12	W	46	49	-3
C_4	18-25	S	16	B	47	51	-4
C_5	31-40	M	12	W	54	48	6
C_6	18-25	S	16	W	46	40	6
C_7	18-25	M	16	W	46	40	6
C_8	18-25	M	16	W	46	46	0
C_9	26-30	M	12	W	64	65	-1
C_{10}	26-30	M	17	W	51	54	-3
C_{11}	31-40	D	12	W	56	45	11
C_{12}	18-25	D	12	B	60	54	6
C_{13}	26-30	D	17	W	62	64	-2
C_{14}	26-30	N	17	W	52	48	4
C_{15}	31-40	W	12	B	46	46	0
E_1	18-25	S	12-16	B	58	34	24
E_2	18-25	S	12-16	W	56	43	13
E_3	18-25	D	12-16	W	47	34	13
E_4	18-25	S	12-16	W	47	28	19
E_5	26-30	M	16	W	72	48	24
E_6	18-25	M	12-16	W	52	52	0
E_7	18-25	S	12-16	W	49	39	10
E_8	18-25	S	12	B	58	56	2
E_9	18-25	S	12-16	W	47	45	2
E_{10}	26-30	S	17	W	53	62	-9
E_{11}	26-30	S	16	B	42	26	16
E_{12}	31-40	M	16	W	68	48	20
E_{13}	18-25	S	12-16	W	58	36	22
E_{14}	31-40	M	12	W	83	75	8
E_{15}	31-40	M	12	B	47	48	-1
E_{16}	31-40	S	17	W	105	92	13
E_{17}	31-40	M	12	W	99	97	2
E_{18}	18-25	S	12-16	B	46	35	11
E_{19}	31-40	M	17	W	60	38	22
E_{20}	26-30	M	12-16	B	48	34	14

Hypothesis

The researcher hypothesized that when women who followed a PMS Intervention Program were compared to women who had not followed the program, there would be no significant difference. To test this hypothesis, the MSQ scores were subjected to the *t* test. Comparison of pre-MSQ scores for the experimental and control groups revealed a *t* value of -1.54, which was not significant at the .05 level. Comparison of post MSQ scores for the experimental and control groups revealed a *t* value of .04, which was not significant at the .05 level. However, when the change in MSQ scores were compared, the *t* value was -2.62, which was significant at the .05 level. Therefore, the researcher rejected the null hypothesis. The experimental group showed more reduction in PMS symptoms than the control group. These data are found in Table 2.

Additional Findings

Of particular interest to this researcher was the fact that 11 (31.4%) of the women reported they had not used the birth control pill in the past, while 24 (68.6%) had used the pill for contraception. Currently, 13 (37.1%) of the women used the pill, 4 (11.4%) used the IUD, 3 (8.6%) used other forms, while 15 (42.9%) did not use any form of birth control. The length of time suffered from menstrual discomfort had a mean average of 10.4 years. Five (14.3%) of these women reported that they used birth control pills to

Table 2

Comparison of the Pre, Post, and Change in the MSQ Score Using the t Test

Measure	N	$\bar{M}$	SD	t
Pre Scores - MSQ				
Control	15	52.4	6.4	-1.54*
Experimental	20	59.8	17.6	
Post Scores - MSQ				
Control	15	48.7	8.1	.04*
Experimental	20	48.5	19.6	
Change in MSQ				
Control	15	3.67	6.9	2.62*
Experimental	20	11.25	9.4	

*$p \leq .05$.

treat their discomfort, 2 (5.7%) sedatives, 1 (2.9%) anti-depressants, 3 (8.6%) water pills, 2 (5.7%) bromocriptine, 7 (20.0%) more than one treatment, 5 (14.3%) other treatments, and 10 (28.6%) did not treat. Ten (28.6%) of the women's responses to the prescribed medical treatment was worse, 19 (54.3%) had had no response, and 6 (17.1%) had had a good response. Please refer to Table 3 for these data.

Table 3

PMS Treatment and Contraceptive Usage

Question	Frequency	Percentage
Treatment for PMS		
Pills	5	14.3
Sedatives	2	5.7
Antidepressants	1	2.9
Water pills	3	8.6
Bromocriptine	2	5.7
More than one treatment	7	20.0
Other treatment	5	14.3
Did not treat	10	28.6
Response to treatment		
Worse	10	28.6
None	19	54.3
Good	6	17.1
Past pill usage		
Yes	24	68.6
No	11	31.4
Present contraception		
Pill	13	37.1
IUD	4	11.4
Other forms	3	8.6
None	15	42.9

Chapter VII

Summary, Conclusions, Implications, and Recommendations

Summary

This experimental study was designed to compare the relief of Premenstrual Syndrome (PMS) symptoms of women between the ages of 18 to 40. The experimental group was asked to follow a nonmedical PMS Intervention Program one week prior to and during their menstrual cycle. The researcher hypothesized that there would be no significant difference in PMS symptoms between women who participated in the treatment and women who did not participate in the treatment.

A researcher-designed survey which consisted of the Menstrual Symptomatology Fact Sheet (MSFS) and the Menstrual Symptomatology Questionnaire (MSQ) was administered to 35 women who reported PMS symptoms and achieved a score of 46 or above on the MSQ.

To test the null hypothesis, the *t* test was used on pre-MSQ, post-MSQ, and change in MSQ scores. Since there was a significant difference in change in MSQ scores, the null hypothesis was rejected. The researcher concluded that

a nonmedical intervention program could decrease PMS symptoms in women.

Conclusions and Implications

The research suggests that a combination of diet, exercise, and relaxation does reduce pain associated with PMS. While London (1983), Hanna (1980), Chihal (1982), and Connell (1984) utilized dietary adjustment, exercise or relaxation as separate treatments with minimal success, none of these treatments had been used in combination before. As a Family Nurse Clinician (FNC), the combination of diet, exercise, and relaxation should be discussed with clients in order to reduce pain associated with PMS.

Although 100% of the subjects used medications, 54.3% reported no relief of PMS, and 29% of the women had suffered from PMS for 10.4 years. The researcher concluded that PMS is an extensive health problem as reported in the literature (Abraham, 1980; Simmons, 1983). These findings could be beneficial to the FNC. The FNC should thoroughly assess her female clients and include pertinent questions concerning PMS when interviewing and history-taking. Also, the FNC should teach the client specific interventions to relieve PMS and note the client's understanding of appropriate treatment. By doing this, the FNC enables the client to adapt to this devastating maladaptation as suggested by Roy (1976).

The FNCs should be aware of the extensive usage of hazardous medications utilized for PMS, as well as teaching and assessing each client concerning the side effects of these particular medications. A nonmedical program should be suggested to each client as an alternative.

Recommendations

The following recommendations are made based upon the findings from this study.

Nursing practice

1. Intervention by the FNC with women who suffer from PMS to prevent increasing physical or psychological damage.
2. Assessment of each female client for PMS.
3. Utilization of a combination of diet, exercise, and relaxation by the FNC to manage PMS.
4. Assessment of clients for the use of hazardous medications in treatment of PMS and teaching to discourage their use.

Research

1. Conduction of studies to establish reliability and validity of the researcher-designed tool.
2. Replication of this study in other geographical areas.
3. Conduction of a longitudinal study to determine if PMS symptoms change with time or with other interventions.
4. Research into the side effects of medicines used by women to treat PMS.

#_____

Appendix A

Menstrual Symptomatology Fact Sheet

Directions:

Please answer all the questions by placing a check ( ) in the blank. Do not put your name on this questionnaire:

1. Age: 18-25 _____
   26-30 _____
   31-40 _____

2. Marital status:

   Single, never married _____
   Married _____
   Divorced or Separated _____
   Widowed _____

3. Educational level:

   Completed high school _____
   Attended college _____
   Finished college _____
   Attended graduate school _____
   Finished graduate school _____

4. Ethnic background:

   Asian _____
   Black _____
   Caucasian _____
   Hispanic _____
   Native American _____
   Other (specify) _____

5. Religious preference:

   Protestant _____
   Catholic _____
   Jewish _____
   None _____
   Other (specify) _____

6. Participation in Religious Activities:

Inactive _____
Infrrequent participation (1-2 times per year)_____
Occasional participation (almost monthly) _____
Regular participation (weekly) _____

7. Have you ever used oral contraceptive pills?

Yes _____
No _____

8. Present contraception:

Pill _____
IUD _____
None _____
Other (specify) _____

9. Your last menstrual period:

Started _____ (date) (write in your answer)
Lasted _____ (days)

10. How long have you suffered from menstrual discomfort? (write in answer)

_____

11. How do you treat your discomfort: (check all that apply)

Sedatives _____
Anti-depressant _____
Water pills _____
Birth control pills _____
Progesterone _____
Bromocriptine _____
Do not treat _____
Other (specify) _____

12. What has been your response to treatment:

Excellent _____
Good _____
None _____
Worse _____

13. Have you had any prior history of a disease process, such as endometriosis? If yes, explain:

    Yes _____
    No _____

14. Number of pregnancies: _____ (write in answer).

15. Number of children: _____ (write in answer).

#_____
Date_____

Appendix B

Menstrual Symptomatology Questionnaire

Directions:

Please rate each symptom for your usual menstrual cycle according to the scale below. Do not write your name on any of the forms:

0 - None

1 - Mild--present but does not interfere with activities

2 - Moderate--present and interferes with activities but not disabling

3 - Severe disabling--unable to function

_____

	Symptoms	Week Before Period	During Period
1.	Nervous tension	_____	_____
2.	Mood swings	_____	_____
3.	Irritability	_____	_____
4.	Anxiety	_____	_____
5.	Weight gain	_____	_____
6.	Swelling of extremities	_____	_____
7.	Breast tenderness	_____	_____
8.	Abdominal bloating	_____	_____
9.	Headache	_____	_____
10.	Craving for sweets	_____	_____
11.	Increased appetite	_____	_____
12.	Heart pounding	_____	_____
13.	Fatigue	_____	_____
14.	Dizziness or fainting	_____	_____
15.	Depression	_____	_____
16.	Forgetfulness	_____	_____
17.	Crying	_____	_____
18.	Confusion	_____	_____
19.	Insomnia	_____	_____
20.	Oily skin	_____	_____
21.	Acne	_____	_____
22.	Backache	_____	_____
23.	Cramps	_____	_____
	Total MSQ Score	_____	_____

_____

Appendix C

Individual Consent Form

I understand that Lisa Pullen, a graduate student in nursing at Mississippi University for Women in Columbus, Mississippi, is conducting a research study on Premenstrual Syndrome (PMS).

I have had the nature and purpose of this study explained to me, and I understand what I am expected to do as a participant in this study.

I also understand that all information obtained will be confidential and my identity will not be revealed. This study is being conducted to find more effective ways to alleviate PMS symptoms and to advance nursing science.

_____
Participant's Name

_____

_____
Participant's Address

_____
Participant's Phone Number

_____
Researcher's Name

_____
Date

____

Appendix D

Cover Letter

Experimental Group

My name is Lisa Pullen. I am a Registered Nurse and a graduate student in nursing at Mississippi University for Women in Columbus, Mississippi. I am conducting research related to Premenstrual Syndrome (PMS). I would appreciate your assistance in this study. If you decide to participate, you will be asked to complete two short questionnaires about your menstrual cycles and associated symptoms.

I will then give you the Premenstrual Syndrome Booklet and explain any part of the program that is unclear. You will begin following the PMS Intervention Program one week before your next menstrual cycle and continue throughout the menstrual cycle. After your cycle is finished you will complete only one short questionnaire and mail it back to me in the self-addressed, stamped envelope provided.

Your name will not appear on any forms. All information will be confidential and the results written for a master's thesis. The data will be analyzed as a group and anonymity will be maintained. You may withdraw from this study any time prior to data analysis. A summary of

the findings will be available to each participant if requested.

Thank you for your cooperation and I appreciate your assistance. If you have any further questions, please call me at (205) 345-4282.

Thank you,

Lisa Pullen

____

Appendix E

Cover Letter

Control Group

My name is Lisa Pullen. I am a Registered Nurse and a graduate student in nursing at Mississippi University for Women in Columbus, Mississippi. I am conducting research related to Premenstrual Syndrome (PMS). I would appreciate your assistance in this study. If you decide to participate you will be asked to complete two short questionnaires about your menstrual cycle and associated symptoms. I will then give you the Premenstrual Syndrome Booklet and explain any part of the program that is unclear. You will be asked to read the PMS information sheet. After your cycle is finished you will complete only one short questionnaire and mail it back to me in the self-addressed stamped envelope provided. I will send you the PMS Intervention Program that I compiled.

Your name will not appear on any forms. All information will be confidential and the results written for a master's thesis. The data will be analyzed as a group and anonymity will be maintained. You may withdraw from this study any time prior to data analysis. A summary of

the findings will be available to each participant if requested.

Thank you for your cooperation and I appreciate your assistance. If you have any further questions, please call me at (205) 345-4282.

Thank you,

Lisa Pullen

_____

Appendix F

Introduction to PMS Information Sheet

This sheet provides information concerning premenstrual syndrome (PMS). You will be asked to read this information concerning PMS. After your next menstrual cycle is completed, you will be asked to complete the Menstrual Symptomatology Questionnaire (MSQ) and mail it in the self-addressed, stamped envelope to me. These are provided for you in your booklet. If you have any questions or problems, call me at (205) 345-4282.

Thanks,

Lisa Pullen

Premenstrual Syndrome Information Sheet

Directions:

Below is information concerning PMS that you are asked to read.

Premenstrual Syndrome (PMS) has been defined as a recurrent symptom complex that begins the week prior to menstruation and usually disappears soon after the onset of the menstrual flow. This symptom complex consists predominantly of edema, lower abdominal pain (including cramps), breast tenderness, headache, abdominal bloating, fatigue, and the feelings of depression, irritability, tension, and anxiety.

PMS is estimated to affect 70% to 90% of women at some time during their childbearing years. Some women first experience PMS after pregnancy, or after they stop taking birth control pills.

PMS can disrupt family life, harming a woman's relationships with her husband and children. It can also be a handicap for a woman in the work force, affecting her job performance, relations with co-workers, and opportunities for advancement. A severe case of PMS may force her to take unpaid sick days, causing economic strain.

Researchers have pursued various avenues in investigating the etiology or etiologies of the premenstrual syndrome. Many researchers have focused on the interrelationships of progesterone, estrogen, and other hormones causing the symptoms of anxiety, water retention, and breast tenderness, while other researchers have focused on numerous and contrasting theories. Such theories as elevated prostaglandin levels causing breast tenderness, headaches, water retention, and anxiety; nutritional imbalance in sodium, potassium, magnesium, and calcium causing fluid retention, anxiety, and fatigue; and psychological factors that precipitate PMS symptoms.

_____

Appendix G

Introduction to PMS Intervention Program

This program includes alterations in dietary intake to decrease water retention, thereby reducing some symptoms of premenstrual syndrome (PMS). Relaxation techniques and an exercise program will be included to relieve muscle tension and stress. You will be asked to follow this program one week before and during your menstrual cycle.

After your menstrual cycle is finished you are asked to complete the Menstrual Symptomatology Questionnaire (MSQ) related to the menstrual cycle just completed and mail it in the self-addressed, stamped envelope to me. These are provided for you in your booklet. If you have any questions or problems, call me at (205) 345-4282.

Thank you,

Lisa Pullen

Premenstrual Syndrome Intervention Program

Directions:

Seven days before and during your menstrual cycle make the following changes in your diet:

Electrolyte Diet Alterations

A. Restrict all salt and foods high in sodium to alleviate water retention. Below is a list of foods high in sodium which should be eliminated from your daily diet:

1. Pork (all kinds)
2. Peanuts (roasted, salted)
3. Baking powder and soda
4. Sauces (barbeque, soy, ketchup, and mustard)
5. T.V. dinners
6. Pot pies
7. Frankfurters
8. Corned beef
9. Olives (all kinds)
10. Pickles (all kinds)
11. Canned soups
12. Fish (especially tuna)
13. Processed cheese

B. Diuretic foods are useful to eliminate water retention. Below is a list of these foods to include in your daily diet:

1. Cranberry juice
2. Watermelon
3. Cucumber
4. Asparagus
5. Parsley
6. Strawberries

C. Potassium-rich foods are useful in preventing muscle weakness and cramps. Below is a list of these foods to include in your daily diet:

1. All fresh fruits
    a. Bananas
    b. Apples
    c. Oranges

2. Dark, green leafy vegetables
    a. Broccoli
    b. Mustard greens
    c. Celery

Relaxation Technique

Directions:

Seven days before and during your menstrual cycle you are asked to do the following relaxation technique. Please follow the technique at least once and at any time during the day. Please use a watch or clock to time the two-minute intervals. Use the following relaxation technique outline. It will enable you to follow the correct sequence.

1. Sit quietly in a comfortable position, sitting or semi-reclining with all extremities supported for two minutes. Lying down is not suggested due to a tendency to fall asleep in this position.

2. Leave eyes open for two minutes, then gradually close and keep closed, after two minutes with closed eyes begin progressive tensing and relaxing of all muscles from the feet up.

    a. Legs--tense and relax foot, knee, thigh, and then the entire leg.

    b. Trunk--pull in abdomen, arch back slightly, relax abdomen, back, legs; bend shoulders back, relax; elevate shoulders, relax. Relax entire trunk.

    c. Arms--bend each hand back and then relax, bend each elbow and relax. Tense and relax entire arm.

    d. Neck--bend head back, bend chin toward chest, bend head right, then left, then relax.

    e. Mouth--clench teeth, relax; frown, relax; smile, relax.

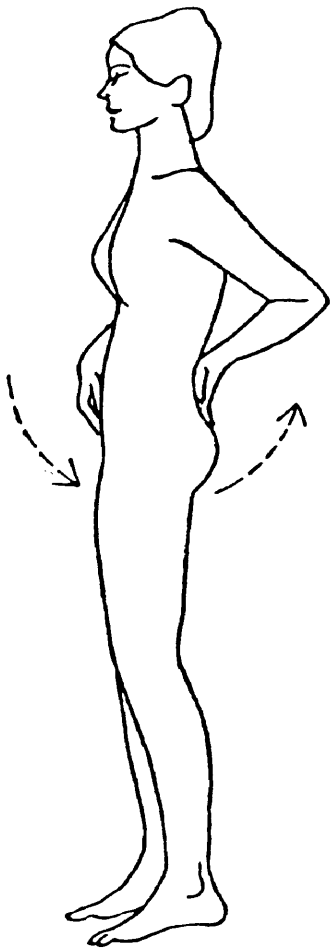
    f. Eye region--wrinkle forehead, frown, relax; close eyelids tightly, relax.

    g. When finished, sit quietly for two minutes with eyes closed, then with eyes opened. Do not stand for two minutes.

Exercise Program

Directions:

Seven days before and during your menstrual cycle, you are asked to follow an exercise program. Please do the exercises at least once and at any time during the day. Please use a watch or clock to time the 15-second and two-minute intervals. Use the following exercise program outline. It will enable you to perform the exercises correctly.



The Pelvic Rock

Standing straight and tall, place one hand over the pubic mound and other hand against the small of your back. Push down with the hand on your back, tense the muscles of the buttocks, then relax.

Pelvic rocking can be done sitting down. Just tighten the stomach muscles and push down with the muscles of your lower back and buttocks. Hold for 15 seconds, relax.

A. B. C.

The Pose of the Child

A. Sit on your heels and slightly bend forward, then raise both arms above your head for two minutes.

B. Sit on your heels, with back erect, then apply pressure of the fist aside the hip bones against the uterus for two minutes.

C. Sit on your heels, and slowly bend forward with fist still pressing against the uterus, until forehead touches the floor in front of you. Do not arch your back--relax it, breathe deeply, regularly, and stay in this pose for two minutes. Come up slowly from the pose to a sitting position, then relax.

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