MENSTRUAL-RELATED DISTRESS AND WILLINGNESS
VERSUS UNWILLINGNESS TO SEEK TREATMENT

DISSERTATION

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By

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The purpose of this study was to delineate variables which relate to reported willingness to seek treatment for menstrual-related distress, and to assess treatment preferences in a population of women often tapped for menstrual research that of college students.

Of the 198 volunteers included in the study, 71 stated that they were willing to seek some form of treatment for menstrual-related distress, and 127 stated that they were not willing to do so. The Adjective Checklist (ACL), Menstrual Attitude Questionnaire (MAQ), and Menstrual Distress Questionnaire (MDQ), along with a personal data sheet were administered to subjects. In addition, they were asked to read three paragraph-long descriptions of self-administered, medical, and behavioral treatments for menstrual-related distress and to indicate their preference for each.

Hotellings $T^2$ between the two groups indicated that global personality dimensions did not appear to impact an individual's willingness to participate in treatment. The willing group reported a significantly greater amount of flow phase symptom severity than their counterparts. In addition,
this group was more likely to endorse the attitude dimensions of menstruation as debilitating and predictable. The unwilling subjects were significantly more likely to endorse the denial attitude toward menstrual-related distress.

The two groups were similar in their overwhelming preference for self-administered treatment, and rejection of behavioral treatment, with medical treatment falling between these preference extremes.

Results are discussed in terms of the necessity for assessing variables other than symptom severity alone when studying treatment effects. In addition, there is a need on the part of potential help-providers to make behavioral-oriented treatment more attractive to potential help-seekers and to make the availability of their treatments known to the target population.
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MENSTRUAL-RELATED DISTRESS AND WILLINGNESS
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In recent years there has been a great deal of interest in the human menstrual cycle by researchers in several fields. Given the fact that many women report physical, psychological and behavioral changes that correspond to the different phases of the cycle, investigators have set out to account for these changes. Postulated correlates of menstrual distress have included individual psychopathology, social and hormonal influences. None of these variables has been found adequate to account for the wide range of symptoms related to the menstrual cycle.

These studies reflect confusing and contradictory results. "In addition to the differences which can be expected when separate disciplines examine a subject, and the inherent difficulty in comparing work which uses widely disparate constructs, it is even questionable whether various investigators have been examining the same basic phenomena" (Haskett, Steiner, Osmun, & Carroll, 1980, p. 122). This lack of a standardized approach to the study of the menstrual cycle is a pervasive problem throughout the literature. Contributing further to the confusion is the practice of generalizing the results from a restricted
sample to a potentially different population, or to all
adult women found in some studies (Haskett et al., 1980).

In the last decade several studies have attempted to
determine how women may most effectively be treated for
various menstrual complaints and these outcome studies have
encountered a number of difficulties. First, there is no
generally accepted theory of etiology of menstrual distress.
Recently, more complex relationships among possible causes
of discomfort have been proposed. These findings have begun
to replace the idea that the problem is as simple as
originally proposed.

Second, there is a lack of standardized diagnostic
criteria of menstrual distress. Subjects have been
classified according to the time of month that their
symptoms occur, by the type of symptoms that they experience
without particular regard to the timing of the symptom, and
by the total configuration of their symptoms across the
cycle phases.

Third, the lack of standardized diagnostic criteria has
led to inconsistent division of subjects into treatment
groups. Thus, subjects classified as suffering from
"premenstrual tension" in one study may have a different
symptom configuration than subjects so classified in another
study. This makes comparisons across studies difficult.

Denney and Gerrard (1981) point to this difficulty and
add a fourth, what they feel is a failure on the part of
researchers to fully take into account, the pathophysiology of menstrual distress. For example, treatment may include the use of biofeedback techniques applied to areas of the body not even remotely associated with menstrual symptoms, such as the tips of the fingers.

Fifth, Denney and Gerrard (1981) also discuss the fact that some outcome research has employed multiple case studies without proper control groups as an area that must be improved before any more definite conclusions may be drawn regarding differential treatment effects.

Despite these many difficulties of approach and design, it has become apparent that women can be successfully treated for menstrual-related distress. Many subjects across these outcome studies report that they experience symptom relief following treatment. Whether these reports of subjective relief are a direct result of the administration of the treatments or of more spurious experimental effects in some cases remains for carefully controlled studies to determine.

As women become more aware of treatment alternatives when they become available, for menstrual distress, demand for such services will probably increase. As an indication of the attractiveness of such treatment to women, one need only examine subject response in outcome studies with college women. The typical study involves the recruiting of subjects by advertising in the college paper or posting the
information in the college dorms. Women readily call the researchers to volunteer to participate in the experiment in order to receive treatment for their symptoms. Thus, menstrual-related symptoms seem to be of sufficient concern to some women that they will seek treatment if they know that it is available. Little is presently known about the factors that go into a woman's decision to seek treatment if she is provided with treatment alternatives. To the best of this writer's knowledge, no study has been done that contrasted the women who volunteered to participate in the treatment studies to a control group of women who did not so volunteer.

The present study will attempt to shed some light on this question. It will address such issues as what attitudes toward menstrual-related distress are most conducive to help-seeking and how these might be encouraged by potential help-givers. It is important that we maximize our knowledge of the target population in order to maximize successful help-delivery.

The organization of this study is as follows. First, an overview of the hormonal basis of the menstrual cycle examines the current thinking regarding the physiology of menstruation. This is followed by a review of the proposed physiological causes of menstrual-related distress. Next is a brief review of the work that has been done regarding the relationship of menstrual-related symptoms and personality
variables. This is followed by a review of the development and influence of attitudes toward menstruation on the experiencing of menstrual symptoms. The fifth section is an overview of the different treatment methods that have been tried to reduce menstrual distress. Finally, help-seeking in general is examined as is the possible relevance of these variables to help-seeking for menstrual-related distress.

Hormonal Basis of the Menstrual Cycle

The menstrual cycle is a complex physiological process that takes place approximately every 28 days throughout a woman's reproductive life. It represents a hormonal interaction between the anterior, pituitary, the ovaries and the uterus that is overseen by the hypothalamus. The secretion by higher brain centers of the biogenic amines epinephrine and norepinephrine stimulate the hypothalamus to produce hormones which travel to the anterior pituitary and in turn stimulate it to produce hormones which act on the ovaries and uterus. These hormones are follicle-stimulating hormone (FSH) and luteinizing hormone (LH). In response to stimulation by these pituitary hormones, the ovaries produce estrogen and progesterone over the course of the cycle (Brown & Barglow, 1971).

Researchers have divided the menstrual cycle into various phases that are defined by the activities that occur during that time. Though several different divisions have been employed, the simplest and most widely used in
treatment outcome studies consists of the menstrual flow phase, the intermenstrual phase, and the premenstrual phase. A brief summary of the hormonal changes taking place during these phases of the menstrual cycle will be presented below.

Flow phase. The menstrual flow phase constitutes the first week of the menstrual cycle with the commencement of the flow labeled as Day 1. As the cycle begins, the hypothalamus stimulates the anterior pituitary gland to release FSH. This hormone causes the uterine lining to thicken and the ovaries to prepare an egg for ovulation and at the same time to produce estrogen. This begins to take place as the menstrual flow ceases.

Intermenstrual phase. The intermenstrual phase is generally considered to consist of Days 7-21 of the cycle. Estrogen from the ovaries continues to rise until it reaches a peak at about Day 14, when ovulation occurs. The estrogen signals the hypothalamus which in turn causes the pituitary to cease secreting FSH and to commence the secretion of LH. The LH triggers ovulation and the ovary then begins to produce progesterone. Following ovulation, estrogen declines slightly and then rises again as progesterone also begins to rise.

Premenstrual phase. The premenstrual phase of the cycle consists of Days 22-28. During this week before menstrual flow onset, the high level of progesterone causes the hypothalamus to inhibit further pituitary secretion of
LH. Levels of both progesterone and estrogen then fall off sharply until they reach their lowest point and the menstrual flow commences, beginning the next cycle (Lips & Colwill, 1978).

This represents the ideal cycle of 28 days in length. Actually, cycles may vary in length from 15 to 45 days (Rogel, 1980). Women do not experience identical phenomena with regard to their menstrual cycles; there is great individual variation. Also, the same woman does not always experience the same phenomena from cycle to cycle. Cycles may vary in terms of their total length, the number of days of menstrual flow, and the amount and type of the flow (Dalton, 1969). Due to this great amount of variability, questions have recently been raised as to the advisability of making generalizations about what all women experience based on the group data of a small sample of women. Moos and Leiderman (1978) have proposed that there are several different symptom clusters that women may experience in relation to their menstrual cycle and that researchers must carefully screen potential subjects to determine what symptom cluster they experience before using them in a study. They maintain that, if this practice is not carried out but rather subjects are combined to produce group data, real effects might cancel each other out. They further propose that this might account for the contradictory nature of previous work on the menstrual cycle.
Halbreich and Endicott (1982) have recently proposed a typology for menstrual-related distress experienced in the premenstrual cycle phase. It is an elaborate system that allows for quite specific subtyping of individuals based on their symptom experiences. The use of this system and others like it should help to reduce the contradictory nature of the literature.

One of the difficulties that has led to confusion in the literature is the fact that there is no universally accepted view of the physiology of the menstrual cycle. Researchers have not as yet uncovered all of the intricate biochemical relationships that account for the variability in the cycle. The following represents an overview of the current attempts to account for menstrual-related distress by relating it to underlying physiology.

Views of the Physiological Basis of Menstrual-related Distress

For decades researchers have noted that a large proportion of women report various physical and psychological "symptoms" in relation to their menstrual cycle in the premenstrual and menstrual flow phases. The medical term for these discomforts is dysmenorrhea. Primary dysmenorrhea is the discomfort that exists in the absence of any apparent physical abnormality. Secondary dysmenorrhea is comprised of those symptoms that accompany an organic problem such as endometriosis, fibroids or cancer (Budoff,
1980). It is the former type of dysmenorrhea that has received the attention of researchers of menstrual-related distress.

As a result of this intensive research interest, it is now known that there is great variability in the experience of menstrual-related symptoms as well as menstrual-related phenomena, mentioned above. Women differ in the number of symptoms they experience, the type of symptoms they experience, and the cycle phase in which they experience menstrual-related distress. Some women are multisymptomatic whereas others report only one primary symptom; some women report that they experience primarily psychological symptoms while others seem to experience strictly physical discomfort; finally, these symptoms may be reported in the menstrual flow phase only, the premenstrual phase only or in both phases, a particular symptom may begin in one phase and continue into the next or be replaced by a totally different symptom configuration (Moos & Liederman, 1978).

In spite of the discovery of the great degree of variability in menstrual-related symptom experience, subjective reports have revealed clusters of symptoms that often occur together. Katharina Dalton, an English physician, has been studying menstrual-related symptoms as experienced by her patients for several decades. Noticing patterns of symptoms she theorized that they were the result of a disturbance in the delicate balance of the ovarian
hormones. The symptoms that occurred depended on the particular disturbance the individual experienced. Those symptoms experienced in the flow phase were labeled spasmotic dysmenorrhea. Those experienced in the premenstrual phase were termed congestive dysmenorrhea. Though the validity of these constructs have recently been called into question (Webster, 1980), they have been widely used. Following is a description of each type of dysmenorrhea as it was originally conceptualized by Dalton and then alternative explanations that have been offered to account for the symptoms experienced is presented.

Spasmotic dysmenorrhea. Although there is individual variability, symptoms of spasmotic dysmenorrhea include pain in body areas controlled by ovarian or uterine nerves, including the lower abdomen, back and inner sides of the thighs. The pain may be severe enough to cause vomiting or fainting and may also be accompanied by diarrhea, dizziness and headaches (Dalton, 1969). Onset of this syndrome rarely occurs in the first few menstrual cycles when ovulation does not take place. It is most common in women between the ages of 15 and 25 and is often relieved once the woman has been pregnant, though symptoms may persist throughout a woman's reproductive life.

Dalton proposed that spasmotic dysmenorrhea is the result of too little estrogen in relation to an overabundance of progesterone. She proposed that the actual
pain is caused by uterine contractions in an effort to expel menstrual material through an opening inadequate to the task. Thus, relief that many women experience following childbirth is thought to be caused by the cervix having been expanded by the birth process.

Dalton additionally proposed that there are certain characteristics that differentiate sufferers of the two types of dysmenorrhea. She noted that spasmotic sufferers appear to have underdeveloped sexual characteristics, such as small breasts and they seem to be rather immature and shy. These were impressions she formulated from her work with several hundred patients.

In contrast to Dalton's proposed theory of etiology of spasmotic dysmenorrhea is one in which prostaglandins are thought to be responsible for this cluster of symptoms. Although initially prostaglandins were thought to play a limited role in body chemistry, they have since come to be regarded as being more essential. They may be found in nearly every cell of the body and are derived from essential unsaturated fatty acids.

Unlike hormones, which are produced in one body site and travel through the bloodstream to effect a distant site, most prostaglandins are thought to exert their influence where they are produced. They appear to regulate the tone of smooth muscles and their levels, or the ratios between
them will determine what the effect will be, contraction or relaxation of the muscle.

The uterine lining produces two prostaglandins, E and F (nine groups, A-I, have been discovered thus far). As the menstrual flow phase approaches, these uterine prostaglandins increase to their highest level attained at flow onset. It is proposed that Prostaglandin F causes the uterus to contract and, therefore, if there is too much of F in relation to E, contractions experienced as cramping occur. Additional pain results from the constriction of the blood supply due to the contractions.

It is further proposed that additional spasmotic symptoms are caused by excess uterine prostaglandin that escapes into the bloodstream and thereby effects other smooth muscles in the body. For example, diarrhea is the result of the effects on the smooth muscles of the intestinal tract and faintness by the pooling of blood in the legs and feet, depriving the brain of oxygen (Budoff, 1980).

Experimental evidence for the role of prostaglandins in spasmotic dysmenorrhea has been accumulating. There appear to be differences in the type (Pickles, Hall, Best, & Smith, 1965) and amount (Pickles, 1972) of prostaglandins in the menstrual fluid of women who report experiencing spasmotic dysmenorrhea as compared to non-suffering controls. In addition, there is evidence that uterine
production of prostaglandins is dependent on the presence of progesterone which reaches a peak about one week before menstrual flow onset. In cycles that are anovulatory, or those in which ovulation does not occur, there is no rise in progesterone and therefore no rise in endometrial prostaglandins. The result is a painless menstrual flow phase (Ylikorkala & Dawood, 1978).

Based on these physiological explanations of spasmotic dysmenorrhea, many researchers have set out to treat women by either replacing the presumed missing hormone or by administering substances that indirectly restore balance among the naturally occurring chemicals in the body. These methods will be reviewed in the treatment section.

**Congestive dysmenorrhea.** Dalton (1969) proposed that there is another type of dysmenorrhea that is distinct from spasmotic dysmenorrhea and occurs in the premenstrual rather than menstrual phase of the cycle. Congestive dysmenorrhea was the name she applied to this syndrome. It may begin at the very first menstrual cycle and continue throughout the individual's reproductive life. Dalton noted that unlike spasmotic dysmenorrhea that may be relieved after the woman has been pregnant, congestive dysmenorrhea may actually become worse with each successive pregnancy.

Ten days to one week before the menstrual flow begins the woman will begin to experience an increasing heaviness and dull aching sensation in the lower abdomen. This may be
accompanied by nausea, lack of appetite and constipation. Additional common symptoms include headache, backache and breast pains. These symptoms are the result of water retention in the tissues of the body. The site of this water retention depends on a number of individual factors and it is the site rather than the amount of water retained that determines the severity of the symptoms experienced.

Dalton views congestive dysmenorrhea as a subset of the premenstrual syndrome. This she defined as any symptom of any body system that occurs with cyclic regularity with the menstrual cycle, and is usually not present during other times of the month. The symptoms vary greatly from allergic reactions to headaches and even epileptic-type seizures, though this last symptom is rare. Careful charting of the appearance and duration of these symptoms has to be carried out for several months before they can be attributed to the menstrual cycle.

Another subset of the premenstrual syndrome, and one that has generated a great deal of research interest and controversy, is premenstrual tension. This includes negative affect, most predominently lethargy, depression and irritability. Though Dalton believed it was possible for an individual to experience premenstrual tension without any physical distress, "When other premenstrual symptoms are present, premenstrual tension will be the invariable accompaniment" (Dalton, 1969, p. 52).
According to Dalton, congestive dysmenorrhea is caused by too little progesterone in relation to too much estrogen. She proposed that when there is insufficient progesterone in the body following ovulation, it is diverted from the adrenal glands. The adrenals produce a number of hormones collectively referred to as corticosteroids. They function in the regulation of certain bodily functions such as the amount of water in body tissues, the sodium/potassium balance and the blood sugar level. Progesterone is a precursor of these corticosteroids and is therefore produced in the adrenal glands throughout the menstrual cycle. Progesterone is also produced by the ovaries in the second half of the menstrual cycle, following ovulation. If insufficient progesterone is produced after ovulation, it is diverted from the adrenals at the expense of the development of other corticosteroids. There is a resulting shortage of one or more of these other corticosteroids and this accounts for the symptoms of congestive dysmenorrhea. For example, faintness and changes in appetite may result from a drop in the blood sugar level.

In addition to the water retention symptoms, women may experience symptoms which result from a depletion of corticosteroids not directly involved in the balance of water in the body. Negative affect symptoms of premenstrual tension which accompany congestive dysmenorrhea may be the
result of too much potassium in the fluid surrounding the cells and too much sodium within them (Dalton, 1969).

Congestive dysmenorrhea has a much longer time course than spasmotic dysmenorrhea. Symptoms usually begin to appear shortly after ovulation, up to ten days before onset of the menstrual flow, though they are usually relieved when the flow commences.

As with spasmotic dysmenorrhea sufferers, Dalton noticed that certain characteristics typify those women who have congestive dysmenorrhea. Physically, they appear to have more highly developed sexual characteristics than their spasmotic counterparts. She also described these women as expressing a desire for large families and generally exhibiting maternal behavior.

Dalton's theory of too little progesterone in relation to too much estrogen as the cause for congestive dysmenorrhea appears to account for certain factors regarding reproductive physiology. For example, premenstrual symptoms occur at a point in the cycle when progesterone should be present in high levels. When menstrual flow commences, a time when the level of progesterone naturally drops, premenstrual symptoms also abate. Additionally, many women begin to experience premenstrual symptoms only after the birth of their first child. During pregnancy, the placenta is producing extra progesterone. Following birth, there is a sudden withdrawal
of this high level and the hormone may not return to the
level it was at prior to the pregnancy (Lever, 1981).

Dalton's suppositions have recently received empirical
support. A group of British investigators have used
radio-immunoassay to determine the levels of ovarian
hormones in women who reported that they experienced
premenstrual symptoms. They found that some women had
normal estrogen levels but were progesterone deficient, some
had normal levels of progesterone but an overabundance of
estrogen, and still others were both progesterone deficient
and had excessive amounts of estrogen (Brush, 1977).

In addition to these findings regarding the balance
between estrogen and progesterone a third hormone,
prolactin, has been implicated in the etiology of
premenstrual symptomatology. Some of the women were found
to have an abnormally high level of prolactin in their blood
during the premenstrual phase of the cycle. Prolactin is
secreted by the pituitary gland. It is present in high
quantities at birth to cause milk production. The level of
prolactin remains high for a couple of months following
parturition, the time during which many women experience
postpartum depression. The level drops when menstruation
again commences, an event that also frequently relieves the
premenstrual symptoms (Budoff, 1980).

Prolactin appears to influence the production of
estrogen and progesterone. Additionally, too much prolactin
in the blood can disrupt the balance between these hormones. Prolactin has also been associated with water retention (Lever, 1981).

Carroll and Steiner (1978) propose an interaction model between prolactin and the ovarian hormones to account for premenstrual symptomatology. "Premenstrual depression may result from high levels of prolactin, in conjunction with low levels of estrogen, or relative progesterone dominance. Premenstrual irritability-hostility may result from high levels of prolactin in association with low levels of progesterone" (p. 175). By distinguishing between the different types of negative affect, they propose a more precise etiology may be arrived at. Their model extends further with different combinations of these three hormones to account for mid-cycle mood elevation, late pregnancy mood elevation, postpartum depression, and menopausal dysphoria.

Vitamin B6, or pyridoxin, deficiency has been implicated as a possible cause of imbalances of hormones that lead to premenstrual symptoms. Pyridoxin is essential to the proper production of the ovarian hormones. In addition, by causing harmful effects on the pathways in the hypothalamus and those that connect it to the pituitary, a shortage of pyridoxin is thought to cause imbalances in production of serotonin and dopamine. Dopamine inhibits the production of prolactin and when it is not present in sufficient quantities excessive prolactin is produced,
leading to adverse effects on the ovaries, breasts and perhaps the balance of bodily fluids. In addition, a lack of sufficient serotonin causes by a pyridoxin shortage could account for premenstrual depression, part of the premenstrual tension syndrome (Lever, 1981).

Budoff (1980) believes that the reason that no definitive explanation has been discovered regarding the etiology of premenstrual symptoms is that scientists have been too narrow in their search for underlying biochemical mechanisms. She proposes that a complex set of biochemical interactions is involved in premenstrual distress. Specifically, changes in the ratios of estrogen, progesterone and prolactin lead to the release of secondary substances in the body. These substances are most likely prostaglandins and they, in turn, effect the amount of chemical transmitters in the brain, in addition to causing their own symptoms, such as pain and tenderness. This would account for Dalton's earlier assertion that premenstrual physical symptoms are invariably accompanied by the premenstrual tension symptoms.

As yet there is no universally accepted physiological theory or etiology of congestive dysmenorrhea or premenstrual tension. As with spasmotic dysmenorrhea, the syndrome is treated with drugs that act on the system that each researcher holds accountable for the symptoms. These techniques will be reviewed in the treatment section.
Personality Variables and Menstrual-related Distress

The previous section outlined current speculation regarding the physiology of menstrual-related symptoms. It is becoming increasingly apparent that physiology alone is not sufficient to account for the subjective reports of menstrual symptomatology. Evidence is accumulating which suggests that psychological variables can have a profound effect on the female reproductive system in general and the menstrual cycle in particular.

Psychogenic menstrual distress. Though most women experience some sort of menstrual-related distress over the course of their reproductive lives, most are able to function normally and cope with the symptoms they experience. However, some women experience symptoms so profound that they interfere with their ability to participate in daily activities. The previous section outlined the current physiological explanations for these severe symptoms. Others have speculated that there is an interaction between the physiology and the psychology of the individual, that the individual's attitudes toward herself as a woman and toward the process of menstruation in particular can greatly influence her experiences with the monthly cycle.

The most dramatic example of the interaction between psychological and physiological variables in the etiology of reproductive dysfunction is pseudocyesis, or false
pregnancy. In the most extreme form of this disorder, the individual exhibits all of the signs of pregnancy and after nine months may actually begin to experience labor pain, although there is no fetus. Depression is the inevitable accompaniment of this disorder.

It has been suggested that the mechanism for this phenomenon involves the complex relationship between biogenic amines, such as epinephrine, and the gonadotropin regulatory system. Depression has been associated with a decrease in the production of biogenic amines. These amines are essential to the release by the median eminence of the hypothalamus of the hormones which stimulate the anterior pituitary to release FSH and LH. When there is an insufficient amount of the amines, this results in the underproduction of FSH and LH and this, in turn, leads to amenorrhea, the cessation of the menstrual flow. This appears to be the chemical mechanism underlying this complex psychophysiological condition.

Indirect evidence to support this theory has resulted from the examination of side effects from the drug reserpine that is sometimes given for hypertension. Reserpine apparently reduces the amount of biogenic amines and thereby causes severe depression in some patients that is indistinguishable from naturally occurring depression. When the drug is withdrawn, the depression is relieved. Reserpine has been shown to induce lactation and amenorrhea
in humans, both of which represent changes in hormone levels that are a direct result of the lowered amount of biogenic amines caused by the drug (Brown & Barglow, 1971). Researchers agree that the key to understanding psychogenic dysfunction in the female reproductive system will probably be in the association between the biogenic amines and gonadotropin regulating systems (Reichlin, 1979).

It is becoming increasingly clear that the female reproductive system can be effected by psychological factors less severe than depression. There are numerous examples in the clinical literature of the powerful effect that negative attitudes may exert on the experiencing of menstrual-related distress. For example, Mullen (1968) presents a case study of spasmotic dysmenorrhea in a 31-year-old woman that strongly points to psychogenic factors in the etiology of this patient's distress. Each month this woman experienced cramps so severe that she was completely debilitated. She had not responded to any physical treatments and even hypnosis had not relieved her disabling pain. Mullen took a detailed history and discovered that this woman had many conflicts surrounding womanhood in general and menstruation in particular. He decided that her anxiety was largely responsible for her symptoms and treated her with systematic desensitization. Her pain was greatly relieved. This case inspired other researchers to treat dysmenorrhea with behavioral methods, which will be reviewed in more detail in
the treatment section. Mullen noted that a major difference observable in this patient following her treatment was a substantial change in her attitude toward menstruation from one that was essentially negative to a more positive outlook. In this individual, it is apparent that psychological variables were almost solely responsible for her discomfort.

**Personality variables and symptom reports.** Decades prior to Mullen's (1968) work, researchers were attempting to demonstrate a link between personality variables and menstrual-related symptomatology. This work began as a result of clinical descriptions of a negative affect syndrome that accompanied the premenstrual cycle phase, variously labeled premenstrual tension (Frank, 1931) and the premenstrual syndrome (Green & Dalton, 1953).

An early investigator in this area was Rees (1953a). In an attempt to assess a wide range of neurosis and emotional stability, he chose a sample of 84 women who were attending outpatient psychiatric and psychosomatic clinics. He contrasted this group with a group of 61 "normal" women. Each woman received an extensive clinical interview regarding personal and menstrual history. The control group was given standardized questionnaires to assess the degree of neurosis present, as Rees felt that there was no sharp dividing line between normalcy and neurosis. Finally, each woman kept daily symptom records throughout the course of
several menstrual cycles. Rees then rated all of this information to obtain an index for each subject as to the degree of premenstrual tension present, existing neurosis, general adjustment, and personality stability.

He found that a) the patients in the study evidenced a significantly higher degree of premenstrual tension than did the control group; b) within the control group, there was no relationship between severity of premenstrual tension and degree of personality stability or neurosis; c) when neurosis and premenstrual tension co-existed, there was a positive correlation in the degree of severity of the two syndromes. He concluded that premenstrual tension may exist in women with little or no evidence of personality instability or neurosis, and that the syndrome is primarily due to bodily changes rather than being psychogenic in origin.

He strengthened his contentions in this and a later study (Rees, 1953b), by treating women who complained of premenstrual tension. He noted that some neurotic women experienced relief of their premenstrual tension following hormone treatments with no significant improvement in their neurotic condition and, conversely, some neurotic women improved with psychotherapy with no relief of their premenstrual symptoms.

Rees proposed that there is an interaction between premenstrual tension and personality variables. He stated
that how an individual will react to her symptoms may influence her overall degree of discomfort. This reaction is based on such things as her attitudes toward menstruation which are formed by her history with symptoms as well as social and religious taboos. Based on this theory of interaction between bodily changes and reactions to them, Rees proposed that treatment should be multidimensional, with hormone and/or pharmacotherapy being supplemented by psychotherapy. The psychotherapy should attempt to assist the individual to understand the premenstrual tension syndrome and to modify her attitudes about and reaction to it. This would minimize the degree of discomfort and disability an individual would experience. By advocating multidimensional treatment, Rees in many ways anticipated the multimodal treatment to be advocated several decades later, which will be discussed in the treatment section of this review.

Later researchers offered what they see as a clarification of the relationship between personality variables and menstrual-related symptoms. Coppen and Kessell (1963) randomly selected over 500 women who were patients of various English gynecologists. They asked each woman to rate a number of menstrual symptoms and gave each one the Maudsley Personality Inventory (Eysenck, 1959). They discovered that premenstrual negative affect symptoms such as irritability and tension correlated positively with
neuroticism, as assessed by this measure. This relationship held even when any overlapping symptoms were removed from the Maudsley. They concluded that "...a woman who complains of premenstrual irritability is more likely to be irritable at other times as well... (and it therefore seems that) ...premenstrual symptoms are an exacerbation of personality traits which in turn are related to neuroticism" (p. 71). Dysmenorrhea was not related to neuroticism, as assessed by this measure. Coppen and Kessel stated quite clearly that they did not feel that premenstrual tension could be regarded simply as hypochondriacal or hysterical complaints in neurotic women but rather that the syndrome might exacerbate personality characteristics. Further, they noted that though the incidence of this difficulty was fairly high in their sample, most women did not seek aid for the symptoms. They proposed that symptom severity alone would not determine if a woman would seek aid, but rather individual characteristics would play a large part in this decision-making process.

Grub and Rohrbauch (1975) continued with the effort of these early researchers to relate personality variables to menstrual-related symptoms. They hoped to refine the idea that these variables might be more closely related to some menstrual cycle symptoms than to others. They administered the Moos Menstrual Distress Questionnaire (Moos, 1978) and the MMPI to 60 undergraduate women. This is the sample that
remained after parity, oral contraception usage, F-K raw score within the range of +11 to -11, and ability to follow instructions were used as control variables. All of the women were given the questionnaires one week after onset of their most recent menstrual cycle. They discovered that MMPI indices correlated significantly with premenstrual pain, premenstrual negative affect, premenstrual and menstrual autonomic reactions and menstrual behavior change. MMPI scales that were involved were Hs, Hy, Pt and Sc. They conclude that their results confirm those of Coppen and Kessel's (1963), that premenstrual tension is correlated with measures of neuroticism.

Researchers continued to propose that personality variables interact with the experience of menstrual-related symptoms in determining how a woman will react to the bodily changes that she perceives. Halbreich and Kas (1977) defined premenstrual symptoms much more restrictively than previous work by stating that they must appear in this cycle phase and be relieved at menstrual onset. They then compared a sample of 28 women whose experiences fit this definition with a group of 22 control women on the Taylor Manifest Anxiety Scale. They tested all subjects over the course of a menstrual cycle. Results indicated that although the scores of the control group did not vary significantly over the course of the cycle the scores of the premenstrual tension women rose sharply during the
premenstrual phase. The difference was particularly noticeable in the week prior to menstrual onset (25.61 vs. 13.61, \( p < .01 \)). Because of the fluctuation in these women's scores over the course of the cycle, Halbreich and Kas proposed that this scale was not measuring state anxiety for these women but rather what was probably being measured was a "...reactive disposition to respond with anxiety" when confronted with a stressful situation (p. 392).

Interestingly, further study of these premenstrual tension sufferers (Halbreich, Assael, Ben David, & Bornstein, 1976) indicated that these women also evidenced higher serum prolactin levels than the control group.

Taylor (1979) continued along this line of inquiry, that an individual's personality style will determine her reaction to menstrual-related symptoms that she experiences. He proposed that such variables as attitudes toward menstruation will determine this reaction. Therefore, though the actual symptoms may be within medically "normal" limits, some women will subjectively experience the symptoms as more severe than women who are not so acutely aware of bodily changes. He further predicted that these women could be expected to obtain a high score on tests on which neurotic women also receive high scores.

He administered the Sixteen Personality Factor Questionnaire (16PF), a neuroticism scale and daily symptom ratings to 45 volunteer and 45 non-volunteer student nurses.
He discovered that a) there was no difference in 16PF scores between subjects in different phases of the menstrual cycle or between volunteer and non-volunteer subjects; b) there was a significant positive correlation between self-reported premenstrual negative affect scores and scores on the neurotic assessment inventory; and c) fifteen subjects who self-reported two or more severe premenstrual symptoms differed from other subjects on the following 16PF scales: L(suspicious), O(apprehensive), Q4(tense), C(easily upset), N(artless), and Q3(undisciplined). No relationship with daily reports of somatic symptoms and 16PF scores was discovered. Taylor concluded that the pattern of results confirmed his hypothesis; that some women are particularly sensitive to perimenstrual changes and will therefore report high symptom levels. He agreed with the prediction of Coppen and Kessel (1963) that most of these women would not seek treatment for the symptoms, but that those who do could be expected to score high on tests on which neurotic individuals also score high.

Moos (1978) extensively studied the patterns of responses on the Menstrual Distress Questionnaire that he developed in 1969. He concluded that psychological symptoms are probably a result of the individual's reaction to physical symptoms. He based this hypothesis on the observation that in only 13 percent of the cases studied did psychological symptoms occur alone.
Most of these researchers have found a link between premenstrual negative affect and personality variables. Golub (1980) noted that though researchers may have found changes on personality measures that accompany this cycle phase, these changes have been largely at a subclinical level. She tested this hypothesis further with her own research, choosing to study those women thought to have the most severe levels of premenstrual negative affect, those women over age 30. She tested 50 women over the age of 30 on several personality tests, including the Adjective Check List (Gough & Heilbrun, 1965), and measures of state and trait anxiety and depression. Half of the women were tested premenstrually first and then intermenstrually, and the other half were tested in the opposite order. She discovered that there were no significant correlations between trait anxiety and premenstrual state anxiety or depression. This again confirms the earlier research that found that those women who experienced a high level of trait anxiety were not necessarily those who would also experience a great degree of premenstrual negative affect. Though there were premenstrual changes in negative affect, they were largely subclinical. Changes were noted in the premenstrual phase for three of the Adjective Check List scales, Unfavorable Adjectives Checked ($F_{4.55, .05}$), Aggression ($F_{4.11, .05}$), and Counseling Readiness ($F_{6.23, .02}$). Chi square tests on specific adjectives
noted significantly greater tendency to choose the adjectives, anxious, dull, impatient, intolerant, nervous, quarrelsome, talkative, and tense in the premenstrual cycle phase. Conversely, the adjectives warm and peaceable were more often noted in the intermenstrual cycle phase. Due to the pattern of responses on state vs. trait measures included in this study, Golub concluded that the changes in personality noted on the Adjective Check List were largely a reflection of transient changes in mood which accompany the premenstrual cycle phase. Women who experience the largest changes in mood also apparently experience the greatest personality changes as a result, though for the majority of women the changes were minor.

Another group of researchers began to focus on variables that might be more closely related to the experience of menstruation itself rather than to the more global areas of personality, such as those discussed above. It has become increasingly clear that a woman's attitudes toward menstruation, based on such things as early learning and cultural influences, may impact greatly on her reaction to bodily changes that accompany the menstrual cycle.

**Attitudinal Influences on Menstrual-related Distress**

*Origins of menstrual attitudes.* With the discovery of the relationship between negative attitudes and other psychological variables with menstrual-related discomfort in severe cases such as those described above researchers
became interested in the origins of these variables. Though individual learning experiences vary greatly, there are apparently similar experiences women share regarding their introduction to the phenomenon of menstruation which shape their attitudes.

Most young girls learn about menstruation from their mothers and from their schools. Menstrual hygiene is an official part of the curriculum of many elementary and junior high schools. Whisnant, Brett, and Zegans (1975) recently surveyed the materials presented to adolescent girls concerning menstruation. They point out that many of the materials are published by manufacturers of sanitary products and are subjected to extensive marketing research. Therefore, the view of menstruation that they present may be taken to be fairly representative of what society feels is appropriate to instruct its youth on the subject.

Several aspects of these materials appear to be worth noting. First, most present technical words to describe the internal organs of the female reproductive system, but there is no discussion of the external physiology or the relationship between anatomy and sexual functioning. Second, there is no discussion of the young girl's emotions or changing roles in relation to others. Third, although menstruation is presented as a positive sign of growing up, it is also presented as a hygienic challenge. Girls are advised that if they take all the proper precautions, no one need guess
that they are menstruating. They are additionally advised that they should keep a positive attitude about the whole thing, ignoring any symptoms that they might experience. The authors point out that, "...a girl achieves a positive mental attitude in part by not attending to her own sensations" (p. 817).

In a related piece of research (Whisnant & Zegans, 1975), a random sample of pre- and post-pubescent girls were extensively interviewed to determine their attitudes toward menstruation. The findings may be directly related to the view of menstruation presented by the materials that represent many young girls' introduction to menstruation.

First, though many of the girls felt that they were quite knowledgeable regarding the anatomy and physiology of the adult female, most actually possessed only superficial information. Though most could name the major internal reproductive organs, few had a true understanding of how they related to one another and fewer still had any knowledge of the external organs. Thus, there was incomplete knowledge and a failure to assimilate the knowledge that they had.

Secondly, both girls who had not experienced their first menstrual cycle and those who had recently begun to menstruate at the time they were interviewed expressed feelings of fear and confusion about what they perceived to be their changing roles in relation to their friends and
family. Yet, they were unable to clearly express these feelings and few had been able to talk with anyone about them.

Finally, a difference in attitude was found between these two groups of subjects in the degree to which they felt comfortable discussing menstruation. The pre-pubescent girls expressed more positive feelings, stating that they would feel free to tell their family and friends when the event occurred, viewing menstrual onset as a sign of growing up. The young women who had already begun to menstruate, however, presented a decidedly more negative view. They were secretive about the fact that they were menstruating, usually only telling their mother or best friend. Presumably, when actually confronting the event, they carried out the instructions in the booklets that they must be careful not to let anyone know. This group of young women expressed the feeling that since there is nothing one can do about it, one should silently tolerate menstruation. The authors conclude that this negative attitude is fostered by society's reluctance to deal with the affective component of the onset of menstruation and to the view that menstruation is a hygienic challenge that must be efficiently and silently dealt with. It is possible that this early socialization may lead to pervasively negative attitudes toward menstruation which may predispose the individual to interpret normal body sensations as extremely
adversive events. In certain cases it may serve as the substrate for debilitating psychological and physiological distress.

**Attitudes and symptom reports.** Although attitudes toward menstruation appear to have a significant effect on the subjective experience of menstrual-related symptoms, studies that directly measure attitudes are rare. Most of the work that has been done has indirectly measured attitudes by various experimental manipulation, rather than directly measuring attitudes themselves. Brooks, Rubel, and Clark (1977) review the work that has been done and conclude that there seems to be fairly clear societal beliefs regarding menstrual-related symptoms.

A typical study of this type is carried out by having subjects report the symptoms that they or others experience in relation to the menstrual cycle. Many of the studies use the Moos Menstrual Distress Questionnaire, or MDQ (Moos, 1977). The questionnaire consists of 47 symptoms reported to be associated with the menstrual cycle. Subjects rate on a 6-point scale the severity of each symptom over the intermenstrual, premenstrual and menstrual cycle phases. The 47 symptoms can be divided into eight symptom scales. Various manipulations have been carried out using this scale which indicate that there is an association between attitudes toward menstruation and symptom reports.
For example, in one study (Ruble, 1977), one group of women were told that they were in their premenstrual cycle phase and another group was told that they were in the intermenstrual phase. The two groups were then compared on the MDQ. It was discovered that although both groups were actually in the same cycle phase when completing the questionnaire, the group that had been told that they were in the premenstrual cycle phase responded with a higher level of symptomatology on those items most often thought to be associated with that cycle phase. This is taken as indirect evidence that beliefs about menstruation have an effect on self-reports of menstrual-related symptoms. Many researchers state that it is obvious that the MDQ and other such self-report measures are biased and therefore represent an inappropriate assessment approach to the study of menstrual symptoms. Brooks et al. (1977) point out that although these self-report measures appear to be biased, they should not be dismissed. Rather, the attitudes that they apparently reflect should be carefully studied as they might relate to a woman's behaviors and feelings about herself.

In order to further elucidate the different attitudes that women have toward menstruation, these researchers constructed the Menstrual Attitudes Questionnaire, or MAQ (Brooks et al., 1977). The questionnaire consists of 46 items dealing with menstruation that subjects are asked to
rate on a 7-point scale according to their degree of agreement with each item. The original sample they measured was comprised of 191 Princeton University students. Most of the students were in their first two years of college and birth control usage was not controlled for. Each subject was asked to fill out the Moos MDQ two times, once as if they were in the intermenstrual phase of their menstrual cycle and once as if they were in the premenstrual phase. The administrations of the MDQ were counterbalanced and the order in which subjects answered was later found not to have a significant effect on symptom ratings. Each subject also took the MAQ.

Using varimax rotation, five different attitude dimensions were isolated on the MAQ: (a) menstruation as a psychologically and physically debilitating event, (b) a positive event, (c) a bothersome event, (d) a predictable event, and (e) an event that has no effect on one's behavior (termed denial by the authors).

These attitude dimensions were found to be differentially related to symptom reports on the MDQ. The attitudes of menstruation as bothersome and positive were not related to the cycle effects subjects were asked to anticipate. Those who denied the effects of menstruation reported a significantly lower level of symptoms than subjects that did not deny the effects. Those subjects who endorsed the attitude that menstruation was debilitating and
predictable reported significantly more severe symptom levels for the premenstrual cycle phase than women who did not express these beliefs. In addition, it was discovered that length of the flow phase of the cycle was positively related to reported severity of symptoms (using premenstrual-intermenstrual score as the indication of severity of symptoms) on the MDQ scales of pain ($r = 0.21, p < 0.01$), concentration ($r = 0.32, p < 0.01$), behavior change ($r = 0.18, p < 0.01$), and control ($r = 0.51, p < 0.01$). Length of the flow phase was negatively related to perceiving menstruation as a positive event ($r = 0.22, p < 0.01$), and intensity of the flow phase was positively related to perceiving menstruation as debilitating ($r = 0.19, p < 0.01$). These latter two findings illustrate a fairly clear relationship between the experience of menstruation and attitudes toward it.

The discovery of a relationship between perceiving menstruation as debilitating and predictable with the severity of anticipated menstrual-related symptoms may also reflect subjects' experience with menstruation. The item content of the attitude dimension that expresses the belief that menstruation is debilitating closely resembles experiences expressed by spasmotic dysmenorrhea sufferers. The item content of the attitude dimension that expresses menstruation as a predictable event represent items frequently endorsed by congestive dysmenorrhea sufferers.
This may in part account for the relationship found between these attitudes and symptom severity on the MDQ. This question remains to be investigated.

The authors conclude that attitudes toward menstruation appear to be multidimensional. They continue that though the negative aspects of menstruation have frequently been emphasized in the literature, the results they obtained indicate that it is perceived of as at least slightly positive by 77 percent of the women in their sample.

In a related study designed to replicate and expand on their initial work, Brooks-Gunn and Ruble (1980) administered the Menstrual Attitudes Questionnaire to additional samples. They compared the results of this study with the initial study. For this second study, the MAQ was reduced to 33 items from the original 46 on the basis of the factoring structure of the original sample. A major focus of interest was the relationship between attitude dimensions and symptom reports, as measured by the MDQ.

Sample 1 consisted of the original sample from the first study (Brooks et al., 1977). Sample 2 consisted of 154 college women drawn from three state colleges in New Jersey. As was true of Sample 1, most of these women were freshmen or sophomores and oral contraceptive usage was not controlled for. Sample 3 consisted of 82 college men drawn from the same colleges as the women in Sample 2. They were asked to respond to the questionnaires as they thought women
would. The final sample consisted of 36 pre-pubescent and 36 post-pubescent girls drawn from public schools in New Jersey. This sample answered a revised version of the MAQ that was thought to be more appropriate to their age group.

The revised MAQ used for samples 2-5 retained all of the original attitude dimensions as the original 46-item form. The dimension of menstruation as a positive event was retitled menstruation as a natural event, as this title was thought to more closely reflect the item content of this dimension.

Samples 2-5 filled out the revised MAQ. In addition, in order to examine the relationship between attitudes and symptom reports, Sample 2 filled out the MDQ. The original sample had filled out the MDQ in counterbalance fashion, once "as if" they were in the intermenstrual phase and once "as if" they were in the premenstrual phase of the cycle. Sample 2 responded to Form A of the MDQ which asks women to respond to the 47 symptoms according to the degree to which they experienced the symptom over the course of their last menstrual cycle (Moos, 1977). Symptoms are rated for the intermenstrual, premenstrual, and menstrual cycle phases. Difference scores were obtained by subtracting the intermenstrual rating for each symptom from the rating given for the menstrual and then for the premenstrual phases. This was done in an effort to control for overall tendency to complain of symptoms without regard to cycle phase.
Some interesting results were obtained regarding the attitude dimension of denial of the effects of menstruation. College women denied the effects to a greater extent than the college men. However, the adolescent sample denied the effects of menstruation to an even greater extent, even though this same sample rated menstruation as being more debilitating than college women. The authors speculate that this may be due to the influence of the materials used to educate these young women about the menstrual cycle. As pointed out above, the message of these publications is that menstrual changes should be ignored.

Sample 2 was examined to determine the relationship between attitudes toward menstruation and symptom reports as measured by the MDQ. As was true of the original Sample 1, the attitude dimensions of menstruation as bothersome and as a natural event were not related to symptom reports. Relationships were found between other attitude dimensions and symptom reports, however. First, women who perceived menstruation as debilitating reported consistently higher symptom levels than women who did not endorse this attitude. This was true of both samples of women and the effect was independent of the frame of reference, regarding the time in the menstrual cycle the samples were given in which to rate their symptoms. Second, women who perceived menstruation as predictable reported higher symptom levels on all scales of the MDQ except Arousal and Control than women who did not
feel that it was predictable. Third, women in Sample 2 who denied the effects of menstruation reported less severe symptoms than women who did not deny the effects.

As in the original study, it was again demonstrated that attitudes toward menstruation appear to be multi-dimensional. Menstruation was not viewed as completely negative, though only a small percentage of women in Samples 1 and 2 denied the effects. Only one third of the women viewed menstruation as debilitating. In addition, symptom reports of menstrual-related distress appear to be differentially related to attitudes toward menstruation. Those women who tend to deny the effects of menstruation report a significantly low level of symptom severity ($r$ values were calculated for individual scales of the MDQ and most were significant at the 0.01 level); women who perceive menstruation as predictable and debilitating score significantly higher on the MDQ (again, most $r$ values were significant at the 0.01 level); women who view menstruation as natural and as bothersome as a group produce a symptom pattern on the MDQ that is unrelated to these attitudes.

The development and use of the Menstrual Attitudes Questionnaire again emphasizes the point that a woman's experience with regard to her menstrual cycle is complex and involves an interaction between physiology and such psychological factors as her attitudes toward menstruation. These attitudes could themselves be the target of
therapeutic intervention to relieve menstrual-related distress.

Menstrual attitudes and help-seeking. The previous sections illustrated how a woman's attitudes toward menstruation can effect her menstrual-related experiences and how they may be related to the symptoms that she reports in relation to her menstrual cycle. Recent findings indicate that other people's attitudes toward menstruation may influence their perception of a woman who complains of menstrual-related distress. This in turn may further influence how the dysmenorrhea sufferer views herself.

Ruble, Boggiana, and Brooks-Gunn (1980) compared subjects' impressions of a situation in which a woman attributed her irritable behavior toward a friend to the menstrual cycle with their attitudes toward menstruation, as measured by the MAQ. Subjects who endorsed the attitude that menstruation is debilitating were more accepting of this explanation for the behavior than were subjects who denied the effects of menstruation. Presumably, these latter individuals would be less sympathetic with women who complain of menstrual-related distress than would those who accept the notion that menstruation can cause severe discomfort. As pointed out in a previous section, this lack of acceptance can lead the individual to attempt to ignore her own sensations and inhibits her from talking to others about how she feels.
It follows that individuals who feel ashamed or otherwise reluctant to discuss their experience of menstrual-related distress would be reluctant to seek out treatment for their symptoms. For example, though the adolescent group in the Brooks-Gunn and Ruble (1980) study reported above perceived menstruation as debilitating to a greater extent than any of the other groups of subjects tested, they also were the most likely group to deny the effects of menstruation. The authors speculate that this is the direct result of the educational materials to which these young women are exposed, which emphasize that menstrual-related changes should be ignored. It would seem that these young women would be reluctant to seek assistance for menstrual-related distress. This is consistent with the earlier findings of Whisnant and Zegans (1975) who found that girls who had recently begun to menstruate were secretive about this fact. Additionally, they expressed an attitude of resignation regarding menstruation, i.e., that there is nothing one can do about it.

In a recent study (Chernovetz, Jones, & Hansson, 1979), it was predicted that to the extent that individuals were embarrassed by menstruation, they would be inhibited from discussing the phenomenon with others. It was discovered that the individuals who endorsed a more traditional feminine role were also inclined to report experiencing more severe menstrual-related distress, as measured by the MDQ (r
In addition, these individuals indicated that they would not be willing to participate in further research studies where menstruation would be more publicly discussed. The authors feel that the implication of this finding is that some women who experience the most severe degree of menstrual-related distress may be less likely to seek situations in which their symptoms could be discussed openly. Therefore, those who could most benefit from medical attention, counseling or group sharing of experiences might be reluctant to do so, due to negative attitudes and embarrassment. If this approach to menstrual-related problems is widespread, it could interfere with the delivery of health care to women who need it most and should be a cause for concern among professionals who are involved in treatment of menstrual distress.

**Treatment Alternatives**

The following represents a brief overview of treatment alternatives that have been tried to alleviate dysmenorrhea. These treatment methods have been studied by various researchers but are not necessarily being offered to the public at the present time. For purposes of clarity, the section will be organized in terms of self-administered, medical and behavioral treatments under the headings of spasmotic and congestive dysmenorrhea.
Self-administered Treatment

Spasmotic dysmenorrhea. There are several "home remedies" that women have employed to relieve the cramps of spasmotic dysmenorrhea. For example, it is generally accepted that applying heat to the abdomen in the form of a heating pad or hot bath is mildly effective. Apparently this treatment is so universal among spasmotic sufferers that it is included on the Menstrual Symptom Questionnaire (Chesney & Tasto, 1975a) as a defining symptom of spasmotic dysmenorrhea. Relief is probably obtained by increasing the blood flow to the uterus.

Aspirin has long been used to relieve the pain of cramping and is mildly effective with moderate amounts of pain. As Budoff (1980) explains, this common drug is a mild antiprostaglandin and she suggests that it is as effective if not more so than most nonprescription remedies that are currently available to fight cramps. These remedies usually contain aspirin and may also contain antihistamines for sedation, caffeine for stimulation, and antispasmodics such as cinnamedrine. The most well known of these preparations is Midol, which contains aspirin, caffeine, and cinnamedrine. The ingredients other than aspirin are usually present in small dosages in these preparations and their primary effectiveness is probably due to the presence of the aspirin (Budoff, 1980).
Many of the publications prepared for young women by the sanitary products companies recommend that sensible diets, rest, and exercise are effective coping strategies to deal with menstruation. It is doubtful that these treatments are an effective way of dealing with severe cramping, though they may assist the individual in maintaining overall good health.

It has been suggested that methods for increasing uterine blood flow other than the application of heat might prove effective in relieving cramps. Such things as orgasm and massage may ease mild cramping but do not alleviate the symptoms of spasmotic dysmenorrhea.

**Congestive dysmenorrhea.** Unlike spasmotic dysmenorrhea where there is a relatively clear relationship between a physiological process, i.e., menstrual onset, and the symptoms, the symptoms which accompany congestive dysmenorrhea appear as much as two weeks before menstrual onset and are more diffuse. As pointed out elsewhere, these symptoms may vary widely from one individual to the next and may therefore not be associated with to the menstrual cycle by the individual sufferer.

It seems apparent that one premenstrual symptom that is easily recognizable by most women is water retention. This is reflected in the television advertisements for over-the-counter remedies for this fluid build up, such as Pamprin. These preparations usually contain a diuretic which
stimulates the kidneys to excrete excess fluid. Again, these ingredients are present in relatively small proportions (Budoff, 1980).

Budoff (1980) recommends that women treat individual symptoms of congestive dysmenorrhea while they wait for scientists to discover more about the syndrome. For example, women who experience water retention are advised to limit salt intake for a week to 10 days prior to menstrual onset. This includes not only limiting salt that is added to food when it is served but also restricting foods that are high in sodium content such as soups and canned vegetables.

In addition, Budoff recommends avoiding foods that contain caffeine or other such substances that belong to a group of compounds known as xanthines. Common foods that contain these compounds are coffee and tea, colas and chocolate. Though they cause a stimulant effect, they additionally cause nervousness and insomnia, irritability and shakiness. Noting Minton, Foecking, Webster, and Matthews' 1979 study in which xanthines were linked to the development of breast cysts, Budoff hypothesized that they increase breast cell activity. She and a group of her patients gave up all such substances containing these compounds and noticed that premenstrual breast tenderness was reduced. She suggests that women try an experiment of
giving up foods that contain xanthines and note if they experience relief from this premenstrual symptom.

Recently there has been an explosion in the media regarding congestive dysmenorrhea under the nickname PMS (premenstrual syndrome). Budoff's (1980) book is now available in paperback. With the assistance of Dr. Michael Brush, Lever (1981) has published a book that is available to the public in most bookstores in which she explains the physiology of premenstrual distress and suggests ways of coping with it. There have been numerous talk shows and panel discussions on the topic, both on the television and radio, as well as articles in newspapers and magazines. Women are now being encouraged to talk about this subject that for so long has not been considered a topic for public discussion. They are being encouraged to seek treatment and to variously cope with symptoms that appear. Though at present the popular treatments being offered afflicted women are common sense approaches to individual symptoms, women are receiving the message that menstrual-related symptoms are legitimate and worth talking about. This change in society's approach to menstrual-related phenomena should eventually have a positive effect on the way in which women view themselves and their reproductive physiology.

Medical Treatment

Spasmotic dysmenorrhea. For the last three decades, the English physician Katherina Dalton has been
administering hormones or synthetic hormones to her patients who report experiencing dysmenorrhea. The patient is asked to keep a careful record of the type of symptom that she experiences and the timing in relation to the menstrual cycle within which she experiences the symptom. When over the course of several cycles it is determined that the symptoms are of the spasmotic type and are not due to any physical abnormality, estrogen is administered. The theory behind this is that the spasmotic symptoms are due to a hormonal imbalance with a relative lack of estrogen in relation to progesterone. The dosage is varied over the course of a few months until the optimum level is reached and then treatment is gradually terminated. Dalton (1969) felt that the treatment worked by increasing the size and musculature of the uterus which relieves the cramping caused by the expulsion of the menstrual material through an inadequate opening. Dalton's work represents several hundred individual case studies where most women experienced relief from their symptoms after several months of treatment.

Oral contraceptives have also been administered to women who suffer from spasmotic dysmenorrhea. Combination pills, those containing both progesterone and estrogen, are administered in the manner that they would be for contraceptive purposes, one tablet daily for the first three weeks of the cycle. These preparations are thought to be
effective because they inhibit ovulation. When ovulation
does not occur, there is no time in the cycle when
progesterone predominates. The amount of prostaglandin
contained in the menstrual fluid is reduced, as is uterine
motility. Ylikorkala and Dawood (1978) review the results
of several studies that demonstrate significant symptom
relief in women treated with combination contraceptive
pills. However, Budoff (1980) expresses the opinion shared
by many that it is unwise to treat women with hormonal
preparations for three weeks every month unless they are
desired as a method of contraception. Even though they may
provide secondary relief of dysmenorrhea symptoms, she feels
there is no need to treat women over the course of weeks for
symptoms that last only a few days. In addition, there are
certain risks associated with the use of these preparations
that caution against their unwarranted administration.

As the role of prostaglandin in spasmotic dysmenorrhea
has become known, researchers have begun to investigate the
usefulness of drugs that inhibit production of this
substance in the treatment of the disorder. For many years
it has been observed that aspirin inhibits menstrual-related
pain. Aspirin is an anti-inflammatory drug that inhibits
the manufacture of prostaglandin. Other nonsteroidal anti-
inflammatory drugs such as indomethacin and the fenamates
have proven to be even more effective. In addition to the
inhibition of the manufacture of prostaglandin, they also
inhibit its action on smooth muscle. In their review of several studies, many of which include placebo control trials, Ylikorkala and Dawood (1978) conclude that despite differences in assessment of symptom change, this group of drugs has proven to be most effective in the treatment of spasmotic dysmenorrhea. From 63 to 100 percent of subjects in these studies reported a reduction in the pain that accompanies their menstrual cycles.

The ability of this group of anti-inflammatory drugs to reduce spasmotic dysmenorrhea is a recent discovery. Many of them were previously used to treat arthritis. Budoff (1980) relates the difficulty that she encountered when she first attempted to study these drugs for their possible use in the treatment of menstrual-related pain. In the mid-'70s, flufenamic acid was being used in Europe to treat arthritis and was unavailable in the United States. However, she was able to obtain Ponstel, a drug in the same fenamate family and she began to test its effects on herself and her patients. She published her preliminary results (Budoff, 1977) in which she reported that 85 percent of her patients reported experiencing relief from their pain by taking the drug every 4-6 hours for the first couple of days of the flow phase of the menstrual cycle. At this point, she received the support of the drug company that manufactures Ponstel and she set up a controlled study.
In this double-blind crossover study (Budoff, 1979), volunteers were first screened using the Menstrual Symptoms Questionnaire (Chesney & Tasto, 1975a) to determine that their menstrual-related symptoms were primarily spasmotic in nature. Fifty subjects were so selected. Half of the subjects received a placebo for three months followed by Ponstel for three months and the procedure was reversed for the other half. Subjects were allowed to self-administer the drug as needed for pain and were additionally allowed to take 1/2 grain of codeine if they felt they needed it. Two subjects dropped out of the study for reasons extraneous to the study. However, an additional two dropped out because they became discouraged with the lack of relief of their pain. Both were initially taking the placebo. Once again, Budoff reported that 85 percent of the women in this study experienced a significant reduction in the intensity of their spasmotic symptoms. Symptoms of nausea, vomiting, weakness, dizziness, and leg and abdominal cramps were relieved. There was a lessening in the amount of menstrual flow and a reduction in the amount of codeine needed by these women during cycle phases when they received Ponstel. The women did not report symptom reductions during the placebo trials. Budoff (1980) points to this as evidence that menstrual-related symptoms are physiological rather than psychological in origin. However, she did treat her subjects' psychological needs in an indirect manner. Before
the commencement of the study, Budoff held "gatherings" for the purpose of explaining the study to the subjects. The sessions soon expanded to a discussion of the women's experiences with menstruation. "For the first time each of us had a chance to relate her experiences with menstrual pain to other understanding human beings" (p. 53). It is probable that this reassurance alone may have confounded the way in which the women reacted to their subsequent symptoms. However, the failure of subjects to react to placebo trials and the magnitude of symptom reductions following treatment together with the results of several other studies strongly indicates that Ponstel and other anti-inflammatory drugs are effective in reducing the symptoms of spasmotic dysmenorrhea. Other commercially available drugs of this type include Motrin, Anaprox, Somax, and Indocin.

These drugs do have side effects. The most serious side effects such as anemia are usually noted after six to 18 months of daily use and should not prove to be a difficulty when taken for a day or two each month. Milder effects may include stomach upset, blurred vision, skin rash, and weight gain (Silverman & Simon, 1979). However, if these side effects prove troublesome with one drug, another may be tried with more success.

Antispasmodics have been used to treat spasmotic dysmenorrhea. These drugs reduce the activity in the intestinal tract and presumably also have the same effect on
the uterus. This group of drugs does not appear to be effective with dysmenorrhea (Budoff, 1980). As stated above, they are popular ingredients of over-the-counter remedies.

Additional medications that have been used to treat spasmotic dysmenorrhea include narcotics, such as codeine. These drugs are prescribed to alleviate the pain of dysmenorrhea rather than to interfere with the physical processes involved. They appear to be effective with mild to moderate pain but may prove to be ineffective with severe cases. Additionally, at higher doses, the user may not be able to carry out everyday functions as dizziness and sleepiness are among the side effects. Finally, there is the possibility of addiction that would caution against the use of these drugs (Budoff, 1980).

Women have been told for decades that their spasmotic symptoms would improve once they had a child. The theory behind this reassurance is that menstrual pain is due to an inadequate cervical opening through which the menstrual material needs to be expelled. The contractions necessary to achieve this goal cause the pain known as cramps. Once the individual has been pregnant, the cervical opening is enlarged and this reduces the cramping. Therefore, physicians have treated women who complain of severe menstrual pain by expanding the neck of the uterus, a non-surgical procedure that may be carried out in the
physician's office (Dalton, 1969). This may prove to be temporarily effective in some cases. However, there is the risk of subsequent cervical incompetence. Additionally, later research has indicated that the reason that this procedure produces relief from cramping is that there is less accumulation of menstrual fluid in the uterus, thus reducing the absorption of prostaglandins it contains (Yikorkala & Dawood, 1978). In this case, the treatment of choice would probably be the anti-inflammatory drugs mentioned above. At present, they appear to be the most effective medical treatment available to combat spasmotic dysmenorrhea.

**Congestive dysmenorrhea.** Just as spasmotic dysmenorrhea is thought to be a relative lack of estrogen in relation to progesterone, Dalton (1969) proposed that congestive dysmenorrhea is due to a lack of progesterone in relation to estrogen. Accordingly, treatment consists of the administration of progesterone or synthetic progesterones to restore the hormone balance. Dalton administered progesterone to hundreds of her patients and claimed that after a few months these women experienced considerable relief from their symptoms. However, these results were obtained from treating women in her practice and were not subjected to a controlled experimental evaluation by Dalton herself (Budoff, 1980). Several researchers have carried out such experiments and have been
unable to replicate Dalton's success. For example, Sampson (1979) administered the dosage of progesterone that Dalton recommended in a controlled double-blind study. Women completed the MDQ, Form A, which asks women to rate their experience of each of the 47 symptoms on that day (Moos, 1969). They had been chosen for this initial screening from a population of women attending a clinic for premenstrual distress and were included in the treatment portion of the experiment if their symptom pattern indicated that there was a significant rise in symptoms around the premenstrual time of the cycle. They continued to make out the MDQ-A daily throughout the experiment as well as data on life stresses and other illnesses. Following each menstrual flow phase, they were interviewed to determine if they found the treatment they received for that cycle helpful in relieving their symptoms. For the first two months of the treatment, 32 subjects received 200 mg b.d. progesterone and alternately b.d. placebo in a double-blind crossover manner. Timing of the administration was adjusted according to the individual's cycle length, but the average was for 12 days prior to menstrual onset and treatment was administered by suppository or pessary. The second part of the treatment consisted of the administration of 400 mg b.d. of progesterone and alternately placebo b.d. After eliminations for various reasons, 24 of the original 32 subjects completed this portion of the study.
Results for the first part of the treatment were surprising. Whereas 31 percent of the subjects reported that the progesterone had been helpful with their symptoms, 43 percent reported that the placebo was more helpful. Even when the dosage was increased in the second half of the study to 400 mg b.d., 35 percent of the subjects reported that the placebo was more effective, compared with 27 percent who found the progesterone relieved their symptoms better. Over 60 percent of the subjects indicated that the first treatment cycle had been very effective in reducing their symptoms, regardless if they had received the progesterone or the placebo. This percentage steadily declined over the course of the investigation. It therefore appears that the women in this study obtained more relief from their premenstrual symptoms when they were given the placebo than when they were actually receiving the progesterone. This surprising finding once again points to the multidimensional nature of menstrual-related distress. The attitude dimension was not assessed in this study so it is impossible to tell if there were changes over the course of the study in this dimension. It is likely that the initiation of treatment had a positive impact on these women who had presented themselves as congestive dysmenorrhea sufferers that was independent of the treatment itself.

Budoff (1980) reviews the work of Herrmann and Beach (1978) in which progesterone was administered to male
subjects and found to produce brain-wave patterns similar to those obtained following the administration of the minor tranquilizer, Valium. These researchers tested several synthetic progestogens and concluded that they all appear to have an anxiety-releasing effect on the brain. Leary and Batho (1979) compared the EEG recordings of women at the mid-cycle and just prior to menstrual onset and found that there was a premenstrual increase in brain-wave frequency and amplitude. It was proposed that these increases in activity might correspond to mood changes caused by changes in neurotransmitters which were in turn effected by changes in hormonal level. If the link could be found between the changes in the brain's activity level and changes in affect in women afflicted with congested dysmenorrhea and decreases in this level were reported following the administration of progesterone and synthetic progestogens, this would account for the relief experienced by many women when they are so treated. However, a clear hormonal effect has eluded workers in a controlled experimental setting and remains confined to the physician's office, at present.

Lever (1981) reports positive treatment results with the synthetic progesterone dydrogesterone. The drug has been used in clinical settings in London and in France and has been reported to reduce such symptoms as water retention in up to 80 percent of the women to whom it was administered. Dosages averaged about 20 mg per day for the
second two weeks of the cycle and took from three to six months to work. If relapse occurred, the drug was again prescribed. Reported side effects were minimal and in laboratory studies it was not found to be a carcinogen.

Another treatment that follows from the theory that premenstrual symptoms are caused by a lack of vitamin B6 entails the administration of this vitamin. This treatment became popular when women who were given oral contraceptives were sometimes observed to develop depression. Since the contraceptives create a functional deficiency of the vitamin, it was thought that replacement would alleviate the depression and similarly would relieve premenstrual depression (Budoff, 1980). The average dose is 40 mg each day for the last two weeks of the cycle, though as much as 80 mg may be needed to produce an effect. As the vitamin is water-soluble, any amount taken in excess of what the body needs is excreted in the urine. Amounts in excess of 200 mg per day have been found to cause gastric acidity, however. Treatment generally takes about nine months and often successful treatment is permanent, with no recurrence of symptoms. Effects are noticed immediately when the correct dosage is found with no gradual improvement noted as the dosage gradually increases (Lever, 1981). As pointed out in a previous section, the mechanism could be that the addition of B6 inhibits the excess production of prolactin by increasing the availability of the prolactin-inhibitor,
dopamine. The increased dopamine levels would account for the alleviation of depression and the inhibition of prolactin for the relief of other premenstrual symptoms. Budoff (1980) reviewed the literature regarding vitamin B6 treatment and reports that the results are equivocal.

Arising from the theory that increased prolactin levels may be responsible for premenstrual symptoms, researchers in Europe have employed a drug called bromocriptine that inhibits the release of prolactin. In this country, the drug is marketed as Parlodel. Although it has been found to be somewhat effective with women who experience breast tenderness, results of controlled studies have failed to demonstrate significant success with congestive symptoms in general. In addition, it is a powerful drug with many side effects, such as nausea and lowered blood pressure. At present, it does not represent a promising treatment alternative (Budoff, 1980; Lever, 1981).

Diuretics have been prescribed to treat congestive symptoms, especially for women whose primary symptom is water retention. They act by causing the body to excrete excess water and may be effective in mild cases of congestive dysmenorrhea. However, prolonged use of diuretics can cause a serious imbalance of potassium and sodium and may eventually lead to kidney damage, and they must be taken continuously whenever the water retention occurs. Lever (1981) points out that there are a number of
natural herbal diuretics such as marjoram, thyme, and parsley that may be taken as teas. These do not have the harmful side effects of the prescription drugs and may prove mildly effective against water retention.

Budoff (1980) reports a study that she carried out to determine if prostaglandins might lead to premenstrual symptoms and to ascertain if antiprostaglandins might prove to be effective in relieving menstrual pain in women who suffer from congestive dysmenorrhea, as they have in the alleviation of spasmotic symptoms. The study was an eight month double-blind crossover study with the antiprostaglandin, Ponstel, used in her previous work with patients.

Forty-three women who complained of symptoms of congestive dysmenorrhea took part in the study. The women were told to take the amount of the drug that they thought they needed when their premenstrual symptoms appeared up to a maximum of four tablets per day for seven days. Half of the subjects took Ponstel for the first four months and then switched to placebo for the remaining four months of the study. The procedure was reversed for the other half of the subjects. Results indicated that women who received the Ponstel experienced a significantly greater decrease in symptoms of water retention and breast tenderness as well as menstrual-related pain and nausea than their placebo treated control cycles. However, there was no appreciable difference in relief of negative affect symptoms.
As has been the case with the treatment of spasmodic dysmenorrhea, congestive dysmenorrhea has been treated with contraceptive pills. These pills consist of different combinations of estrogen and progestogens, and some women have reported experiencing relief from some of their premenstrual symptoms when taking these preparations. However, the pills have not been found to be effective in all cases and may produce side effects, such as depression. Since there are risks involved with long-term usage of these pills, it is not generally recommended that they be used unless they are chosen as the individual's form of birth control (Lever, 1981). It is not good practice to treat a woman the whole month for symptoms that occur less often.

Finally, some researchers have advocated the administration of lithium to women who experience severe congestive dysmenorrhea. This has been used to treat women who evidence periodic psychotic symptoms that correspond to the premenstrual cycle phase. For example, Glick and Stewart (1980) report three cases studied in which women were admitted to an in-patient unit where it was observed that they experienced premenstrual psychotic episodes. When these patients were treated with various combinations of psychotherapy, oral contraceptives and antipsychotic medications, their symptoms were not markedly improved. However, when lithium was added to the treatment regime in
dosages sufficient to bring the blood levels to between 0.8-1.5, significant improvement was observed in all three individuals. Specifically, there was a marked reduction in mood swings, episodic aggressive and hyperactive behavior. The authors suggest that on the basis of their limited experience with this treatment, long-term usage of all three types of drugs, including lithium, were needed to prevent further episodes of psychotic behavior requiring hospitalization. They feel that the combination of the three types of agents was the thing that produced improvement in these severely affected individuals.

Steiner, Haskett, Osmun, and Carroll (1980) tested the efficacy of lithium with non-psychotic women who reported experiencing severe congestive symptoms. Fifteen women who reported experiencing premenstrual symptoms were included in the study. After a one-month observation period, all subjects took a battery of tests that primarily measure negative affect. They were then given 600 mgs of lithium carbonate each day for one complete cycle. If they did not report a change in their symptoms at the end of this cycle, the dosage was increased to 900 mg daily for two additional cycles. Results indicated that most of the subjects experienced side effects from the drug, three severe enough so that they failed to complete the study. Of those that remained, none demonstrated a significant reduction in symptoms and five of the subjects actually reported an
increase in their symptoms. Three of the women requested to be maintained on lithium following the study. Careful history-taking revealed that two of these women had first degree relatives who had been diagnosed as having affective disorders. The authors conclude that these individuals were better able to cope with their premenstrual symptoms following the administration of lithium due to a non-specific effect they speculate might be related to inherited affective fluctuations. It is important to emphasize that this study involved individuals who were not presently experiencing major psychiatric disorders, unlike studies such as the one by Glick and Stewart (1980) reported above. In addition, these subjects were not taking any other drugs as were the individuals studied by Glick and Stewart (1980). Finally, there were no control subjects included in the design, though the authors did use a short baseline period for comparison purposes. It seems apparent that though lithium may in some cases prove to be effective in reducing the premenstrual exacerbation of an existing psychiatric disorder, it is of questionable value as a treatment for congestive dysmenorrhea in women who are otherwise symptom free.

Recently, it has been suggested that there may be a relationship between specific subtypes of premenstrual symptoms and various mental disorders (Endicott, Halbreich, Schacht, & Nee, 1981). Preliminary results of this research
group indicate that women with specific diagnoses may also experience specific clusters of premenstrual symptoms. Further research efforts may disclose relationships between menstrual-related symptoms and psychiatric disorders, primarily of the affective type, that may aid in the treatment of these individuals. At the present time this research is in the speculative stage.

Presently, none of the medical treatments reviewed above have proven to be satisfactory to relieve the symptoms of all cases of congestive-like dysmenorrhea. In most of the controlled studies, a large placebo effect was noted, indicating that though the disorder may have a physiological basis, it is also effected by psychological variables as well. It is on the basis of this observation for congestive and spasmotic dysmenorrhea that non-medical treatment strategies began to be developed. These will be reviewed in the following section. They represent an alternative approach to the treatment of dysmenorrhea.

Behavioral Treatment

Spasmotic dysmenorrhea. Most of the medical developments mentioned above are fairly recent in origin. They began to arise as new techniques became available for analyzing possible biochemical differences between women who complain of menstrual-related distress and those who do not. Prior to this time, it was generally believed that menstrual symptoms were physical manifestations of psychological
conflicts surrounding the women's reproductive functions and femininity in general. Following this line of thinking, several practitioners carried out psychotherapy in the hope that in this manner the patient's menstrual difficulties could be relieved.

In a recent review article, Denney and Gerrard (1981) present the results of several practitioners who used various forms of hypnotherapy to treat their dysmenorrheic patients.

Several aspects of these reports of treatment should be noted. First, the authors do not specify whether they were treating individuals who complained primarily of congestive or of spasmodic dysmenorrhea. Since they appear to be treating menstrual-related pain, it may be assumed that the latter type of distress was the focus of their attention; however, this is unclear. Second, these reports represent multiple case studies rather than controlled procedures. Third, the outcome measures used in this group of studies were often unclear and appeared to consist of subjects' verbal reports of symptom improvement following treatment.

Typical of this group of studies was one carried out in 1943 by Kroger and Freed. They proposed that, due to an underlying psychosomatic condition in some patients, the pain threshold was lowered and uterine contractions that would have otherwise gone unnoticed became interpreted as painful. The object of the therapy was to raise the pain
threshold and thus alleviate the pain. Only in the more severe cases did they feel that it was necessary to route out the underlying cause of the lowered pain threshold by techniques such as age regression and hypno-analysis. Less severe cases they contended could be treated in four weekly sessions in which the patient was given the suggestion that she would no longer experience menstrual-related pain.

The authors report that of the nine cases they treated, four responded favorably to the simple treatment and an additional three responded to the more complex procedure. They did not satisfactorily account for the two cases that did not improve following treatment. This type of behavioral approach to the treatment of menstrual-related symptoms usually produced about a 40-60 percent improvement, though it is unclear what mechanism was involved.

Denney and Gerrard (1981) review a second type of behavioral treatment that has been used to combat menstrual-related pain, that of applying the Lamaze natural childbirth procedure. This was first carried out by Wright (1968) on the basis of her observation that there was a great similarity between menstrual cramps and labor pains. The procedure involves (a) a thorough explanation of the physiology of menstruation; (b) training in the voluntary contraction and relaxation of muscles; (c) modification of pain perception by shifting attention to visual fixations of non-painful stimuli and to controlled breathing; (d) light
abdominal massage; and (e) physical exercises to increase circulation and muscle tone and to reduce pelvic congestion prior to menses.

These reports represent the case study approach and also have the difficulties of unclear diagnosis and unclear outcome assessment mentioned above. Their success rates appear to be about 40 percent. Due to the several elements involved in this treatment regime, it is unclear as to what the effective components might be. Little systematic research into this question has been carried out.

A third method of behavioral treatment reviewed by Denney and Gerrard (1981) is the application of biofeedback techniques. In one group of this type of treatment study, the reviewers point to what they term "a surprising naivete regarding the pathophysiology of dysmenorrhea" (p. 306). That is, although these investigators imply that they subscribe to a physiological explanation for the pain of dysmenorrhea, they have applied biofeedback techniques to areas of the body remote to the area of actual pain. The underlying justification for this approach is that the biofeedback training will produce a generalized relaxation response that will in turn reduce the symptoms of dysmenorrhea. However, this approach has proven to be remarkably unsuccessful at reducing menstrual-related pain.

An example of this type of study was carried out by Russ (1977). In this study ten subjects received contingent
reinforcement for raising hand temperature and ten received noncontingent reinforcement. Whereas there was a significant difference in the ability to raise hand temperature between the two groups, there was no significant difference in reported severity of menstrual-related symptoms as measured by the MDQ (Moos, 1977). Additionally, there was no significant change in the experimental group in locus of control, as measured by the Rotter Internal-External Locus of Control Scale (Rotter, 1966) or on a measure of self-esteem. Though this study, as others of its type, contains better experimental procedures such as more objective outcome measures and the use of a control group, the logical flaw that they contain may account for their failure to obtain significant results. Denney and Gerrard (1981) conclude that it seems that biofeedback that is based on a generalized relaxation response probably holds no advantage over verbal induction techniques. However, those techniques that focus more closely on the site of the pain will probably prove to be more effective. They feel that at present such methods are not based on a sufficient appraisal of the pathophysiology underlying dysmenorrhea.

For example, one study (Heczey, Kerenyi, & Murgatroyd, 1975) attempted to teach women to increase uterine blood flow as measured by an increase in vaginal temperature. The underlying theory was that pain was due to uterine tissue ischemia. In this study, 12 dysmenorrheic women were given
ten treatments in which autogenic instructions were combined with vaginal temperature biofeedback. They were instructed to practice the autogenic exercises between treatment sessions. Another group of 12 women received the identical treatment with the exception that they received noncontingent vaginal temperature biofeedback. Twenty women across the groups reported significant reductions in the amount of menstrual-related pain that they experienced. However, there was no relationship between improvement and the variables of contingency of reinforcement and vaginal temperature increases. Thus, once again the mechanism whereby subjects reported relief is unclear.

A final behavioral technique used to treat spasmotic dysmenorrhea reviewed by Denney and Gerrard (1981) involves applying desensitization-based procedures. These procedures represent variations of the original procedure introduced by Wolpe (1958) in which the stimulus that causes anxiety is paired with relaxation until the relaxation becomes the new response to that stimulus. The case study by Mullen (1968) reviewed in a previous section represents an early application of this technique to treat a severe case of spasmotic dysmenorrhea. In this case, systematic desensitization was used in which the relaxation response was paired with a hierarchy of menstrual-related scenes arranged in increasing order of arousability until each no longer caused any tension. The subject reported marked
improvement in menstrual-related pain and an overall positive change in attitude toward menstruation.

Denney and Gerrard (1981) point out that studies using desensitization techniques to treat dysmenorrhea emphasize the aspect of the individual's self-control over her symptoms rather than focus on counterconditioning alone. In so doing, they have incorporated some of the procedural changes advocated by Goldfried (1971). He proposed that rather than conceptualizing systematic desensitization as a passive counterconditioning of fears and anxieties, a more productive approach would be to view the therapeutic process as giving the individual a generalized skill to actively reduce anxiety. This training increases the individual's self-control in many situations that would normally provoke anxiety, and thus represents an active rather than a passive process, and a generalized skill rather than a reaction to a specific stimulus.

The procedural changes advocated by Goldfried (1971) emphasize the individual's active participation in the desensitization process. The individual is instructed to attend to proprioceptive feedback associated with the tension that occurs in response to the stimuli. In accordance with this mediational paradigm of desensitization, the hierarchy is constructed in such a way that what is being taught is the ability to cope with these proprioceptive responses rather than with the specific
situations that elicit the tension. A final procedural change is that when the individual experiences anxiety while imagining the various scenes in the hierarchy, the session is not terminated as it would be in the original procedure. Rather, the individual is asked to experience the anxiety and to actively reduce the tension that is felt. This is thought to more closely represent real life situations in which the individual is not always free to escape the field once anxiety begins. As the treatment progresses, the individual is instructed to practice this new anxiety-reducing skill in actual situations that cause anxiety whether or not they represent those situations used in the treatment sessions.

The application of this new behavioral approach to the treatment of dysmenorrhea may be illustrated by a study carried out by Tasto and Chesney (1974). Their purpose was to ascertain if they could apply Mullen's (1968) procedure in a group rather than individual sessions by using scenes of menstrual pain reduction as opposed to individually developed hierarchies.

Seven college students who reported that they experienced menstrual-related pain were screened to rule out the use of oral contraceptives. Parity was also controlled for. Each subject filled out three questionnaires pertaining to menstrual symptoms and activities to assess the degree of severity and frequency of menstrual symptoms.
These questionnaires were given ten weeks prior to commencement of treatment and again immediately prior to treatment to determine if factors unrelated to the procedure would appreciably change the ratings. No significant differences were found between these two administrations.

All subjects then participated in five group sessions over the course of four weeks with a first year female psychology graduate student. In the first two sessions, they were taught a standard muscle relaxation procedure. In the third session, they practiced the pairing of this relaxed state with the imagining of neutral scenes. In the fourth and fifth sessions, the relaxed state was paired with scenes in which menstrual-related pain was being reduced, such as soaking in a hot tub.

Subjects were instructed to practice the lessons learned after every session and to keep a record of their progress. After each had experienced two menstrual cycles following the termination of treatment, they again filled out the three questionnaires. Total time elapsed between the first and third administrations of these questionnaires was 23 weeks.

Significant differences were found between the first and third administrations of all three scales. Significant differences were also found for two of the three scales between the second and third administrations. The third scale difference was in the expected direction.
Tasto and Chesney (1974) concluded that their results held two important implications for treatment of dysmenorrhea. First, successful treatment in groups with general rather than individualized hierarchies would reduce therapist-client interaction time. Second, paraprofessionals could be trained to apply this relatively simple technique, thus making the treatment accessible to more individuals in a variety of settings.

Denney and Gerrard (1981) review this and several other studies of its type that demonstrate significant relief from menstrual-related pain using these self-control procedures. They point out that the Tasto and Chesney (1974) study and several others appeared to have taught an indirect tension-management procedure to their subjects whereas later workers, such as Duson (1977) seemed to concentrate on a more direct pain-management procedure. This difference may in part account for the interesting contradictions in findings regarding the differential effectiveness of these techniques with spasmotic vs. congestive dysmenorrhea. This controversy will be detailed below.

**Congestive vs. spasmotic dysmenorrhea.** The reason that this section is titled as it is, is that most studies that have applied behavioral techniques to congestive dysmenorrhea have done so as a comparison to how these same behavioral techniques apply to spasmotic dysmenorrhea. Because of the nature of spasmotic dysmenorrhea, i.e., its
major symptom is cramps, it was thought to be amenable to the behavioral techniques that concentrate on relaxation of muscles. Congestive dysmenorrhea, on the other hand, conceived of as being primarily composed of water retention and negative affect, was not thought to be amenable to these techniques. Many studies set out to make the comparison between the two types of discomfort.

An assessment tool frequently used to classify subjects in various outcome studies is the Menstrual Symptom Questionnaire (Chesney & Tasto, 1975a). This test was based on Dalton’s theory of dysmenorrhea. Thus, each type is seen as being mutually exclusive and the scoring is set up this way. Subjects respond to the 25 items and on the basis of their answers are classified as suffering from one or the other of the two types of dysmenorrhea.

Endorsing the opinion stated above regarding differential nature of the symptoms of the two types of dysmenorrhea, Chesney and Tasto (1975b) predicted that there would be a differential response to behavioral treatment between the two types and they set out to test this hypothesis. Their study consisted of first classifying 69 volunteer subjects according to symptom type using the Menstrual Symptom Questionnaire (MSQ). In addition, subjects were given the Symptom Severity Scale, a list of 15 menstrual symptoms compiled from their previous work and the work of Mullen (1971). This was administered as an index of
the severity of symptom experience, as the MSQ only indicates the type of symptom and not the severity with which it is experienced.

When subjects had been classified as to the type of dysmenorrhea that they experienced, they were randomly assigned to one of three groups. There were 12 spasmotic and 11 congestive dysmenorrheic subjects in each group:

1. **Behavioral therapy group.** This group received the identical treatment regime developed in the earlier study (Tasto & Chesney, 1974), the combined relaxation and pain reduction imagery.

2. **Pseudo-treatment.** This group was included to partial out any possible reduction in symptoms due to variables such as contact with the group or with a therapist, that were independent of the actual treatment involved. Subjects met in five weekly sessions, as did the experimental group. However, this group was a self-directed discussion group in which women shared their experiences with menstruation and remedies they had found to be effective.

3. **Control group.** The purpose of this group was to determine if there would be changes in reported symptoms over time as a result of test taking or some other extraneous variable. These subjects were placed on a waiting list and then sent letters explaining that they could not be treated that semester but they could expedite
their treatment if they completed the enclosed questionnaire (symptom scale). When the study was completed, these subjects and those in the pseudo-treatment group were offered the behavioral treatment.

Two months after the treatment was completed, all subjects again took the symptom checklist. No pre-treatment differences were found among the groups.

Examination of the post-treatment means produced some interesting and significant differences. The mean for the spasmotic subjects who had received the behavioral treatment was significantly lower on the symptom scale than any of the other groups. Subjects assigned to the control condition had actually experienced an increase in severity of symptoms as they waited to be treated. There was a slight but insignificant decrease in symptom reports of congestive subjects who had received the behavioral treatment. However, the reduction was less than that reported by congestive subjects who had participated in the pseudo-treatment condition. The authors feel that the difference between those congestive sufferers who were on the waiting list as opposed to those who received behavioral treatment was due to factors such as inclusion in a group and exposure to a therapist as opposed to behavioral treatment being effective with those individuals. Based on this finding and those of Mullen (1971), they feel that attitudes toward menstruation probably play an important
role in the experience of menstrual discomfort. In all cases, subjects demonstrated a positive change in attitude following exposure to an atmosphere in which they could share their experiences with menstrual-related symptoms with empathetic others. The authors concluded from the pattern of mean differences in this study that their method of behavioral treatment can significantly reduce the symptoms of spasmotic dysmenorrhea, but that it is not effective for those who suffer from congestive dysmenorrhea.

The authors raise several issues that concern other researchers as well. First, they state that it is unclear whether the mechanism of symptom relief is autonomic conditioning or an actual voluntary relaxation of the abdominal muscles. Interviews with subjects who participated in the experiment seem to indicate that it was the latter. Second, they point out that the particular imagery scenes used were related to flow phase onset and thus might have been biased in favor of the spasmotic sufferers. They dismiss this possibility by pointing out that if this were true, there should have been a reported decrease in these types of symptoms by the congestive subjects, which there was not.

Regarding this latter issue, Rosenthal (1978) carried out a treatment study where subjects were told to construct their own hierarchy prior to participating in her desensitization-based procedure. The content of the
hierarchies differed, depending on the type of dysmenorrhea that was most pervasive for the individual. Additionally, when the treatment was linked to the symptoms in the hierarchy, no differential treatment effect between the two types of sufferers was found. It, therefore, appears that when the focus of the treatment is on cognitively mediated self-management of symptoms and on restructuring maladaptive beliefs about these symptoms, congestive sufferers may benefit equally well.

This hypothesis was put to a direct test in the work of Duson (1977). In this outcome study, relaxation-desensitization treatment was compared with a cognitive restructuring procedure to determine differential treatment effects with spasmotic and congestive sufferers. The relaxation procedure consisted of standard muscle relaxation paired with anxiety-engendering scenes related to menstrual onset. The cognitive restructuring condition consisted of muscle relaxation paired with imagery focusing on identifying and modifying negative and irrational self-verbalizations related to menstruation. Treatment groups were composed of five subjects each, with one spasmotic and one congestive group for each of the types of treatment. Additionally, there was a control group of subjects who were told that there would be a delay in their treatment. Subjects were treated in groups by graduate students twice a week for three weeks for a total of 12 treatment hours.
Assessment was carried out two weeks before, immediately after, and one month after treatment and consisted of a battery of scales of affective state, menstrual-related discomfort and interference of menstruation with everyday activities. Both treatments proved to be more effective than no treatment at all. Additionally, there was a differential treatment effect for the two types of dysmenorrhea. The relaxation-desensitization procedure proved to be significantly more effective with subjects who experienced spasmodic dysmenorrhea than with those who experienced congestive dysmenorrhea.

It appears that the desensitization procedure was working directly on the symptom, cramps, and therefore subjects who experienced this symptom in the extreme, or the spasmodic subjects, experienced some relief whereas the congestive sufferers for whom the symptom was not as salient did not benefit from this treatment technique. The cognitive technique focused on subjects' negative attitudes that may have exacerbated their discomfort, regardless of the particular symptom involved and this altered their experience of the symptoms. This finding again confirms the growing belief that menstrual-related distress is multi-determined.

Nicassio (1980) has proposed a model of mode-specific treatment interventions for dysmenorrhea in which the different techniques are directed toward the altering of the
physiological, affective, or cognitive aspects of menstrual-related distress. Various forms of relaxation therapy are directed toward altering of the physiological processes involved primarily in the cramping of spasmodic dysmenorrhea. Techniques such as systematic desensitization are geared toward the affective component of distress primarily through the reduction of anxiety that accompanies menstruation and exacerbates the experiencing of the symptoms. Cognitive techniques, such as pain-control strategies and education about dysmenorrhea, are aimed at the cognitive sphere, with the objective of changing the subjective experience of the symptoms through the developing of coping strategies. He suggests that this approach to the treatment of dysmenorrhea is similar to the multimodal behavior therapy strategy suggested by Lazarus (1976), that treatment techniques that have been developed thus far have been excessively concerned with the physiological basis of distress to the exclusion of the other aspects of the disorder. In treating sufferers with a multimodal approach, careful assessment is required to determine conditions that are maintaining or exacerbating the disorder in the affective and cognitive as well as the physiological sphere. The various treatment components that are then implemented should be thoroughly explained to the individual in terms of their various contributions to the overall treatment plan. As Nicassio (1980) points out, more treatment outcome
studies are presently needed to determine the various effects of the elements in this multimodal approach. Eventually, individually designed treatment programs may be administered to dysmenorrheic sufferers using a variety of techniques. This should help to maximize relief from menstrual-related distress.

**Help-seeking Behavior and Menstrual Distress**

**Help-seeking process.** Recently researchers have begun to examine the variables involved in the decision to seek out help when an individual is in need. Gross and his colleagues (Gross, Stiglitz, Fisher, Craig, & Nadler, 1979) state that although new services are being developed and offered to the public, there is no reason to assume that these new services will automatically reach the target population. Help-providers must not limit themselves to offering new services, they must also concern themselves with the help-seeking process if they are to be successful in reaching their intended clientele.

Gross et al. (1979) proposed a three-stage model to describe the help-seeking process potential clients go through:

1. potential help-seekers must first identify their need as a problem for which a solution may be obtained;
2. in addition to the awareness of the problem and the belief that it is solvable, the help-seeker must be informed as to the availability and usefulness of relevant services;
3. Finally, the help-seeker must become convinced that the potential benefits of the treatment will outweigh the effort that they must exert in initiating and participating in the treatment.

This useful model may be applied to the problem of menstrual-related distress. As earlier sections have indicated, until recently, society has not appeared to define menstruation as a legitimate difficulty, but rather women were told to cope as best they could and to accept what they could not change. This view has been undergoing a process of revision. Women are hearing in the media that premenstrual and menstrual distress are indeed entities that exist and that it is appropriate to seek help for these discomforts. Presumably, as this process continues, the demand for effective treatment will increase.

Regarding the availability of help for menstrual-related distress, at the present time the two most widely available types of aid are medical and self-help. Gynecologists are beginning to offer the new anti-inflammatories to their patients. Hormone therapy has been available for the past two decades. In terms of self-help methods, there are a variety of over-the-counter remedies that are mildly effective in the treatment of some symptoms. In addition, there are a number of books in the popular press that educate women about menstrual-related distress and discuss treatment alternatives as well as methods that
women may try at home such as exercise (Storch, 1982) or a change of diet (Budoff, 1980).

At the present time, behavioral methods of relieving menstrual-related distress are not available to the public. Although these methods often proved to be successful in relieving symptoms, their use remains restricted to the research environment. Psychologists and counselors are apparently unaware that they are capable of assisting their clients with menstrual-related difficulties as they emerge as problems in the therapeutic setting (Parker, Note 1; Sherbow, Note 2).

The final stage in the model of help-seeking devised by the Gross group (1979) is that where the help-seeker weighs the potential benefits of the treatment against the costs of obtaining such assistance, little has been done to determine what goes into a woman's decision to seek treatment for menstrual-related distress. Although behavioral studies on college campuses have examined women who volunteered for treatment on symptom severity and type variables, as well as personality dimensions, none have compared this group with women who did not volunteer for treatment to attempt to determine which variables appear most pertinent in the decision to seek aid. As new treatment for menstrual-related distress becomes available, it will be essential for potential help-givers to have an understanding of these variables in order that they might maximize the
effectiveness of their treatment and reach those needy individuals who might otherwise be too reluctant to seek help. It is not known, for example, how pertinent menstrual-related variables of severity and type of symptoms are in the process of help-seeking versus variables such as attitudes toward menstruation. In addition, we do not currently know what part variables that seem to effect help-seeking in general play in a woman's decision to seek aid for menstrual-related distress.

General correlates of help-seeking behavior. In formulating the third stage of the model of the help-seeking process, Gross et al. (1979) examined variables that appear to be relevant to potential help-seekers as they evaluate the possible gains of help against the cost of participating in the helping relationship. After reviewing the literature, they concluded that attribution theory, as developed by Kelley (1967) and Jones and Davis (1974), most usefully accounted for this process. The results of several studies indicate that help-seeking behavior may be inhibited to the extent that the potential helpee attributes a request for help to personal incompetence or failure. In general, it seems that help-seeking will be facilitated by attribution to external causes and inhibited by attribution to internal personal causes, where it is most likely to be viewed as indicating personal inadequacy.
Gross et al. (1979) designed an experiment to examine how individual difference characteristics and situational variables might interact to determine the attribution of potential help-seekers. Their procedure was as follows. They sent letters to 7,000 women of the 12,000 listed in a university telephone directory in a midwestern town. The letters announced the opening of a women's center staffed by a group of volunteers some of which had had training in the "helping professions," who desired to bring women together in groups. The purpose of the groups was to assist women who might be feeling "frustration and conflict" in addition to "emotional separation" from other women. Groups would be free to "take whatever focus the members" might choose, with the objective of sharing the individuals' concerns, experiences or ideas. The letters urged those women who were interested in joining a group to call the center as soon as possible.

The letters were of four types, combining two levels of two situational variables, normativeness and locus of control. Individual difference characteristics were assessed at a later time. The normativeness variable consisted of two levels: subjects were told that difficulties were experienced by (a) a majority of women (high norm), or by (b) relatively few women (low norm). Locus of control also had two levels: the letters referred to either (a) the individual's personal situation, using the
pronoun "you" (internal situation), or (b) to women's difficulties caused by society (external situation). On the basis of previous research, Gross and his colleagues predicted that help-seeking would be best facilitated where individuals could make an external attribution to a high normative difficulty, i.e., the letter that presented society as causing difficulty for most women was predicted to lead to the greatest response.

Surprisingly, of the 7,000 women who received the letters, only 50 responded and, of the 50, only 23 actually followed through and joined groups. Neither of the two environmental factors, locus of control or normativeness, was found to have a significant effect on subjects' likeliness to contact the center; those who called were fairly evenly divided among the four combinations of these variables.

The authors compared the 23 women who joined groups with a control group of women who did not respond on individual difference measures. These latter women were contacted and paid $2.00 for participating. Women who eventually joined groups scored significantly lower on the Bills, Vance, and McLean (1951) measure of self-esteem than did the women who did not contact the center ($p < .001$).

The authors conclude that their model of help-initiating can account for the results. The first stage states that an individual must first define herself as
having a problem for which a solution is available. They maintain that the letter appealed to women who had defined themselves as having the difficulty stated in the letter prior to receiving it. A brief letter is insufficient to stimulate an individual to so define themselves unless the process has been under way prior to this intervention. For those who had gone through this process, the letter served the second function of the model, that of informing individuals of the availability of help for their particular problem.

As for the third stage in the helping process, that of weighing the potential gains of help-seeking against the cost of initiation and participation in it, the situation variables of locus of control and normativeness did not appear to effect this activity. However, individual differences did appear to influence the process. Those women who eventually joined groups scored lower on the measure of self-acceptance than those who did not. The authors propose that help-seeking was therefore more acceptable to these individuals, there was less dissonance than for individuals with a higher level of self-acceptance. They go on to imply that elevated self-acceptance scores could represent defensive behavior that would be incompatible with seeking out the services offered by the women's center.
Several aspects of this study are worth noting. First, the authors did not account for what may be termed the mode variable in their study. That is, potential help-seekers were told that help was offered by "volunteers," some of whom had training in the "helping professions." In addition, women were told they would be seen in "groups," and that the groups were to be self-directed. Undoubtedly, subjects were evaluating this aspect of the potential helping situation, as well as those that were intended by the authors.

Second, as the authors state in their discussion, it is doubtful that a letter of this type would significantly effect an individual who had not yet defined herself as having difficulties warranting counseling. In addition, it is doubtful whether such a letter could effect the way in which an individual would define the counseling situation. The environmental variables of normativeness and locus of control might have been more productively used in this study had they been assessed as individual variables. That is, individuals have an option as to the meaning of help-seeking, whether they view it as a sign of weakness or as a mature response to a problem situation. It is highly unlikely that a letter that is artificially designed to effect this attitude can actually do so. For example, in the related area of expectancy in a performance situation, researchers attempted to manipulate this variable by
imposing different instructions on individuals. Generalized expectancies that the subjects brought with them to the experimental situation were more salient in determining their expectancies than were the instructional manipulations of the experimental situation (Gordon, Jones, & Short, 1977). Much information might have been gained had Gross et al. (1979) assessed their subjects' attitudes regarding help-seeking and compared the responses of those who joined groups with those who did not do so.

Finally, the problem as it was defined had a decidedly "feminist" tone. Perhaps more information could have been obtained on the individual differences dimension between participants and non-participants, had the authors administered a measure of adherence to traditional feminine roles such as the Attitudes Toward Women Questionnaire (Spence & Helmreich, 1974). More conservative women would probably avoid this type of encounter. This conjecture is supported by the work of other researchers, which will be briefly discussed below.

Help-seeking and attitudes toward women. Researchers have recently discovered that there are certain features of help-seeking behavior that appear to be more prevalent in women than in their male counterparts. For example, Veroff (1981) studied help seeking in a nationally representative sample of men and women. She discovered that although both sexes were influenced by perceived inability to cope and
feelings of helplessness, the women who reported that they felt as though they could run their own lives were more willing to seek help than those who did not report feeling this way. Veroff concludes that for women help-seeking represents an active coping strategy, that women are likely to seek help from a position of strength rather than weakness. This would support the notion that women who are more actively in charge of their lives would view help-seeking as an appropriate way to meet their goals.

In a recent study (Zeldow & Greenberg, 1979), researchers examined men and women's attitudes toward the roles and responsibilities of women and attitudes toward seeking help for emotional difficulties. They discovered that there was no sex difference in attitudes toward help-seeking behavior. There was an interaction between attitudes toward women and attitudes toward help-seeking behavior for both men and women. The more liberal members of each sex also reported more positive attitudes toward help-seeking than their more conservative counterparts. Further, they found that an individual's attitudes toward women was as good a predictor of actual help-seeking behavior as the individual's attitudes toward help-seeking itself, in their sample of college students. Presumably, women who are more in charge of their lives as defined by Veroff (1981) would also be those with a more liberal
attitude toward women and would be the most likely to seek help.

The above work examines help-seeking for emotional or personal difficulties alone. Zeldow and Greenberg (1980) decided to compare psychological and medical help-seeking as a function of attitudes toward women. They selected a sample of college men and women and examined their experiences with and attitudes toward physicians and psychotherapists in relation to their attitudes toward women. They discovered that while the individuals who were most liberal in their views toward women also sought psychological help most readily and participated in the helping process the longest, they also expressed the most negative views toward physicians in general. On the other hand, those with the most conservative attitudes toward women were less likely to go for psychological help but were more likely to consult with a physician regarding medical problems.

Perhaps the difference in these attitudes on the part of the more conservative individuals versus the more liberal toward the different service providers can be explained by the way these providers are perceived. As Veroff (1981) noted, women appear to view seeking psychological help as an active coping technique. Perhaps there is a difference in the way seeking medical help is interpreted by these individuals. In a recent article (Brickman, Rabinowitz,
Karuza, Coates, Cohn, & Kidder, 1982), a model was proposed whereby help delivery systems could be classified by taking into account attribution of the cause of the difficulty and the responsibility for improving the situation. These authors propose that not only is the attitude of the helpee regarding these variables important to the helping process but the way they are viewed by the help provider as well. To explain their model, they look at the concepts of blame and control. Blame involves the internal-external dimension of attribution. That is, in general, individuals are thought to be at blame for an event if the cause of the event is viewed as internal and not to blame if the cause is viewed as external. An example is the individual being blamed for failing a test if he is perceived as not having given his maximum effort (internal attribution) and not being blamed if the test is perceived as having been very difficult (external attribution). The issue of control of future events represents another dimension of attribution, that of stable versus unstable causes for behavior. People are thought to be able to control unstable causes, such as lack of effort in the above example, whereas they are not thought to be able to control stable causes, such as failure due to lack of ability. The model has exceptions. There are internal causes for which an individual is not blamed such as having a disease and external causes that they are held to blame, such as faulty brakes on a car. Also,
certain unstable causes, such as having "bad luck," individuals are not held responsible for controlling, whereas selected stable ones, such as having a bad habit, they are viewed as having control over. There are not many such exceptions.

Brickman et al. (1982) combine these dimensions of attribution into a system whereby different helping modalities may be classified according to the view they represent of responsibility (blame) on the part of the helpee for the presenting problem and for the solution (control) to that problem. They are, briefly, as follows:

1. **Moral model.** Individuals are responsible for their difficulties and for finding a solution to them.

2. **Compensatory model.** Individuals are not seen as being responsible for their problems but are viewed as responsible for solving them.

3. **Medical model.** Individuals are not held responsible for their problems and additionally are not expected to be able to help themselves.

4. **Enlightenment model.** Individuals are viewed as being responsible for causing their problems but are not viewed as being responsible for finding a solution to them.

Brickman et al. (1982) propose that those models in which individuals are held responsible for solutions to difficulties, moral and compensatory, foster the most competence in helpees. The compensatory model has the
additional benefit that it relieves the individual of having to accept the blame for their present situation while fostering a sense of control over future events.

Relating this model to the findings of Zeldow and Greenberg (1980) mentioned above, one might postulate that those women who adhere to the more traditional views of women's roles and responsibilities might additionally view seeking medical assistance, where they are not held responsible for cause or the cure of their difficulties, as more acceptable than seeking other forms of assistance where the responsibility of improving is placed more in the hands of the helpee. Conversely, the women with the more liberal view toward their roles and responsibilities might feel more favorably toward those helping modes that encourage more active participation on the part of the helpee in solving the problem.

Menstrual Distress as "Problem." It is likely that the way a woman defines menstrual distress will influence the type of treatment she would view as being appropriate. As pointed out above, menstrual-related distress is in the process of becoming defined as a legitimate "problem" by society, and along with this change in attitude new therapeutic alternatives are being researched and developed to treat the problem. However, it is interesting to note that the methods that are most widely available to the public at present represent the "medical model" approach to
treatment. As Brickman et al. (1982) assert, this model, while not holding individuals responsible for causing their difficulty, also does not view individuals as able to control the course of treatment. Rather, they must submit themselves to higher authorities who will work a "cure" upon them. Behavioral methods that have proven to be effective in the laboratory setting are not widely available to the public. Many of these methods represent what the Brickman group term as the compensatory model of help-receiving. That is, they free the individual from responsibility for causing the difficulty, but at the same time they hold the individual responsible for and capable of effecting a solution, with the professional acting as an aid in this process. Perhaps this lack of availability is due to the fact that the physiology of menstruation has been the focus of attention in the development of treatments to the exclusion of the other aspects of the phenomenon (Nicassio, 1980).

With the very recent appearance of various self-help books regarding menstrual-related distress, women are being told that they need not "grin and bear it," but that there are things that they can do to minimize their discomfort. These important books may help to change the attitude of helplessness regarding menstrual symptoms to one where the woman feels competent to help herself. This, in turn, may lead to a greater willingness to seek alternative treatments
and increase the demand for availability of these treatments.

The present study assessed a sample of college women in order to determine:

1. Are there significant differences between the group of women in the sample who indicate that they would be willing to seek treatment and those who indicate that they would not be willing to seek treatment on the demographic, personality, and attitude variables?

2. Is there a difference in preference for type of treatment between women who indicate that they are presently willing to seek treatment and those who are not presently willing?

3. Which variables are most relevant to consider when predicting whether a woman would be willing to seek treatment for menstrual-related distress?
METHOD

Subjects

Subjects were recruited from among women who were attending undergraduate classes in the social sciences during the Fall, 1983, semester at the University of Maryland Baltimore County Campus in Catonsville, Maryland. Subjects were not paid for taking part in the study but were given credit toward their class requirements for research participation where applicable. In the following narrative, tables of results not directly impacting the text are presented in the Appendices.

A total of 301 subjects took part in the study. However, 103 were eliminated from the analyses for various reasons (see Appendix A). Each subject was asked to indicate whether they would presently be willing to participate in some form of treatment for menstrual-related distress and yes- and no-treatment groups were formed based on the response. Of the 198 subjects included in the final analyses, 71 formed the yes-treatment group and 127 comprised the no-treatment group.

The age range of the yes-treatment group is 17 to 35 with a mean of 19.38 and 17 to 38 with a mean of 19.66 for the no-treatment group.

Instruments

Subjects first received the Personal Data Sheet, developed by the examiner (Appendix B). This instrument
requests information regarding the characteristics of the individual's menstrual cycle, such as length of the flow phase, which have previously been found to be related to the experience of menstrual-related symptoms. In addition, it contains two questions regarding attribution of the symptoms to external or internal sources and requests that each subject indicate remedies that she has tried for symptoms as well as the effectiveness of these remedies. Finally, this questionnaire asks for various demographic information such as age and religious preference.

Each subject was given the Adjective Checklist (Gough & Heilbrun, 1980). This checklist presents subjects with a list of 300 adjectives, and they are asked to check those that they feel are self-descriptive. Though this checklist may be analyzed according to many scales, only the following were used for purposes of the present study: Number checked, Number of Favorable Adjectives, Number of Unfavorable Adjectives, Communality, Achievement, Dominance, Endurance, Order, Intraception, Nurturance, Affiliation, Heterosexuality, Exhibition, Autonomy, Aggression, Change, Succorance, Abasement, Deference, Counseling Readiness, Self-Control, Self-Confidence, and Personal Adjustment.

The original normative sample contained 4,144 women including high school students, college students, and adults. A subsample of 588 women was used to calculate measures of internal consistency. Alpha coefficients ranged
from a low of .53 for the Counseling Readiness scale to a high of .94 for Favorable Adjectives, with a median value of .75.

An additional sample of 45 college women was chosen and test-retest correlations were calculated with a period of one year elapsing between the first and second testing sessions. The range of these correlations was between .45 and .86, with a median value of .71.

The authors wanted to provide a method for detecting randomly answered protocols. Accordingly, they generated 100 randomly generated protocols, with the number of items checked calculated to match the distribution of number of items checked for the male and female normative samples. They discovered that 29 of the 37 scales could discriminate significantly between the random protocols and a sample of actual protocols from the female sample. Based on the pattern of significance, the authors have provided an index for identifying randomly completed protocols as follows: 
2(Communality) + (Military Leadership) - (Unfavorable Adjectives). This index indicates an invalid protocol if the value is equal to or less than 50. This index was used in the present study. Those subjects who obtained a value of 50 or below were eliminated from the data analysis.

An additional concern of this type of questionnaire is that of subjects responding in a socially desirable manner regardless of their true feelings. The authors tested this
for females by selecting a sample of 172 to whom they
administered Edwards 39-item scale designed to assess the
degree to which subjects choose socially desirable responses
(Edwards, 1957). The correlations from the comparisons with
standard scores on the scales and the Edwards' measure
ranged from -.45 to .50, with a median of .25. The authors
point out that these values are lower than those that are
typically reported for self-descriptive questionnaires of
this type. They account for this by stating that many of
the scales contain favorable items that are contraindicated
for the particular scale. This acts against the tendency
for socially desirable answers to unduly influence subjects'
scores.

The Menstrual Attitude Questionnaire (Brooks, Rubel, &
Clark, 1977) was also administered to all subjects (Appendix
C). The questionnaire consists of 33 items pertaining to
menstruation. Subjects rated each statement on a 7-point
scale that ranges from "disagree strongly" to "agree
strongly," according to the individual's opinion. The
questionnaire contains five attitude dimensions regarding
menstruation and scores for each scale may be obtained by
adding the rating of each scale item and averaging by the
number of items on the scale. The scales represent the
following attitudes: (a) menstruation as a psychologically
and physically debilitating event, (b) a natural event, (c)
a bothersome event, (d) a predictable event, and (e) an
event that has no effect on behavior (or denial of effect).
The questionnaire items were originally constructed to represent four categories: beliefs about psychological concomitants of menstruation; styles of coping with menstrual distress; effects on performance of menstruation; and overall evaluation of menstruation. The original questionnaire presented 46 items over these four areas that were presented in a counterbalanced fashion. After the initial factor analysis, 33 items remained.

The 33-item questionnaire was then tested for replicability and internal consistency by the authors. A second sample was chosen and the factor analysis was carried out based on the responses to these items. Coefficients of congruence between the five factors in each sample revealed high congruence between the same factors across the two samples (0.77 to 0.91) and low congruence between factors (0.46 or less, with one exception; 0.79 between debilitation in sample 1 and prediction in sample 2). Scale homogeneity, as measured by Cronback's alpha coefficient calculated for each factor was high (from 0.95 to 0.97) in both samples (with one exception; .90). The authors add a note of caution, stating that the scales are appropriate for research purposes at the present time, but they do not see them as appropriate to classify individuals without further expansion of the item pool.

A major purpose of this questionnaire is to provide an instrument that can be used to assess the relationship
between beliefs and attitudes toward menstruation and reactions to menstrual symptomatology. The authors point out that previous attempts to do this yielded weak or inconsistent results most likely because of the assessment of personality variables that were too general or too remotely related to the experience of menstruation. The Menstrual Attitude Questionnaire provides for the assessment of beliefs and attitudes specifically related to the menstrual cycle and thus is more appropriate to studies of menstrual-related phenomena.

The Moos Menstrual Distress Questionnaire (Moos, 1977) was administered to all subjects (Appendix D). Form A was used so that subjects rated each symptom for the menstrual, inter-menstrual, and premenstrual cycle phases. The questionnaire consists of 47 symptoms that subjects rate in terms of degree of severity of their experience on a 6-point scale that ranges from "no experience of the symptom" to "acute or partially disabling." A 48th question was added to this questionnaire for purposes of this study and will be described later. Difference scores were obtained for the premenstrual and menstrual phase ratings of each symptom by subtracting the rating given for the symptom in the intermenstrual cycle phase. This is the time in the menstrual cycle when the symptoms should not ordinarily be present. The difference scores yield ratings that indicate the degree of change in the symptom due to the phases of the
menstrual cycle and this should help to control for propensity to respond in a certain way regardless of item content.

A factor analysis of the responses of the original sample of 839 women to the 47 questions pertaining to menstrual cycle symptomatology (Moos, 1969) yielded eight scales. These scales are Pain, Concentration, Behavior Change, Autonomic Reaction, Water Retention, Negative Affect, Arousal, and Control. Internal consistencies (as assessed by the Kuder-Richardson Formula 20) for the eight scales range from .53 to .89 for Form A (Moos, 1977). Markum (1976) calculated split half correlations by both odd–even and random assignment methods for her experimental (N = 47) and control (N = 47) groups. These results were obtained from subjects who were tested the first time and then a second time in the same cycle phase as the original testing during the next menstrual cycle. These correlations were all significant and ranged from .74 to .98.

Intercorrelations among the eight scales were found to be positive (Moos, 1977) which indicates that women who score high on one scale also tend to score high on the other scales. Correlations were found to be highest among the Pain, Concentration, Behavior Change, and negative Affect scales.

Markum (1976) assessed test-retest reliability for her experimental and control groups for the eight scales. All
correlations were significant and ranged from .41 to .76 (with one exception, for the Arousal scale in the experimental group, r = .20). Moos (1977) studied the responses of 15 women across two cycles on nine selected days and found that there was consistency in symptom complaints from one cycle to the next. Moos (1977) cites several researchers who have found substantial inter-cycle variability in symptom reports in some cases. He, therefore, cautions against the practice of predicting current symptom experiences from retrospective symptom reports. This discrepancy has been a major criticism of generalizations made about menstrual cycle symptoms based on the results of the MDQ and other retrospective questionnaires. However, it can give a good indication of the types of symptoms that women experience and a relative idea of the severity of those symptoms.

Question 48 that was added to the Menstrual Distress Questionnaire for purposes of the present experiment asked subjects if they would presently consider participating in some form of treatment for menstrual-related distress. If they answered in the affirmative, they were asked for which symptom or symptoms they would want treatment. If they answered in the negative, they were asked to briefly explain their reasons for this decision. This question was used to divide subjects into the two groups (Yes- and No-treatment) that represent the focus of the study.
Finally, each subject was given the Treatment Questionnaire that was devised by the author for purposes of the present study (Appendix E). It presented each subject with a paragraph describing the three treatment modalities of medical, self-administered and behavioral methods. Subjects were asked to rank order these three types of treatment in terms of their preference for them. Both subjects who indicated that they were presently willing and those who indicated that they were not presently willing to seek some form of treatment for their menstrual-related symptoms were asked to complete this brief questionnaire. In addition to the rankings which range from 1 = most preferred to 3 = least preferred treatment, subjects were asked to give a brief explanation for their choices (Appendix U).

Procedure

Subjects were recruited from among women who were attending undergraduate social sciences classes at the University of Maryland. If they agreed to participate, they were given the packet of questionnaires which they completed during the beginning of the class period. They were given an instruction sheet (Appendix B) that briefly explained that the study dealt with women's reproductive health issues. Subjects were urged to fill out each questionnaire completely and were provided with the examiner's telephone numbers in the event that they desired feedback regarding
the purpose or results of the study. In addition, a calendar was provided to them when necessary.

The questionnaires were presented in the following order: Personal Data Sheet, Adjective Checklist, Menstrual Attitude Questionnaire, Menstrual Distress Questionnaire, and Treatment Questionnaire (see Appendices B-E). It took between 30 and 45 minutes to complete the questionnaire packet.

Of the 301 subjects who participated in the study, 103 were eliminated from the final analyses. As Table 7 in Appendix A indicates, subjects were eliminated if they did not complete all of the questionnaires, the Adjective Checklist was invalid, they were taking birth control pills or other medications that would interfere with normal hormone fluctuations, or were experiencing no or irregular menstrual cycles due to pregnancy, menopause, or other reasons. Of the 93 excluded subjects who responded to the question regarding willingness to seek treatment, the proportion of those who answered yes to those responding no was roughly equivalent to that proportion among subjects who were included in the final analyses.
RESULTS

The purpose of this study was to delineate variables which might be related to reported willingness to seek treatment for menstrual-related distress, and to determine treatment preferences in this sample of young women. The specific research questions are presented sequentially below.

The purpose of the first question was to determine if there were significant differences between the group of women in the sample who reported a willingness to seek treatment for menstrual-related distress and those who stated that they were not willing to do so on demographic, personality, and attitude variables. The two groups did not differ significantly regarding religious affiliation (see Table 8, Appendix F), $X^2(5) = 4.46$, $p = .48$, marital status (see Table 9, Appendix G), $X^2(1) = .09$, $p = .76$, parity (see Table 10, Appendix H), $X^2(1) = .43$, $p = .51$, or menstrual cycle phase that they were in when completing the study (see Table 11, Appendix I), $X^2(2) = 1.18$, $p = .55$.

The groups did differ significantly on the variable of menstrual symptom type, as illustrated in Table 1. The mixed-high group were most likely to report a willingness to seek treatment and the mixed-low group were least likely to do so. Symptom type was determined as follows. Subjects' scores on the eight scales of the Menstrual Distress
Questionnaire were totaled and medians were calculated for the total of the 198 subjects for the menstrual and premenstrual cycle phases. If a subject's score fell at or above the median for the menstrual cycle phase and below the median for the premenstrual cycle phase, she was considered to experience the menstrual symptom type. Premenstrual symptom types were derived in a similar way, using opposite criteria. If a subject's score was equal to or above both medians, she was classified as mixed symptoms-high, and below the median of each distribution, mixed symptoms-low.

Table 1

Distribution of Menstrual Symptom Types for the Yes- and No-treatment Subjects

<table>
<thead>
<tr>
<th>Symptom Type</th>
<th>No-Treatment</th>
<th>Yes-Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Menstrual</td>
<td>16</td>
<td>12.60</td>
</tr>
<tr>
<td>Premenstrual</td>
<td>21</td>
<td>16.54</td>
</tr>
<tr>
<td>Mixed-High</td>
<td>37</td>
<td>29.13</td>
</tr>
<tr>
<td>Mixed-Low</td>
<td>53</td>
<td>41.73</td>
</tr>
</tbody>
</table>

Chi Square = 9.31; df = 3; p < .05
Due to the nature of the data, the remaining demographic variables was subjected to a 3 x 2 (group by treatment choice) analysis of variance. No significant differences were found between the two groups on length of the flow phase, importance of religion, amount of sexual activity, and length of the entire menstrual cycle (see Tables 12-13, Appendices J-K).

To minimize the error inherent in comparing several scale means, Hotellings $T^2$ was used to analyze the groups on the scales of the Menstrual Distress Questionnaire. The two groups differ significantly for the flow phase of the cycle ($T^2 = 35.88, F(8,189) = 4.33, p < .01$). The groups do not differ overall on the scales of the Menstrual Distress Questionnaire for the premenstrual phase ($T^2 = 10.69, F(8,189) = 1.29, p = .25$), though the individual scales of Water Retention and Control do show significant differences (see Tables 2 and 3).

Although none of the demographic variables was significantly related to group membership (Table 14, Appendix L), significant relationships were found between group membership and all but one scale of the MDQ for the menstrual flow phase (see Table 15, Appendix M). This did not hold true for the MDQ scales as rated for the premenstrual cycle phase.

Regarding the possible differences in personality characteristics as measured by the Adjective Check List,
Table 2

Means, Standard Deviations and t Values for the Yes- and No-Treatment Groups on the Menstrual Distress Questionnaire for the Menstrual Cycle Phase.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Treatment Group</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No-Treatment</td>
<td>Yes-Treatment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(n = 127)</td>
<td>(n = 71)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pain</td>
<td>5.07</td>
<td>7.76</td>
<td>6.04</td>
<td>-3.32***</td>
<td></td>
</tr>
<tr>
<td>Concentration</td>
<td>.98</td>
<td>2.75</td>
<td>1.75</td>
<td>-3.47***</td>
<td></td>
</tr>
<tr>
<td>Behavior Change</td>
<td>1.84</td>
<td>3.23</td>
<td>4.13</td>
<td>-2.76**</td>
<td></td>
</tr>
<tr>
<td>Autonomic Reaction</td>
<td>1.04</td>
<td>2.70</td>
<td>3.70</td>
<td>-3.83***</td>
<td></td>
</tr>
<tr>
<td>Water Retention</td>
<td>2.52</td>
<td>4.24</td>
<td>3.95</td>
<td>-3.54***</td>
<td></td>
</tr>
<tr>
<td>Negative Affect</td>
<td>4.04</td>
<td>6.34</td>
<td>7.31</td>
<td>-2.48*</td>
<td></td>
</tr>
<tr>
<td>Arousal</td>
<td>.04</td>
<td>-.58</td>
<td>2.79</td>
<td>1.75</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>.15</td>
<td>1.54</td>
<td>2.91</td>
<td>-4.93***</td>
<td></td>
</tr>
</tbody>
</table>

$T^2 = 35.88; F(8,189) = 4.33; df = 8, 180; p = .001$

*p < .05

**p < .01

***p < .001
Table 3
Means, Standard Deviations and t Values for the Yes- and No-Treatment Groups on the Menstrual Distress Questionnaire for the Premenstrual Cycle Phase

<table>
<thead>
<tr>
<th>Scale</th>
<th>Treatment Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No-Treatment (n = 127)</td>
</tr>
<tr>
<td></td>
<td>Mean  SD</td>
</tr>
<tr>
<td>Pain</td>
<td>1.89   4.33</td>
</tr>
<tr>
<td>Concentration</td>
<td>.26    1.53</td>
</tr>
<tr>
<td>Behavior Change</td>
<td>.17    2.13</td>
</tr>
<tr>
<td>Autonomic Reaction</td>
<td>.28    1.47</td>
</tr>
<tr>
<td>Water Retention</td>
<td>2.70   3.25</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>2.75   5.20</td>
</tr>
<tr>
<td>Arousal</td>
<td>-.28   1.74</td>
</tr>
<tr>
<td>Control</td>
<td>.13    .95</td>
</tr>
</tbody>
</table>

\[ t^2 = 10.69; F(8,189) = 1.29; df = 8, 189; p = .25 \]

*p < .05

**p < .01

***p < .001
Hotellings $T^2$ analysis indicates that the two groups do not differ on any of the scales included in the study ($T^2 = 34.71, F(5,172) = 1.22, p = .23$). This relationship is indicated in Table 16 (see Appendix N). None of the scales of the Adjective Check List related significantly to the variable of group membership.

The two groups were similar in their beliefs regarding the communality of menstrual-related symptoms. As Table 17 indicates, the vast majority of subjects in each group endorsed the belief that symptoms are experienced by most women (see Appendix O). In addition, over 75% of the subjects in each group endorsed the belief that the cause of menstrual-related distress is physiological rather than due to society's attitudes toward this process (see Table 18).

Attitudes toward menstruation were measured in a more formal way by the administration of the Menstrual Attitude Questionnaire, and as Table 4 illustrates, Hotellings $T^2$ indicates that the two groups differ significantly on this measure ($T^2 = 21.92, F(5,192) = 4.29, p = .001$). There was also a significant relationship between group membership and three of the five scales of the MAQ, as Table 19 indicates (see Appendix Q).

Table 5 gives the values of the relationship between the scales of the MDQ and MAQ.

The second question posed by the present study was to determine if there was a difference in preference for type
Table 4
Means, Standard Deviations and t Values for the Yes- and No-treatment Groups on the Menstrual Attitude Questionnaires

<table>
<thead>
<tr>
<th>Scales</th>
<th>Yes-treatment (n = 71)</th>
<th>No-treatment (n = 127)</th>
<th>t Values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Debilitating</td>
<td>4.05</td>
<td>1.02</td>
<td>3.53</td>
</tr>
<tr>
<td>Bothersome</td>
<td>5.15</td>
<td>1.01</td>
<td>4.78</td>
</tr>
<tr>
<td>Natural</td>
<td>4.53</td>
<td>1.14</td>
<td>4.67</td>
</tr>
<tr>
<td>Predictable</td>
<td>5.47</td>
<td>.99</td>
<td>4.86</td>
</tr>
<tr>
<td>Denial</td>
<td>2.63</td>
<td>1.15</td>
<td>3.11</td>
</tr>
</tbody>
</table>

\[
T^2 = 21.92; F(5,192) = 4.29; p < .001
\]

*p < .05
**p < .01
***p < .001
Table 5
Correlation Values for the MAQ Scales with the MDQ Scales for the Menstrual and Premenstrual Cycle Phases (Across Groups)

<table>
<thead>
<tr>
<th>Cycle Phase</th>
<th>MAQ Scales</th>
<th>Pain</th>
<th>Concentration</th>
<th>Behavior Change</th>
<th>Autonomic Reaction</th>
<th>Water Retention</th>
<th>Negative Affect</th>
<th>Arousal</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Menstrual</td>
<td>Debilitating</td>
<td>.13</td>
<td>.10</td>
<td>.24**</td>
<td>.17</td>
<td>.13</td>
<td>.22**</td>
<td>-.08</td>
<td>.02</td>
</tr>
<tr>
<td></td>
<td>Bothered</td>
<td>-.07</td>
<td>-.04</td>
<td>.06</td>
<td>.00</td>
<td>-.02</td>
<td>-.07</td>
<td>-.16</td>
<td>-.02</td>
</tr>
<tr>
<td></td>
<td>Natural</td>
<td>.02</td>
<td>.12</td>
<td>.01</td>
<td>.05</td>
<td>-.08</td>
<td>.11</td>
<td>.11</td>
<td>.13</td>
</tr>
<tr>
<td></td>
<td>Predictable</td>
<td>.12</td>
<td>.21</td>
<td>.23**</td>
<td>.13</td>
<td>.29**</td>
<td>.40**</td>
<td>-.11</td>
<td>.19</td>
</tr>
<tr>
<td></td>
<td>Denial</td>
<td>-.25**</td>
<td>-.19*</td>
<td>-.38**</td>
<td>-.31**</td>
<td>-.29**</td>
<td>-.29**</td>
<td>.19*</td>
<td>-.15</td>
</tr>
<tr>
<td>Premenstrual</td>
<td>Debilitating</td>
<td>.15</td>
<td>-.01</td>
<td>.06</td>
<td>.07</td>
<td>.08</td>
<td>.12</td>
<td>-.03</td>
<td>.03</td>
</tr>
<tr>
<td></td>
<td>Bothered</td>
<td>.04</td>
<td>-.04</td>
<td>-.04</td>
<td>-.05</td>
<td>-.04</td>
<td>-.07</td>
<td>.03</td>
<td>-.00</td>
</tr>
<tr>
<td></td>
<td>Natural</td>
<td>-.01</td>
<td>.14</td>
<td>.02</td>
<td>.14</td>
<td>-.06</td>
<td>.12</td>
<td>.09</td>
<td>.10</td>
</tr>
<tr>
<td></td>
<td>Predictable</td>
<td>.16</td>
<td>.16</td>
<td>.13</td>
<td>.13</td>
<td>.28**</td>
<td>.37**</td>
<td>-.05</td>
<td>.22**</td>
</tr>
<tr>
<td></td>
<td>Denial</td>
<td>-.16</td>
<td>-.18*</td>
<td>-.20</td>
<td>.14</td>
<td>-.26**</td>
<td>-.27**</td>
<td>.11</td>
<td>-.12</td>
</tr>
</tbody>
</table>

*p < .05.

**p < .01.
of treatment between women who indicated that they were presently willing to seek treatment and those who were not presently willing to do so. The two groups did not differ significantly regarding treatment they would prefer for menstrual-related distress (see Table 6). Self-administered treatment was preferred by over 50% of the subjects in each of the two groups, with behavioral treatment as described by the examiner preferred by only about 7% of the subjects in each of the groups. Subjects were also asked to report previous treatments that they had tried to relieve distress and if these methods were successful.

As Table 20 (Appendix R) indicates, there was no significant difference between the two groups in the effectiveness of previous treatments tried ($X^2(1) = 1.37, p = .24$). The overwhelming majority of subjects in each of the two groups reported that they have previously treated flow phase symptoms ($X^2(2) = 10.66, p = .005$), and most reported that they have previously used self-administered treatments ($X^2(1) = 15.31, p = .002$). As Tables 20-22 (Appendices R-T) indicate, most of the individuals have used self-administered treatments to deal with flow phase symptoms and most have experienced a lessening of those symptoms as a result.

A final question of interest in the present study was to determine which of the many variables that were included in this study are most relevant to consider when predicting
Table 6

Preferred Treatment for Menstrual-related Distress for the Yes- and No-treatment Subjects

<table>
<thead>
<tr>
<th>Group</th>
<th>Treatment Type (percent)</th>
<th>Medical</th>
<th>Self</th>
<th>Behavioral</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>38</td>
<td>29.92</td>
<td>79</td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td>27</td>
<td>38.03</td>
<td>39</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>65</td>
<td>32.83</td>
<td>118</td>
</tr>
</tbody>
</table>

Chi Square = 1.36; df = 2; p = .5072

whether a woman would be willing to seek treatment for menstrual-related distress. When each of the variables was correlated against each of the other variables included in the study, the result was a 77 x 77 correlation matrix. This was thought to be too unwieldy to include in its entirety and therefore it is not presented here. However, those variables that significantly related to group membership have been presented, as noted above, in this section and in the appendices. A hierarchical multiple regression analysis was performed in two different ways. First, the computer program was instructed to select the best possible combination of variables based on the correlation matrix of
77 variables noted above. This resulted in a regression equation that contained 23 variables and produced a multiple correlation coefficient of .49, which is significant beyond the .001 level. This method of calculating a multiple R value is considered to be less than optimal in that all possible combinations of variables are considered, and this process contributes to an increase in error rate. Therefore, the more optimum method of producing a multiple R, that of the experimenter choosing which variables to include based on the examination of the entire correlation matrix (containing all 77 variables) and a review of the relevant literature, was also calculated. After studying the entire correlation matrix and based on the results of previous researchers, particularly the work of Brooks-Gunn and her colleagues, a few variables were chosen for inclusion in this regression equation. The resulting value of R is .37, which is less than the value for the optimal mix. However, it is also significant beyond the .001 level (F = 7.81). The regression equation is as follows:

\[ -.23 + .03(\text{MDQ#8, PM}) + .08(\text{MAQ#1}) + .04(\text{MAQ#4}) + .01(\text{MDQ, MTotal}) \]

These variables were chosen so as to minimize their correlation with each other and maximize their correlation with the group membership variable. Although this results in an F ratio that is significant at the .001 level, the equation accounts for only 14% of the variance regarding group membership.
DISCUSSION

The results of the study indicate that there are variables that differentiate between those women who report that they are willing to participate in some form of treatment for menstrual-related distress and those who are not willing to do so. It lends support to the contention of earlier researchers such as Coppen and Kessel (1963) that variables other than symptom severity alone are important in determining if a woman will seek aid for her symptoms. For purposes of clarity, these variables have been grouped and are presented below.

Personality and Demographics

It will be recalled from the previous sections of this report that the first question of interest is to determine if there are significant differences between the group of women in the sample who state that they are willing to seek treatment for menstrual-related distress and those who state that they are not willing to do so on demographic, personality, and attitude variables. As a review of the results section of this report indicates, this sample of individuals has been found to be relatively homogenous regarding the first two of these three areas. For this group of individuals, demographic variables appear to be unrelated to willingness to seek treatment for menstrual-related distress. Similarly, the same relationship obtains
for the personality variables, as measured by the adjective checklist. Not one of the 25 scales of this instrument included in the study significantly differentiates the yes-from the no-treatment group. In addition, there is no significant relationship between these personality variables and symptom reports for either of the two groups. This latter finding is not surprising when viewed in light of the findings of previous researchers noted above. Most researchers who found a relationship between personality variables and symptom reports did so by correlating premenstrual negative affect with measures of neuroticism. Even when the probability of finding a significant relationship was maximized by assessing subjects over the age of 30 who, as a group, have a higher incidence of premenstrual negative affect symptoms and by administering the tests during the premenstrual cycle phase, only three of the ACL scales showed a positive relationship with premenstrual tension (Golub, 1980). The present study used a group of subjects that would tend to minimize the discovery of a positive relationship between personality variables and symptom reports. That is, the average age of both of the groups is 19, and most subjects report experiencing primarily flow phase symptoms (only 13% of the entire group reports having attempted to treat what could be classified as a premenstrual symptom). Most previous work has discovered that there is no relationship between
personality variables and menstrual flow phase symptoms (Rees, 1953b; Coppen & Kessel, 1963; Taylor, 1979), and it is therefore not surprising that the present study failed to find a significance in this regard. It seems that, in general, global personality characteristics do not offer much useful information in predicting what women will experience regarding their menstrual cycle and how they will react to these experiences.

Attitudes and Symptoms

Symptom severity and type. A significant relationship exists between group membership and symptom severity, with the yes-treatment group rating all scales of the MDQ higher than the counterparts with the exception of the Arousal Scale. However, this relationship was not found when subjects rated the same symptoms for the premenstrual cycle phase. Although the group mean for the yes-treatment subjects is greater than that for the no-treatment group, the difference is significant for the Water Retention and Control Scales only (see Tables 2 and 3). These differences are apparent even though symptom ratings were calculated in a conservative manner (by subtracting the intermenstrual rating from each of the ratings for the other two phases). It therefore seems apparent that, for this group of individuals, reported symptom severity especially during the flow phase of the cycle is related to reported willingness to seek treatment for menstrual-related distress.
The largest percentage of those individuals who said that they are willing to seek treatment report high levels of both menstrual and premenstrual distress. Conversely, the largest percentage of those individuals who report that they are presently unwilling to seek treatment fall into the mixed symptom-low category. The groups are fairly evenly divided in the pure menstrual and premenstrual categories. This would indicate that symptom severity rather than type is the determinant in this group of propensity to seek treatment. However, severity alone cannot account for this distribution. If severity of symptoms alone was the determinant of propensity to seek treatment, we would expect to see most of the no-treatment individuals in the mixed symptom-low category, indicating that their menstrual and premenstrual cycle symptom totals fall below the medians for the entire group. While this is the case for nearly 42% of these individuals, 58% of them have a score that is above one or both of these cycle phase medians. In addition, 23% of the yes-treatment group falls into the mixed symptom-low category, which indicated that, although their total score for symptoms for both the menstrual and premenstrual cycle phases are below the medians for the entire group, they are amenable to some form of treatment for their menstrual-related symptoms. Therefore, symptom type and severity together do not account for their reluctance to participate.
Attitude. A majority of the subjects included in the study, regardless of their reported willingness to seek treatment, believe that most women experience symptoms related to their menstrual cycle. In addition, a majority of the individuals in each group endorse the opinion that menstrual symptoms are caused by physiological mechanisms, rather than being the result of society's attitudes toward menstruation. It will be recalled from the previous discussion regarding help-seeking behavior that this state of affairs would make help-seeking for menstrual-related distress acceptable both to the individual herself and to those around her. These beliefs are therefore not related to propensity to seek treatment for this particular group of individuals. However, there is a relationship between specific attitudes toward menstruation, as measured by the MAQ and desire to seek treatment. The greater the degree to which women view menstruation as debilitating and predictable, the more likely they were to report a willingness to seek treatment. The attitudes of menstruation as bothersome or natural are not related to group membership. The dimension of denial of effect is significantly related as well, with those endorsing this dimension being less likely to agree to participate in treatment for their symptoms. It must be noted that, although these relationships are significant, their actual values are low. This may, in part, be attributed to the
restrictiveness of the sample. When mean differences are compared between the yes- and no-treatment groups on the five attitude dimensions, only the dimension of menstruation as a natural event fails to significantly differentiate the groups (see Table 4). It is therefore apparent that, in this particular sample of individuals, attitudes toward menstruation play a part in the decision to seek treatment for menstrual-related distress.

The present study also obtained relationships between reported symptom severity on the MDQ and the five attitude dimensions of the MAQ, although the relationships are not as strong as those discovered by Brooks and her colleagues (Brooks, Rubel, & Clark, 1977; Brooks-Gunn & Ruble, 1980). In the present study, endorsing the attitudes of menstruation as natural or bothersome is not related to symptom severity; the dimension of denial is negatively related to symptom severity; the dimension of predictable is related to the symptom scales of water retention and negative affect for both cycle phases; the attitude dimension of debilitating is positively related to two of the symptom scales for the menstrual (flow) phase (see Table 5). The combined results indicate that women who endorse the attitudes of menstruation as predictable and debilitating are also those who will be most likely to seek treatment for their distress. Furthermore, the results support the view that the variable of attitudes toward menstruation is an
important one to measure and to take into account when planning research or devising therapeutic strategies with college women.

**Treatment Type**

One of the investigative points of this study was to determine if there would be a difference in preference for the three treatment alternatives presented to these women and whether this preference would be related to current propensity to seek treatment for menstrual-related symptoms.

The vast majority of subjects in each of the two groups express a preference for self-administered treatment. Indeed, about 75% of the women in each group report that they have previously tried some form of self-administered treatment for symptoms (see Table 22, Appendix T). There is a concurrent lack of preference for the behavioral type of treatment as it is presented by the examiner. Only about 7% of the individuals in each of the groups endorse this as their treatment of choice. This result may be accounted for in a number of ways. First, as pointed out above, self-administered treatments for menstrual-related symptoms have recently attracted much attention in the popular media. Behavioral treatments, on the other hand, have largely been confined to the research arena and are not widely available to the public. Therefore, the average individual is probably not aware that these treatments exist or that they have proved to be successful in some instances with the
relief of menstrual-related symptoms. It is doubtful whether the brief introduction they have read while participating in the study is sufficient exposure for them to form an opinion. According to Gross et al. (1979), an important part of help-seeking behavior is the individual becoming aware that the treatments exist and that they are effective with the problem in question. Second, most individuals in each group express the opinion that menstrual-related symptoms are the result of physiological processes rather than being the result of society's attitude toward this process. It may be that these women do not feel that behavioral treatment can impact physiological processes. As noted above, individual counselors may not even be aware that there are treatment methods that they can apply for menstrual-related difficulties. Finally, the preference for self-administered treatment may, in part, reflect these individuals' success with these methods, as success of previous treatments tried did not appear to effect willingness to participate in treatment. Subjects in each of the groups report in the majority that they have previously tried self-administered treatment techniques and that they have met with some success regarding these methods (see Table 20, Appendix R). Representative statements from both groups (Appendix U) regarding the reasons for their treatment choices seem to corroborate these conjectures.
The final question of interest in the present study was to determine which of the many variables assessed are most relevant to consider when predicting whether an individual would be willing to seek treatment for her menstrual-related symptoms. This was done more as an effort to differentiate between the two groups rather than to discover variables that could later be used to predict an individual's willingness to participate in treatment, as the latter practice would have little practical significance. From the results of the correlation matrix, four variables were chosen to include in the regression equation. It will be recalled from the discussion above that, although this produced a significant F ratio, only 14% of the variance on group membership could be accounted for. In actual practice, one could expect that as an individual's endorsement of the attitudes that menstruation is predictable and debilitating and as her menstrual flow phase symptoms increase, so too would her likelihood to engage in some form of treatment for her symptoms. This could best be predicted if the individual was from a population of college women. It is not clear if the same would hold true of a more diverse sample of women.

The present study has yielded information that may prove useful in future research and treatment planning. Regarding treatment outcome studies, it seems apparent both from these results and the results of other workers that
Menstrual attitudes appear to play an important part in the way an individual will react to changes that accompany the menstrual cycle. It would seem that menstrual attitudes, therefore, need to be taken into account when assessing the efficacy of different treatment techniques. For example, it may be that the greatest degree of relief is experienced by those individuals who experience the most significant degree of change in attitudes toward menstruation following treatment, in combination with actual symptom reduction. It will be recalled that symptom relief is usually measured by the administration of a subjective symptom questionnaire. It is difficult to determine how a change in attitude might effect symptom reporting on such an instrument.

On a more applied level, it is apparent that this population of individuals does not prefer to participate in what might be classified as a behavioral treatment for their menstrual-related symptoms. As pointed out above, these methods have met with some success at the research level and have something to offer. Developers of such programs must bear in mind that they must overcome some resistance in making their services known. The work of Mullen (1968) and others has indicated that attitudes impinge on the way an individual defines their situation, and this is an area that may be approached by professionals in counseling centers and in private practice.
Finally, this study supports the contention of Nicassio (1980) and others who advocate a multimodal approach to menstrual-related symptoms. Most of the women included in the study reported that they had had some success with previous treatments to relieve menstrual symptoms and yet a large percentage were interested in pursuing further symptom relief. It is apparent that these individuals are not satisfied with the relief that they have experienced. Future treatment that is geared to dealing with all aspects of subjective discomfort should lead to a better result than treatment that relies on a unidimensional approach.

In conclusion, the results of this preliminary study indicate that a woman's decision to seek treatment for menstrual-related distress is multi-determined. It therefore seems important to assess women for treatment result studies carefully in order to determine the effect on these factors of the various treatment techniques applied. In addition, the results support a multi-modal approach in the treatment of the subjective discomforts that may accompany the monthly hormonal ebb and flow of the menstrual cycle.
Appendix A

Table 7
Elimination of Subjects

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percent$^a$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hormone altering medication</td>
<td>36.89</td>
</tr>
<tr>
<td>Invalid Adjective Checklist</td>
<td>33.01</td>
</tr>
<tr>
<td>Incomplete Data</td>
<td>22.33</td>
</tr>
<tr>
<td>Irregular Cycles</td>
<td>7.77</td>
</tr>
</tbody>
</table>

$^a n = 103.$
Appendix B

Instructions and Personal Data Sheet

Enclosed you will find a packet of questionnaires dealing with women's reproductive health issues. Each questionnaire contains instructions at the top. Please fill in all requested information completely on the questionnaires and complete them in the order in which they are presented. All information is for the examiner's use only and is strictly confidential. Results will be made available on request by dialing the numbers listed below.

Thank you for your participation.

R. A. Markum
653-1407 or 455-7436

1. Date: ___________________________

2. Age: __________________________ (years)

3. Marital Status (check one): Married ____ Single ____
   Divorced ____ Other (specify) ____

4. Please list your religious affiliations:
   _______________________________________

5. Please rate the importance of religion in your life (circle one):
   
   1  2  3  4  5  6  7
   not very important  moderately important  very important
6. Please list any medications that you are currently taking and note the condition(s) for which you are taking them:

7. Please rate your present level of sexual activity (circle one):

1  2  3  4  5  6  7
not very active  moderately active  very active

8. Please indicate if you have ever been pregnant, regardless of the outcome of the pregnancy:

YES ___  NO ___

9. List the date of the onset of your last menstrual period ______

10. My periods last for ___ days and happen once every ___ days.

11. Women experience menstrual distress primarily because of ____________________________ (circle one).

   a. the attitudes toward menstruation which women have learned rather than physiological conditions.

   b. the effects of physiological conditions rather than the attitudes toward menstruation which women have learned.

12. Menstrual-related symptoms are experienced by ___ (circle one).

   a. most women

   b. few women
PLEASE NOTE:

Copyrighted materials in this document have not been filmed at the request of the author. They are available for consultation, however, in the author's university library.

These consist of pages:

- The Menstrual Attitude Questionnaire for Adult Females pg. 134-136
- Menstrual Distress Questionnaire pg. 137-139
- Treatment Questionnaire pg. 140-141

University Microfilms International
300 N Zeeb Rd., Ann Arbor, MI 48106 (313) 761-4700
### Appendix C

**The Menstrual Attitude Questionnaire for Adult Females**

On the line next to each statement, please write the number from the following scale, which best approximates how much you disagree or agree with the statement.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>disagree</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>agree</td>
</tr>
<tr>
<td></td>
<td>strongly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>strongly</td>
</tr>
<tr>
<td></td>
<td>neither disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>nor agree</td>
</tr>
<tr>
<td></td>
<td>nor agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. A woman's performance in sports is not affected negatively by menstruation.  

2. I feel as fit during menstruation as I do during any other time of the month. 

3. Menstruation is something I just have to put up with.  

4. The recurrent monthly flow of menstruation is an external indication of a woman's general good health.  

5. Most women show a weight gain just before or during menstruation.  

6. Cramps are bothersome only if one pays attention to them.  

7. Women are more tired than usual when they are menstruating.  

8. Women just have to accept the fact that they may not perform as well when they are menstruating.  

9. Menstruation provides a way for me to keep in touch with my body.  

10. Menstruation is a reoccurring affirmation of womanhood.  

11. My own moods are not influenced in any major way by the phase of my menstrual cycle.
12. I barely notice the minor physiological effects of my menstrual periods.

13. I expect extra consideration from my friends when I am menstruating.

14. I realize that I cannot expect as much of myself during menstruation compared to the rest of the month.

15. In some ways, I enjoy my menstrual periods.

16. I can tell my period is approaching because of breast tenderness, backache, cramps, or other physical signs.

17. Others should not be critical of a woman who is easily upset before or during her menstrual period.

18. The physiological effects of menstruation are normally no greater than other usual fluctuations in physical state.

19. I don't believe my menstrual period affects how well I do on intellectual tasks.

20. Men have a real advantage in not having the monthly interruption of a menstrual period.

21. Menstruation is an obvious example of the rhythmicity which pervades all of life.

22. I am more easily upset during my premenstrual or menstrual periods than at other times of the month.

23. A woman who attributes her irritability to her approaching menstrual period is neurotic.

24. I don't allow the fact that I'm menstruating to interfere with my usual activities.

25. I hope it will be possible some day to get a menstrual period over within a few minutes.
26. Menstruation allows women to be more aware of their bodies.

27. I have learned to anticipate my menstrual period by the mood changes which precede it.

28. Women who complain of menstrual distress are just using that as an excuse.

29. Menstruation can adversely affect my performance in sports.

30. Avoiding certain activities during menstruation is often very wise.

31. The only thing menstruation is good for is to let me know I'm not pregnant.

32. Most women take too much of the minor physiological effects of menstruation.

33. Premenstrual tension/irritability is all in a woman's head.
Appendix D

Menstrual Distress Questionnaire

Form A

Following is a list of symptoms which women sometimes experience. Please describe your experience of each of these symptoms during the three different time periods listed below:

Col. 1 during your most recent menstrual flow
Col. 2 during the one week before your most recent menstrual flow
Col. 3 during the remainder of your most recent menstrual cycle

For each answer, choose the descriptive category listed which best describes your experience of that symptom during that time. Write the number of that description in the space provided. Even if none of the descriptions are exactly correct, choose the one that best describes your experience. Do not leave any blank spaces.

Descriptive categories
1 - no experience of symptom  4 - present, moderate
2 - barely noticeable  5 - present, strong
3 - present, mild  6 - acute or partially disabling

<table>
<thead>
<tr>
<th></th>
<th>most recent flow (A)</th>
<th>week before (B)</th>
<th>remainder of cycle (C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Weight gain</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Insomnia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Crying</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Lowered school or work performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Muscle stiffness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Forgetfulness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Confusion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Take naps or stay in bed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Headache</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Condition</td>
<td>most recent flow (A)</td>
<td>week before (B)</td>
</tr>
<tr>
<td>-----</td>
<td>-----------------------------------------------</td>
<td>----------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>10.</td>
<td>Skin disorders</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Loneliness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Feelings of suffocation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Affectionate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Orderliness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Stay home from work or school</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Cramps (uterine or pelvic)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>Dizziness or faintness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>Excitement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>Chest pains</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>Avoid social activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>Anxiety</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>Backache</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>Cold sweats</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td>Lowered judgment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25.</td>
<td>Fatigue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26.</td>
<td>Nausea or vomiting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27.</td>
<td>Restlessness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28.</td>
<td>Hot flashes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29.</td>
<td>Difficulty in concentration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30.</td>
<td>Painful or tender breasts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31.</td>
<td>Feelings of well-being</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32.</td>
<td>Buzzing or ringing in ears</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33.</td>
<td>Distractable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34.</td>
<td>Swelling (abdomen, breasts, ankles)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35.</td>
<td>Accidents (cut finger, break dish)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>most recent flow (A)</td>
<td>week before (B)</td>
<td>remainder of cycle (C)</td>
</tr>
<tr>
<td>---</td>
<td>---------------------</td>
<td>------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>36.</td>
<td>Irritability .................</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>37.</td>
<td>General aches and pains ...</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>38.</td>
<td>Mood swings ...............</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>39.</td>
<td>Heart pounding .............</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>40.</td>
<td>Depression (feeling sad or blue) .............</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>41.</td>
<td>Decreased efficiency ......</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>42.</td>
<td>Lowered motor coordination ...............</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>43.</td>
<td>Numbness or tingling in hands or feet .................</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>44.</td>
<td>Change in eating habits ...</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>45.</td>
<td>Tension ...................</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>46.</td>
<td>Blind spots or fuzzy vision ..................</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>47.</td>
<td>Bursts of energy or activity ..................</td>
<td>___</td>
<td>___</td>
</tr>
</tbody>
</table>

48. Treatments for menstrual-related distress have recently been developed by professionals in several different fields. Would you be willing to participate in some treatment for your symptoms?

YES ___  Please indicate for which symptoms:

NO ___  Please indicate your reasons:
Appendix E

Treatment Questionnaire

NOTE: Please answer this questionnaire regardless of how you answered the question on your present willingness to seek treatment.

Each of the paragraphs below describes a type of treatment that has recently been developed to treat menstrual-related symptoms. Please read each of the three descriptions and rank them according to your first, second, and third preference. For example, you would assign a number 1 to the treatment you would prefer the most.

Treatment Type A

This treatment consists primarily of the administration of various prescription drugs. The type of drug administered depends on the types of symptoms that women have. For example, the drug Motrin is taken every 4 to 6 hours for menstrual-related pain. It is taken from the first day of the period until the pain stops. Often, the dosage of the prescribed drug is varied until optimum relief is obtained. In some cases, the drug may be discontinued after several months of treatment. These drugs may be used to treat the symptoms themselves or the hypothesized cause of the symptoms.

Treatment Type B

This treatment includes making self-initiated changes in lifestyle recommended by various authors whose books are available in local bookstores. For example, one treatment involves changes in diet. In this treatment, tea, cola, coffee, and chocolate are completely eliminated from the diet. Salt intake is reduced, particularly during the two weeks prior to the first day of the period. Often, exercise programs are also recommended. These changes in lifestyle that are aimed at the hypothesized cause of the symptoms may be augmented by over-the-counter preparations that are thought to relieve the symptoms themselves.

Treatment Type C

This treatment consists of women working together in small groups as well as more individualized treatment. Women meet and discuss their menstrual-related symptoms and the techniques they have used to cope with them. They may be taught to deal more effectively with symptoms by use of cognitive restructuring which alters their reactions to the symptoms, and/or behavioral programs for relaxation may be developed.
1 = the treatment you would prefer most
2 = the treatment you would prefer next
3 = the treatment you would prefer least

Biofeedback techniques may also be used. This treatment type includes procedures that deal with the hypothesized cause of the symptoms as well as with the symptoms themselves.

<table>
<thead>
<tr>
<th>Treatment Type</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A</td>
<td>......</td>
</tr>
<tr>
<td>Type B</td>
<td>......</td>
</tr>
<tr>
<td>Type C</td>
<td>......</td>
</tr>
</tbody>
</table>

Brief explanation (reason for choice)
Appendix F

Table 8
Religious Affiliation of the Yes- and No-Treatment Groups

<table>
<thead>
<tr>
<th>Religion (percent)</th>
<th>Group</th>
<th>Catholic</th>
<th>Protestant</th>
<th>Jewish</th>
<th>Baptist</th>
<th>Other</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No-treatment</td>
<td>39.37</td>
<td>6.29</td>
<td>31.49</td>
<td>9.44</td>
<td>8.66</td>
<td>4.72</td>
</tr>
<tr>
<td></td>
<td>Yes-treatment</td>
<td>29.57</td>
<td>9.85</td>
<td>32.39</td>
<td>14.08</td>
<td>5.63</td>
<td>8.45</td>
</tr>
</tbody>
</table>

χ² = 4.46, df = 5, p > .48
Appendix G

Table 9

Marital Status of Yes- and No-treatment Groups

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Married</th>
<th>Single</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes-treatment</td>
<td>3</td>
<td>124</td>
</tr>
<tr>
<td>No-treatment</td>
<td>3</td>
<td>68</td>
</tr>
</tbody>
</table>

\[ x^2 = .09, \text{df} = 1, p = .76 \]
Table 10  
Parity of the Yes- and No-treatment Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Parous</th>
<th>Nonparous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes-treatment</td>
<td>7</td>
<td>64</td>
</tr>
<tr>
<td>No-treatment</td>
<td>8</td>
<td>119</td>
</tr>
</tbody>
</table>

\[ x^2 = .43, \text{ df } = 1, \text{ p } = .51 \]
### Appendix I

**Table 11**

Menstrual Cycle Phase of the Yes- and No-treatment Groups

<table>
<thead>
<tr>
<th>Cycle Phase</th>
<th>Group</th>
<th>Menstrual (flow)</th>
<th>Intermenstrual</th>
<th>Premenstrual</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes-treatment</td>
<td>23</td>
<td>32</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>No-treatment</td>
<td>32</td>
<td>64</td>
<td>31</td>
</tr>
</tbody>
</table>

\[
\chi^2 = 1.18, \ df = 2, \ p = .55
\]
Appendix J

Table 12

Analysis of Variance of Group and Choice of Treatment for Importance of Religion and Amount of Sexual Activity

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Importance of Religion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.26</td>
<td>1</td>
<td>.26</td>
<td>.07</td>
</tr>
<tr>
<td>Treatment Choice</td>
<td>2.50</td>
<td>2</td>
<td>1.25</td>
<td>.36</td>
</tr>
<tr>
<td>Group x Treatment</td>
<td>12.71</td>
<td>2</td>
<td>6.35</td>
<td>1.86</td>
</tr>
<tr>
<td>Error</td>
<td>665.56</td>
<td>192</td>
<td>3.46</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>X/SD Yes-treatment Group = 4.62/1.94
X/SD No-treatment Group = 4.61/1.82

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of Sexual Activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group&lt;sup&gt;b&lt;/sup&gt;</td>
<td>3.02</td>
<td>1</td>
<td>3.02</td>
<td>.81</td>
</tr>
<tr>
<td>Treatment Choice</td>
<td>15.89</td>
<td>2</td>
<td>7.94</td>
<td>2.12</td>
</tr>
<tr>
<td>Group x Treatment</td>
<td>.86</td>
<td>2</td>
<td>.43</td>
<td>.11</td>
</tr>
<tr>
<td>Error</td>
<td>719.09</td>
<td>192</td>
<td>3.75</td>
<td></td>
</tr>
</tbody>
</table>

<sup>b</sup>X/SD Yes-treatment Group = 2.72/1.97
X/SD No-treatment Group = 2.42/1.93
Appendix K

Table 13

Analysis of Variance of Group and Choice of Treatment for Menstrual Flow Length and Menstrual Cycle Length

<table>
<thead>
<tr>
<th></th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Length of Flow Phase</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group</td>
<td>50.54</td>
<td>1</td>
<td>50.54</td>
<td>1.14</td>
</tr>
<tr>
<td>Treatment Choice</td>
<td>62.05</td>
<td>2</td>
<td>31.02</td>
<td>.70</td>
</tr>
<tr>
<td>Group x Treatment</td>
<td>55.10</td>
<td>2</td>
<td>27.55</td>
<td>.62</td>
</tr>
<tr>
<td>Error</td>
<td>8477.96</td>
<td>192</td>
<td>44.16</td>
<td></td>
</tr>
</tbody>
</table>

*aX/SD Yes-treatment Group = 6.48/1.98
X/SD No-treatment Group = 5.10/1.04

<table>
<thead>
<tr>
<th></th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Length of Menstrual Cycle</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group</td>
<td>2.54</td>
<td>1</td>
<td>2.54</td>
<td>.10</td>
</tr>
<tr>
<td>Treatment Choice</td>
<td>52.64</td>
<td>2</td>
<td>26.32</td>
<td>1.03</td>
</tr>
<tr>
<td>Group x Treatment</td>
<td>65.43</td>
<td>2</td>
<td>32.71</td>
<td>1.28</td>
</tr>
<tr>
<td>Error</td>
<td>4901.42</td>
<td>192</td>
<td>25.53</td>
<td></td>
</tr>
</tbody>
</table>

*bX/SD Yes-treatment Group = 28.75/5.43
X/SD No-treatment Group = 29.24/4.86
### Table 14

**Correlation Values for Demographic Variables and Group Membership**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Values of $r$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.05</td>
</tr>
<tr>
<td>Marital Status</td>
<td>-.05</td>
</tr>
<tr>
<td>Religion</td>
<td>.10</td>
</tr>
<tr>
<td>Importance of Religion</td>
<td>.00</td>
</tr>
<tr>
<td>Sexual Activity</td>
<td>.07</td>
</tr>
<tr>
<td>Parity</td>
<td>.06</td>
</tr>
<tr>
<td>Cycle Phase When Tested</td>
<td>-.06</td>
</tr>
<tr>
<td>Number of Flow Days</td>
<td>.10</td>
</tr>
<tr>
<td>Number of Cycle Days</td>
<td>-.05</td>
</tr>
<tr>
<td>Attribution</td>
<td>.06</td>
</tr>
<tr>
<td>Communality</td>
<td>.08</td>
</tr>
<tr>
<td>Preferred Treatment</td>
<td>-.07</td>
</tr>
</tbody>
</table>

*Note: None are significant at .05 level.*
Appendix M

Table 15

Point-biserial Correlation Values for Group Treatment with MDQ Scales Across Menstrual and Premenstrual Cycle Phases

<table>
<thead>
<tr>
<th>Scale</th>
<th>Menstrual Phase</th>
<th>Premenstrual Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain</td>
<td>.23**</td>
<td>.09</td>
</tr>
<tr>
<td>Concentration</td>
<td>.24**</td>
<td>.12</td>
</tr>
<tr>
<td>Behavior Change</td>
<td>.19*</td>
<td>.11</td>
</tr>
<tr>
<td>Autonomic Reaction</td>
<td>.26**</td>
<td>.08</td>
</tr>
<tr>
<td>Water Retention</td>
<td>.25**</td>
<td>.14</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>.18*</td>
<td>-.12</td>
</tr>
<tr>
<td>Arousal</td>
<td>-.12</td>
<td>-.00</td>
</tr>
<tr>
<td>Control</td>
<td>.33**</td>
<td>.20</td>
</tr>
<tr>
<td>Total</td>
<td>.29**</td>
<td>.15</td>
</tr>
</tbody>
</table>

*p < .05

**p < .01
Appendix N

Table 16
Means and Standard Deviations for 25 Scales of the Adjective Checklist

<table>
<thead>
<tr>
<th>Scale</th>
<th>X/SD (Yes-treatment)</th>
<th>X/SD (No-treatment)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Favorable Adjectives</td>
<td>46.56/9.45</td>
<td>47.86/8.62</td>
</tr>
<tr>
<td>Unfavorable Adjectives</td>
<td>49.78/7.99</td>
<td>49.24/7.89</td>
</tr>
<tr>
<td>Communality</td>
<td>48.32/8.01</td>
<td>50.13/8.80</td>
</tr>
<tr>
<td>Achievement</td>
<td>49.09/8.97</td>
<td>48.42/7.68</td>
</tr>
<tr>
<td>Dominance</td>
<td>51.62/8.77</td>
<td>50.27/8.53</td>
</tr>
<tr>
<td>Endurance</td>
<td>47.61/7.05</td>
<td>48.15/6.74</td>
</tr>
<tr>
<td>Order</td>
<td>45.31/7.09</td>
<td>46.86/6.71</td>
</tr>
<tr>
<td>Intraception</td>
<td>46.47/9.24</td>
<td>47.95/8.46</td>
</tr>
<tr>
<td>Nurturance</td>
<td>52.04/9.41</td>
<td>51.64/8.18</td>
</tr>
<tr>
<td>Affiliation</td>
<td>49.78/9.28</td>
<td>48.67/8.92</td>
</tr>
<tr>
<td>Heterosexuality</td>
<td>55.49/9.71</td>
<td>53.23/9.15</td>
</tr>
<tr>
<td>Exhibition</td>
<td>53.78/8.73</td>
<td>51.36/9.09</td>
</tr>
<tr>
<td>Autonomy</td>
<td>51.19/9.84</td>
<td>49.46/8.17</td>
</tr>
<tr>
<td>Aggression</td>
<td>53.51/9.85</td>
<td>51.27/8.73</td>
</tr>
<tr>
<td>Change</td>
<td>54.23/8.40</td>
<td>51.80/8.45</td>
</tr>
<tr>
<td>Succurance</td>
<td>50.68/8.83</td>
<td>49.13/8.60</td>
</tr>
<tr>
<td>Abasement</td>
<td>49.16/8.28</td>
<td>49.07/9.07</td>
</tr>
<tr>
<td>Deference</td>
<td>49.24/9.11</td>
<td>49.48/9.25</td>
</tr>
<tr>
<td>Counseling Readiness</td>
<td>48.69/10.07</td>
<td>48.12/9.49</td>
</tr>
<tr>
<td>Self-Control</td>
<td>46.39/9.53</td>
<td>48.59/9.00</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>51.56/9.30</td>
<td>51.01/9.79</td>
</tr>
<tr>
<td>Personal Adjustment</td>
<td>49.52/7.79</td>
<td>49.23/7.46</td>
</tr>
<tr>
<td>Military Leadership</td>
<td>45.19/8.32</td>
<td>44.72/7.01</td>
</tr>
<tr>
<td>Masculine</td>
<td>50.65/10.20</td>
<td>49.31/9.35</td>
</tr>
<tr>
<td>Feminine</td>
<td>50.78/11.67</td>
<td>48.51/9.59</td>
</tr>
</tbody>
</table>

Note: None of the individual mean comparisons proved to be significant.

$T^2 = 34.71; F(25, 172) = 1.22; p = .23$
Appendix 0

Table 17

Belief in Communality of Menstrual Symptoms for the Yes- and No-Treatment Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Communality (percent)</th>
<th>Most Women</th>
<th>Few Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes-Treatment</td>
<td>91</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>No-Treatment</td>
<td>86</td>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>
Appendix P

Table 18

Attribution of the Cause of Menstrual Symptoms for the Yes- and No-Treatment Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Physiological</th>
<th>Societal Attitudes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes-treatment</td>
<td>86</td>
<td>14</td>
</tr>
<tr>
<td>No-Treatment</td>
<td>81</td>
<td>19</td>
</tr>
</tbody>
</table>
Appendix Q

Table 19
Point-biserial Correlation Values for the MAQ Scales
and Group Membership

<table>
<thead>
<tr>
<th>Scales</th>
<th>Values of $r$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debilitating</td>
<td>.25*</td>
</tr>
<tr>
<td>Bothersome</td>
<td>.15</td>
</tr>
<tr>
<td>Natural</td>
<td>-.05</td>
</tr>
<tr>
<td>Predictable</td>
<td>.25*</td>
</tr>
<tr>
<td>Denial</td>
<td>-.20*</td>
</tr>
</tbody>
</table>

*p < .01
### Table 20

Distribution and Chi Square for the Yes- and No-treatment Groups for Effectiveness of Previous Treatments

<table>
<thead>
<tr>
<th>Group</th>
<th>Effective</th>
<th>Not Effective (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes-treatment</td>
<td>83</td>
<td>17</td>
</tr>
<tr>
<td>No-treatment</td>
<td>75</td>
<td>25</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 1.37, \ df = 1, \ p = .24 \]
### Table 21

Distribution and Chi Square for the Yes- and No-treatment Groups for Types of Symptoms Previously Treated

<table>
<thead>
<tr>
<th>Group</th>
<th>Menstrual</th>
<th>Mixed</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes-treatment</td>
<td>85</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>No-treatment</td>
<td>78</td>
<td>4</td>
<td>18</td>
</tr>
</tbody>
</table>

*No subject reported treating premenstrual symptoms alone.*

\[ \chi^2 = 10.66, \text{ df } = 2, \ p = .005 \]
Appendix T

Table 22

Distribution and Chi Square for the Yes- and No-Treatment Groups for Types of Previous Treatment

<table>
<thead>
<tr>
<th>Treatment Type (percent)</th>
<th>Medical</th>
<th>Self-administered</th>
<th>Mixed</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes-treatment</td>
<td>3</td>
<td>73</td>
<td>3</td>
<td>18</td>
</tr>
<tr>
<td>No-treatment</td>
<td>5</td>
<td>79</td>
<td>14</td>
<td>4</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 15.31, \text{df} = 3, p = .002 \]
Appendix U

The following are examples of explanations that representative members of each group have provided regarding their treatment preferences.

Yes-treatment Group

1) Subject #289: "I don't like drug treatments and I think that your mental awareness and general health has a lot to do with it as well as hormonal imbalance." (Choice: Behavioral Treatment.)

2) Subject #52: "I prefer prescription drugs for my pain because talking about my period is not going to stop the pain. The pain is not in your head. I like quick relief. I prefer the diet change next because I tend to crave chocolate before my period. I don't know if this contributes to the pain." (Choice: Medical Treatment.)

3) Subject #41: "I don't think it is a psychological problem to be treated with talking."
(Choice: Medical Treatment.)

4) Subject # "I'd prefer to try a natural way to relieve any kind of pain. I don't like to sit around and talk about it. I think it makes the pain worse. I try not to think too much about the pain." (Choice: Self-administered Treatment.)
5) Subject #80: "Changing your diet is more sensible than meeting with other people." (Choice: Self-administered Treatment.)

6) Subject #31: "Change in diet is the most sensible as far as health concerns go...it seems most natural and simple. If that fails, the drug is the fastest relief. Talking is okay but results are what is important." (Choice: Self-administered Treatment.)

No-treatment Group

1) Subject #289: "Cognitive restructuring can lead to lifestyle changes and this could possibly relieve symptoms. I believe drugs should be the last alternative." (Choice: Behavioral Treatment.)

2) Subject #267: "I don't like taking medication--especially as my symptoms are mild. Yet, I do feel that many of the symptoms are physiological. Treatment C...(behavioral) ...would be supportive, but I guess I don't feel that menstrual symptoms are completely psychological." (Choice: Medical Treatment.)

3) Subject #57: "If I had real problems I would take aspirin or mydol anyhow so taking another drug would not bother me. I don't like
changes in lifestyle. The discussion part of this seems ridiculous." (Choice: Medical Treatment.)

4) Subject #143: "Since my symptoms aren't severe I find diet and lifestyle changes helpful. Don't like taking drugs. Don't think it's psychological." (Choice: Self-administered Treatment.)

5) Subject #144: "...don't like medication. Easiest... (self-administered)...and healthiest. Not convenient... (behavioral)...." (Choice: Self-administered Treatment.)
References


Mullen, F. G. (September, 1971). Treatment of dysmenorrhea by professional and student behavior therapists. Presented at the fifth annual meeting of the Association for Advancement of Behavior Therapy, Washington, D.C.


Sherbow, E. P. (October 3, 1982). Personal communication.


