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THE UNIVERSITY OF ALBERTA

PSYCHOLOGICAL PROFILES OF WOMEN WITH PREMENSTRUAL COMPLAINT

by

(C) CEINWEN E. CUMMING

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Psychological Profiles in Women with Premenstrual Complaint" submitted by Ceinwen E. Cumming in partial fulfilment for the degree of Doctor of Philosophy in Counselling Psychology

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Supervisor

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External examiner

Date July 20th 1987

DEDICATION

THIS THESIS IS DEDICATED TO

SIMON

WHO SHARED OUR LIFE FOR 18 YEARS.

ABSTRACT

A link has been suggested between complaint about premenstrual problems and psychiatric illness (Clare, 1983). To determine whether women complaining of and seeking treatment for such problems have ongoing psychological disturbance, a cross-sectional, comparative study was undertaken across four groups of reproductive-age women. Subjects were 35 patients with premenstrual complaint and no psychiatric history, 35 women with no premenstrual complaint, 35 patients with affective disorders, and 35 women from the community at large. All women in the study except those in the community sample were tested in the intermenstrual phase of the menstrual cycle (after menses but before the twelfth cycle day). Levels of premenstrual change were measured in the first three groups of women using the Premenstrual Assessment Form (Halbreich, Endicott, Schacht, & Nee, 1982). Psychological tests administered to all subjects were Profile of Mood States (McNair, Lorr, & Droppleman, 1971), Stait-Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970), IPAT Anxiety Scale (Cattell & Scheier, 1963), and IPAT Depression Scale (Krug & Laughlin, 1976). Demographic data and information concerning present and past stresses were also collected.

Patients with severe premenstrual complaint were distinguishable from psychiatric patients and from non-complainers in level of premenstrual change. Premenstrual complainers were also

distinguishable from psychiatric patients on assessment of intermenstrual mood state. They were no different from women within the community at large or from non-complainers. When premenstrual complainers were asked to report on time periods which include the premenstrual phase of the cycle, results at variance with those obtained in relation to state mood were found. While not unlike the women from the community at large in longer term affective characteristics, they were consistently different from non-complainers and sometimes indistinguishable from psychiatric patients with affective disorders. Premenstrual complainers also reported higher levels of past external stresses than women taken from the community at large.

The study has implications for biological and psychological research, for clinical management, and for educational and counselling approaches to women with premenstrual complaint.

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CHAPTER 1

Introduction

References to physical, emotional, and behavioral changes occurring in women in synchrony with the menstrual cycle have been traced back through the centuries to ancient times (Clare, 1983) and across differing cultures (Janiger, Riffenburgh, & Kirsch, 1972). However, the term premenstrual tension (PMT) was first coined by Frank in 1931 to describe a pattern of debilitating symptoms he observed recurring cyclically prior to the onset of menses in some women patients. In 1953, Greene and Dalton decided that the pattern of symptoms they observed was better named premenstrual syndrome (PMS) because tension is only one of the reported symptoms. The focus of the present study was on the psychological characteristics of women who believe they have this syndrome.

Over recent years, premenstrual syndrome has attracted much public attention. It has been successfully used in the courts on more than one occasion in Britain, by defence lawyers, as grounds for commuting a charge of murder to that of manslaughter (Brahams, 1981). The syndrome has also been accepted in a Canadian court as a mitigating factor in sentencing a woman accused of stabbing her husband (Martin, 1987). In 1986, premenstrual syndrome became the centre of some attention when the American Psychiatric Association proposed including it in the revised version of the third edition of Diagnostic and Statistical Manual of Mental Disorders (Holden, 1986). As Hallman (1986)

comments, up to 100 per cent of women have been described as having premenstrual syndrome. Consequently, the questions of whether or not premenstrual syndrome always reflects psychiatric illness or may result in criminal behavior are seemingly of vital significance. There may be implications not only for women themselves and their self-image but also for those who prepare them for roles of responsibility both in the work force and in the home. Even if a much smaller number of women is involved, the questions still hold considerable relevance, politically, educationally, and interpersonally.

Despite controversy about the validity of premenstrual symptom reporting, particularly in healthy, young college students (Parlee, 1974; May, 1976), it is likely that the majority of normally ovulating women actually do experience a series of symptoms which herald the onset of the menstrual period (Magyar, Boyars, Marshall, & Abraham, 1979). The cyclical molimina may include: cramping pains; sensation of bloating with or without obvious fluid retention; cravings for salt, sweets or chocolate; breast discomfort and enlargement; and alteration in mood, with anxiety, irritability, depression, or other symptoms (Abraham, 1980). Such molimina, which do not interrupt the pattern of everyday life, are best not described as premenstrual syndrome. However, there is a tendency for this term to be loosely used to describe normal cyclical changes.

It has been estimated that premenstrual symptoms may lead to transient impairment of normal activities in approximately 40 per cent of

women (Reid, 1985). In addition, recent studies suggest that in approximately two to eight per cent of the female population, a profound disruption of normal daily life may occur on a repetitive, cyclical basis (Woods, Most, & Dery, 1982). Changes are so severe that the women involved engage in treatment seeking behavior. Though there is far from general consensus about terminology, it is usually this group of women which is described in the gynecologic literature as suffering from premenstrual syndrome (Freeman, Sondheimer, Weinbaum, & Rickels, 1985).

Reproductive-age women with psychiatric illness, particularly those who are diagnosed as having affective disorders, may experience exacerbations of their symptoms premenstrually (Hallman, 1986; Kashiwagi, McClure, & Wetzel, 1976). Patients with pre-existing psychiatric disorders are more likely to be admitted to hospital premenstrually than at any other time (Abrahamovitz, Baker, & Fisher, 1982). Michelle Harrison, a physician with an international reputation in the area of premenstrual syndrome, has coined the term premenstrual magnification (PMM) to describe what may happen for women with on-going psychiatric problems (Harrison, 1985). Possibly owing to the considerable amount of publicity which premenstrual syndrome generated in the early part of this decade, such women may attribute their difficulties to premenstrual syndrome (Keye, Hammond, & Strong, 1986; DeJong et al., 1986). In the psychiatric literature, premenstrual

exacerbation is sometimes described as premenstrual syndrome (Hallman, 1986).

Premenstrual syndrome is the subject of much controversy in the scientific literature of the medical and psychological disciplines (Abplanalp, 1983). At present, there is no commonly accepted definition of what constitutes the syndrome or syndromes, for there may be more than one (Rubinow & Roy-Byrne, 1984). Even the existence of premenstrual syndrome has been questioned, at times, by medical doctors (Blume, 1983) and by psychologists (Ruble, 1977; Slade, 1984). Such questioning is not surprising, given the diverse experiences of differing populations which the term itself is used to describe. In addition, it has been found that some healthy young college students expect premenstrual changes which are not confirmed on retrospective report (May, 1976). Furthermore, some psychiatric patients report premenstrual changes which are also not confirmed on retrospective report (Rubinow, Roy-Byrne, Hoban, Gold, & Post, 1984).

Despite the controversy which exists about premenstrual syndrome in the professional literature, women attest to the experience of premenstrual change (Parlee, 1973). For some women these changes are severe enough to interfere with the pattern of their everyday lives. Psychological changes are often reported as being more difficult to handle than the physical discomfort (Abplanalp, 1983). There is disagreement in the literature as to whether or not all women who complain of premenstrual problems actually have on-going

psychological disorders. Some research suggests that they may well have such disorders (Stout, Steege, Blazer, & George, 1986). Other research suggests that a group of women who only experience difficulties in the premenstrual phase of the menstrual cycle exists (Freeman, Sondheimer, Weinbaum, & Rickels, 1985). The existence of a group of women who complain of premenstrual problems but who are free from psychological disorders at other times has implications not only for treatment but also for research into etiology.

It is precisely this group of women who complain of premenstrual problems but who exhibit no discernable psychological distress at other times which is the focus of this study. The purpose of this research was specifically to delineate certain relevant psychological characteristics of women who complain of premenstrual problems and who are referred for gynecological rather than psychiatric evaluation by their general practitioners. As Freeman, Sondheimer, Weinbaum, and Rickels (1985) point out, it is in this population that women without on-going psychological difficulties are more likely to be found. The focus of the study was on the women who complain rather than on the syndrome per se since actual confirmation of its existence requires some form of prospective assessment, such as a daily symptom rating scale. Analysis of the ensuing data for research purposes is highly complex and constitutes a step beyond the scope of the study.

In order that the results of the study should provide comprehensive information, a cross-sectional, comparative approach was taken across

four groups of women. These were the group of women who complain of problems and who seek treatment for them, a group of non-complainers who knew the purpose of the study, a non-treatment group without knowledge of the precise nature of the study, and a group of women with diagnosed affective disorders. Testing was undertaken at a time in the menstrual cycle when the women who complain only of premenstrual problems were expected to be relatively symptom-free.

CHAPTER 2

REVIEW OF THE LITERATURE: I

Biological Perspective

Myths about the effects of menstrual cycle phase on the psychological and behavioral functioning of women in general still abound (Toth, Delaney, & Lupton, 1981). The "raging hormone" hypothesis as an explanation for female behavior, including that of women in positions of power and authority, has not yet lost credibility in all quarters (Sommer, 1985). However, even in the case of women who have severe premenstrual problems, it may be too simplistic to explain what is happening as solely the direct result of their biology (Clare, 1985a). Nevertheless, there is a biological perspective which must be taken in to account in any comprehensive literature review.

As stated previously, the purpose of this study was to provide information about the psychological characteristics of women who believe they have premenstrual syndrome and who are referred to gynecological practice for evaluation by their general practitioners. Consequently, psychological considerations are of major importance in this literature review. The biological aspect, however, is of some practical and theoretical relevance. Therefore, the focus of this chapter is on the biological perspective, while the following chapter contains a review of the literature from the psychological perspective. Included in the present chapter is information concerning the menstrual cycle which forms the basis of the practical underpinnings for the study. Also

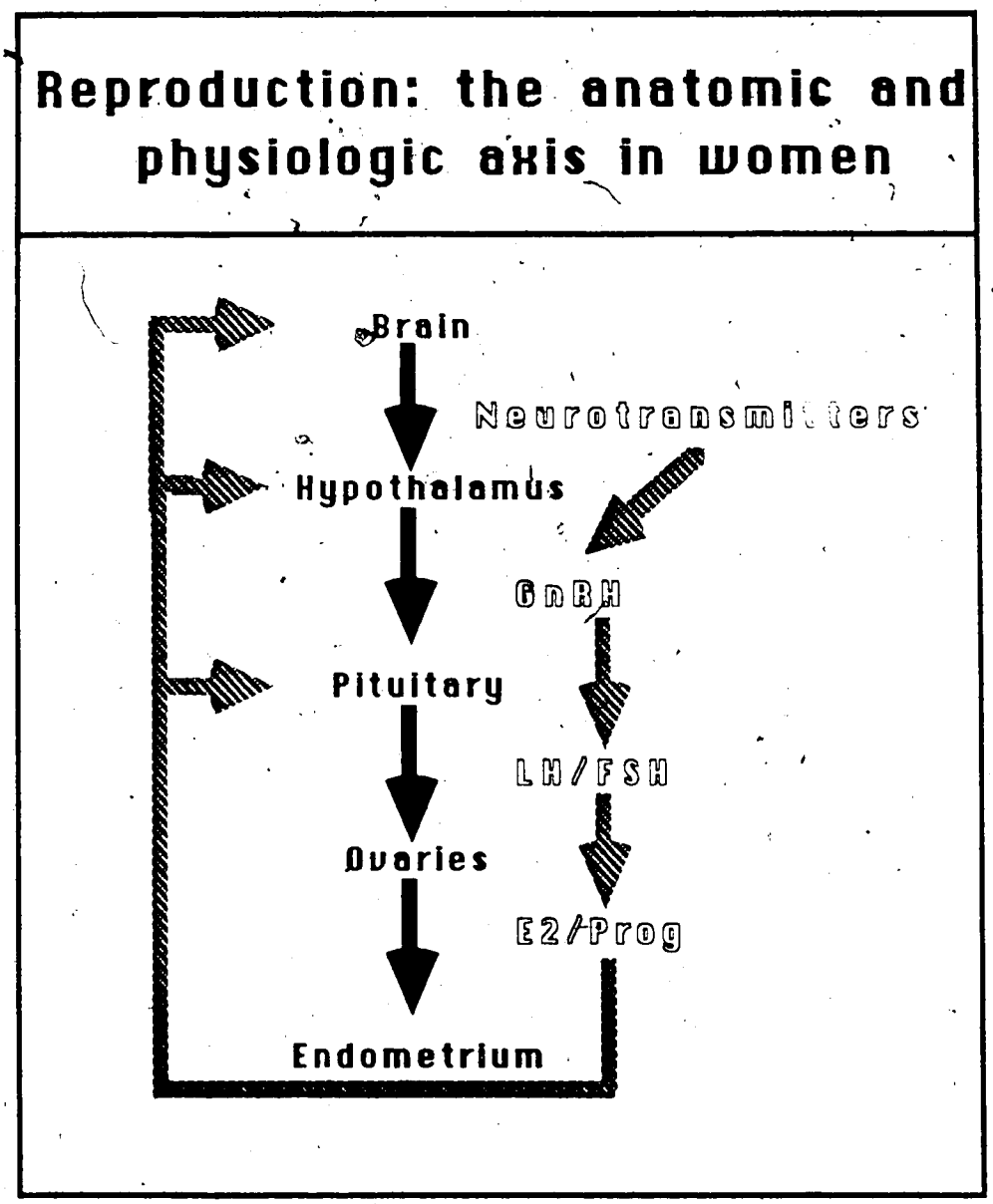
included is a description of the somatic symptoms about which women complain. A general outline of the biologically related factors involved in subject selection is provided. Furthermore, selected biological explanations, which have been proposed to explain premenstrual symptoms, are reviewed.

The Menstrual Cycle

The menstrual cycle is a biological rhythm which occurs in girls and women of reproductive age. There are many extensive reviews of the literature concerning this biological rhythm, such as those of Ferin (1982), Fritz and Speroff (1982), Linkie (1982), and Southam and Gonzaga (1965).

The menstrual flow (commonly called the "period") occurs on an approximately monthly basis. It is the external expression of the repetitive functioning of the hypothalmic-pituitary-ovarian axis. The axis is a functional endocrine system which has its anatomical structures in the hypothalmus, the pituitary, and the ovary. The regulation of the functioning of the ovary is mediated through the release of gonadotropin releasing hormone (GnRH) which controls the secretion of luteinizing hormone (LH) and follicle stimulating hormone (FSH) from the pituitary gland (see Figure 1). LH and FSH are, in turn, directly responsible for follicular maturation, ovulation, and luteinization of the follicle.

Figure1

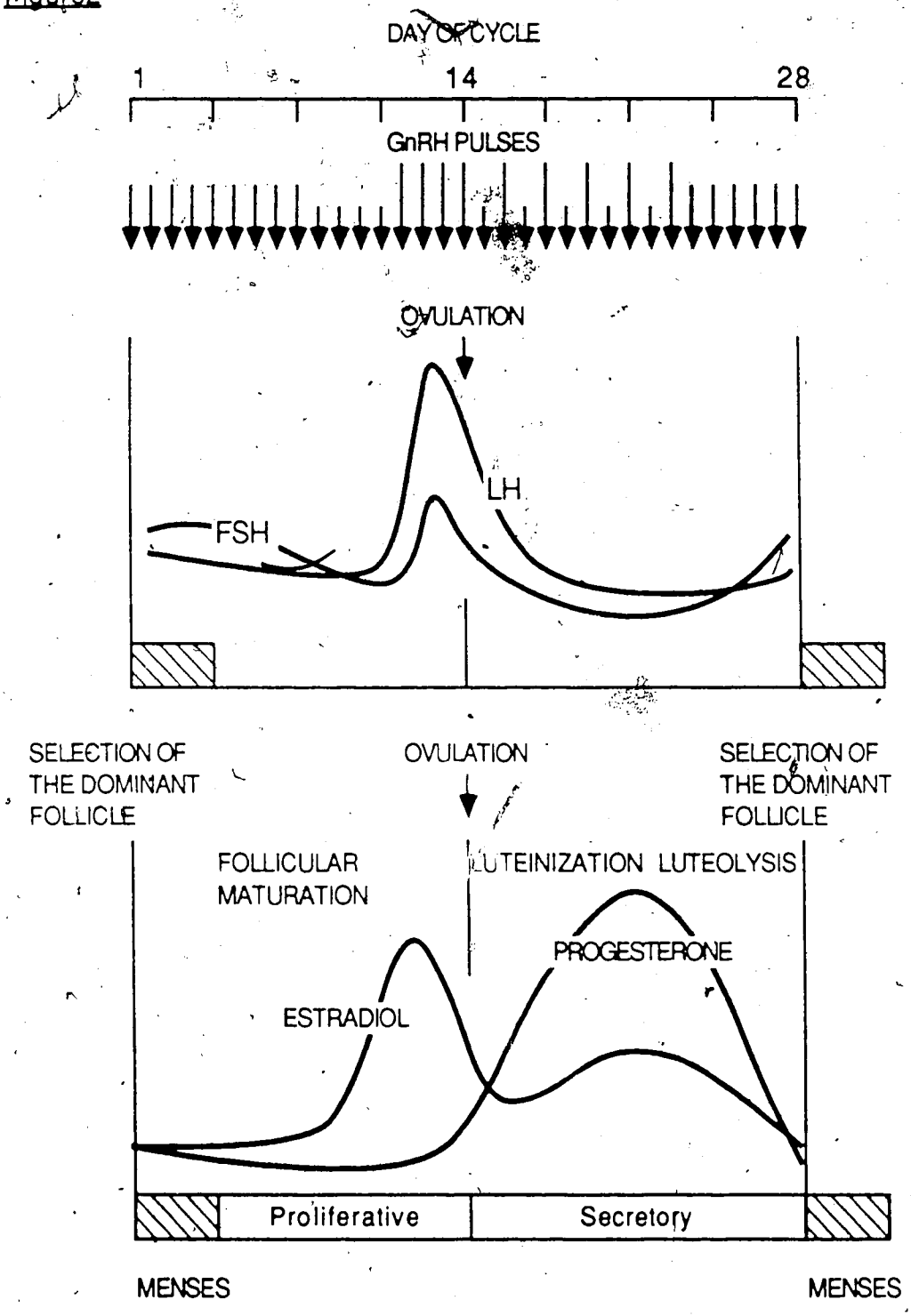


Ovarian Regulation

Luteinization is the process whereby the post-ovulatory follicle is converted into a steroidogenic organ primarily producing progesterone. Accompanying these changes is a series of well-coordinated fluctuations in circulating levels of ovarian steroid hormones (sex hormones), particularly estradiol (an estrogen) and progesterone (see Figure 2). These hormones are responsible for the development of the endometrium and their withdrawal towards the end of the cycle leads to the shedding of the lining of the uterus, which is menstruation. Feedback of steroid hormones also modulates hypothalmic-pituitary function, influencing the release of pulsatile GnRH. GnRH release is also affected by the endogenous opiates and catacholaminergic neurones which produce epinephrine and dopamine. As shown by the work of Quigley, Judd, Gilliland, and Yen (1979) and Quigley and Yen (1980), there is a change in dopamine and in opiate tone throughout the menstrual cycle.

Day 1 of the menstrual cycle is the day on which the menstrual flow commences. The duration of the flow varies from woman to woman. In the idealized, average 28-day cycle, ovulation is expected to occur on or close to day 14, which will be approximately midway through the cycle. Prior to ovulation, the phase during which follicular maturation occurs is named the follicular phase. The post-ovulatory phase is the luteal phase which is characterized by the secretion of progesterone from the ovary. The length of the follicular phase varies across women with cycles longer or shorter than 28 days. Cycle normal range is 21 to 35 days. The

Figure2



Integration of functional and hormonal events of the menstrual cycle

length of the luteal phase remains constant. Potentially synchronous with the luteal phase of the cycle is the premenstrual period during which symptoms are reported. The post- menstrual or intermenstrual period constitutes the time between the cessation of menses and ovulation. This is the time during which women who complain of premenstrual, psychological, and other problems should be symptom-free (O'Brien, 1985). A detailed description of the procedures used to calculate cycle phase and establish a suitable day for assessment is included in Chapter 4. Information to establish cycle phase was collected from all women included in the study except those in the non-treatment group.

Somatic Symptoms

A very wide range of premenstrually experienced, somatic symptomatology is reported (Budoff, 1983; Dalton, 1984). Amongst the many symptoms described are acne, herpes outbreaks, headache, fainting, dizziness, backache, swelling of fingers and legs, constipation followed by diarrhea, food cravings, anorexia, nausea, less frequent urination, and breast tenderness and swelling (Budoff, 1983). Rubinow and Roy-Byrne (1984) list a number of additional symptoms. Important among these symptoms are weight gain and abdominal bloating. Dysmenorrhea or cramping pain on menstruation is not included in the description of premenstrual somatic symptoms.

Typical somatic symptoms which are reported as occurring premenstrually are breast tenderness and swelling, abdominal distention, and headache (O'Brien, 1982). Breast and abdominal

discomfort constitute core symptoms for premenstrual syndromes centering on physical complaint which have been described in the literature (Abraham, 1980; Halbreich & Endicott, 1982). This symptom cluster is considered to be the one most frequently found and is also associated with complaints about weight increase. Interestingly, there may not be an actual weight increase or any abdominal distention but the perception of bloating may occur (Faratian et al., 1984). According to Faratian and colleagues, the perception of bloating may arise from fluid re-distribution premenstrually in the body.

Premenstrual somatic symptoms may occur together with changes in mood or may be found alone (Clare, 1983). The question of whether there is any more than a temporal relationship between the psychological and somatic symptoms remains a matter for debate (Abplanalp, 1983; Slade, 1984). In populations of young, non-complaining women, the somatic premenstrual changes are generally confirmed on prospective recording, while psychological ones are frequently not (May, 1976; Slade, 1984). In such populations, however, the changes reported are likely to represent "cyclical molimina", as mentioned in Chapter 1, rather than symptoms causing extreme discomfort. As yet, however, it is prudent not to dichotomize prematurely the psychological and physical problems into completely separate entities (Freeman, Sondheimer, Weinbaum, & Rickels, 1985).

The focus of the present study was the psychological aspect of premenstrual complaint. Consequently, those patients with only physical

symptoms were excluded from the research. The majority of patients seen in gynecologic practice who believe they have premenstrual syndrome present with overlapping physical and psychological complaints (Freeman, Sondheimer, Weinbaum, & Rickels, 1985; Magos, Brincat, & Studd, 1986). Therefore, it was decided that the subjects of the present study should involve women with complaint about both psychological and somatic symptoms. Their major concern, however, was about their premenstrual psychological difficulties.

Hormonal Medication, Age, Parity, and Gynecologic History

Hormonal medication in the form of the contraceptive pill disrupts the normal pattern of menstrual cycles (Paige, 1971). Some women who take the pill complain about cyclic mood changes but these are not premenstrual changes (Cullberg, 1972). Consequently, from the biological perspective, all women using this form of contraception were excluded from the treatment groups in the study.

Reid (1985) states that age is not a factor which influences premenstrual complaint. Halbreich, Endicott, Schacht, and Nee (1982) did not find any age effects. However, there are indications that premenstrual symptoms may increase in severity and frequency with age (Golub, 1976; Haskett, Steiner, Osmun, & Carroll, 1980; Sanders, Warner, Backstrom, & Bancroft, 1983). Consequently, young teenage women were excluded from the treatment groups in the study. After 40 to 45 years of age menopausal symptoms may interfere with findings. Therefore, older women were carefully screened for menopausal

symptoms and no women over the age of 45 were included in the study. There are indications that premenstrual complaints are most severe between the ages of 30 and 40 (Abplanalp, Haskett, & Rose, 1980; Osmun, Steiner, & Haskett, 1983).

Since there are indications that premenstrual symptoms may increase after childbirth (Reid, 1985), parity was recorded in the study. Other relevant gynecologic information such as any surgery or treatment for endometriosis was also recorded. Endometriosis, a potentially painful condition where the lining of the uterus grows into the peritoneal cavity, is sometimes confused with premenstrual syndrome.

Biological Explanations of Premenstrual Change

Although there is no known etiology for premenstrual symptoms (Rubinow & Roy-Byrne, 1984), many etiological explanations have been advanced. Explanations range from the essentially biological to the predominantly psychological (Dennerstein, Spencer-Gardner, & Burrows, 1984). An evolutionary theory which builds upon knowledge about behaviour in primates other than humans has even been proposed (Rosseinsky & Hall, 1974). Recently, interactional theories which implicate biological, psychological, and environmental factors have been gaining some popularity (Clare, 1983, 1985b).

There is a very wide range of biological theories which attempt to explain premenstrual symptoms. For example, pathophysiological explanations have implicated estrogen, progesterone, prolactin, prostaglandins, and endogenous opiates (O'Brien, 1985). Pathogenesis

has also been attributed to an imbalance in the renin-angiotensin-aldosterone system, to hypoglycemia, and to vitamin deficiency (Reid, 1985). In many of the explanations, an attempt is made to account for both the psychological and physical symptoms associated with premenstrual complaint. The physical symptoms which have received most explanatory attention are the so-called "water retention" ones. Differing hypotheses have also been proposed to account for apparent symptom clusters believed to form different "syndromes" (Abraham, 1980). In this brief review, explanations selected for inclusion are those which are most prominent in the literature at present or which have had most influence on the field over the past half century.

Ovarian hormones. A number of theories have implicated the ovarian hormones in the etiology of premenstrual problems. These hormones have been involved in explanations of premenstrual psychological changes because of the proposed energizing effects of estrogen and the tranquillizing effects of progesterone (Benedek & Rubinstein, 1942). In addition, estrogen and progesterone both have effects on water retention (O'Brien, 1985). A theory postulating an excess of estradiol has been attributed to Frank who, as it was noted earlier, first described premenstrual tension in 1931 (O'Brien, 1985). One of Frank's treatments for this proposed condition was to irradiate the ovaries.

Progesterone deficiency (Brush, 1977) or an imbalance in the progesterone to estrogen ratio (Greene & Dalton, 1953; Morton, 1950)

have also both been suggested as causative factors. The apparently beneficial effects of progesterone therapy have been extensively described by Dalton (1984). Treatment studies using progesterone have produced conflicting results (Reid, 1985). Sampson (1979), in a double blind, well-designed study, found progesterone to be no better in controlling symptomatology than placebo. From what is currently known about the complexity of menstrual cycle events, simple explanations involving the postulation of hormonal access, deficiency, or imbalance are considered to be questionable (Clare, 1985a). Nevertheless, there may well be hormonal involvement, in some way, because symptoms cease on oophorectomy or when the activity of the hypothalmic-pituitary-ovarian axis is temporarily halted by medication (Reid, 1985).

Prolactin. The role that prolactin, a peptide, might play in the etiology of premenstrual symptoms has been the centre of much theorizing (Carroll & Steiner, 1978; Munday, 1977). It has been hypothesized that levels of prolactin are abnormally high in women who complain of premenstrual problems. O'Brien (1985) commented that prolactin has been associated with premenstrual syndrome for three main reasons. Firstly, prolactin has a direct effect on the breasts and might be responsible for the breast discomfort reported. Secondly, prolactin levels are affected by psychological stress and bear an indirect relationship with dopamine metabolism and release. Finally, prolactin is associated with the retention of sodium, potassium, and water. There are also psychological changes associated with hyperprolactinaemia

Interestingly, in psychiatry, prolactin has received some attention as a possible factor in the genesis of depression (Fuente & Rosenblum, 1981). It was also considered as being possibly involved in the development of premenstrual depression (Carroll & Steiner, 1978; Steiner & Carroll, 1977). Bromocriptine, which lowers prolactin levels, has been found useful only in the symptomatic treatment of breast discomfort (Chakmakjian, 1983). In addition, recent studies have not served to confirm the prolactin hypothesis (Steiner, Haskett, Carroll, Hays, & Rubin, 1984a, 1984b).

Prostaglandins. According to O'Brien (1985) prostaglandins, which are ubiquitous in the body, have the diverse range of activity sufficient to account for the wide range of symptoms reported as occurring premenstrually. Interestingly, research has shown that prostaglandins have a role to play in the etiology of dysmenorrhea (Budoff, 1983). Recently, hypotheses centered on the prostaglandins have also been advanced to explain the pathogenesis of premenstrual symptoms (Budoff, 1983; Jacubowicz, Godard, & Dewhurst, 1984). In one hypothesis, it is proposed that there is a prostaglandin excess. There is some evidence which suggests that the prostaglandin synthetase inhibitor, mefanamic acid, serves to reduce premenstrual symptoms (Jacubowicz, Godard, & Dewhurst, 1984). Another hypothesis, however, is based on the premise that there is a prostaglandin deficiency. Enhancement of prostaglandin production has been attempted through the use of oil of the evening primrose (Horrobin, 1983). While seemingly

at variance with each other, the two prostaglandin hypotheses involve two different prostaglandins. Evidence from well-controlled, double-blind studies is still needed for confirmation of the prostaglandin hypotheses (O'Brien, 1985).

Endogenous opiates. It will be recalled, from the information on the menstrual cycle included at the beginning of this chapter, that there is a change in dopamine and in opiate tone throughout the normal cycle (Quigley, Judd, Gilliland, & Yen, 1979; Quigley & Yen, 1980). This information has been used in the formulation of hypotheses to explain premenstrual problems (Halbreich & Endicott, 1981; Reid, 1985; Reid & Yen, 1981). Since the endogenous opiates have been implicated in the physiology of pain, behaviour, and mood (O'Brien, 1985) and vary across the menstrual cycle, their activity could well account for premenstrual change. Reid and Yen (1981) propose an as yet unproven hypothesis involving endogenous opiates to account for the many and varied symptoms. Interestingly, however, lowered luteal phase levels of peripheral beta-endorphin (an endogenous opiate) were found in women complaining of premenstrual problems (Chuong, Coulam, Kao, Bergstralh, & Go, 1986)

Renin-angiotensin-aldosterone. It has been hypothesized that premenstrual mood disturbance and symptoms such as weight gain and fluid retention might be related to activation of the renin- angiotensin-aldosterone system (Janowsky, Berens, & Davis, 1973). This system, which is involved in the regulation of water and sodium in the body, is

differentially affected by the water and sodium retaining properties of estrogen and the natriuretic influence of progesterone (O'Brien, 1985). Owing to the proposed involvement of a resulting excess of aldosterone in the pathogenesis of premenstrual symptoms, diuretics have been used in treatment. While some success has been reported for spironolactone, a sodium wasting diuretic, in treatment (O'Brien, Craven, Selby, & Symonds, 1979), evidence relating to the renin- angiotensin-aldosterone hypothesis is contradictory (Reid, 1985).

Hypoglycemia. Some of the symptoms which are reported as occurring premenstrually resemble those characteristically found where there is hypoglycemia (Reid, 1985). Such symptoms are fatigue, hunger, nervousness, and vague gastrointestinal complaints. Changes in glucose tolerance across the menstrual cycle are compatible with the Reid and Yen (1981) endogenous opiate theory. Abraham (1980) also used hypoglycemia as a factor in his hypothesis about a premenstrual syndrome centering on craving for carbohydrate (PMT-C). As Reid comments, however, it is unlikely that hypoglycemia alone could account for premenstrual symptoms. In a recent study, Reid, Greenaway-Coates, and Hahn (1986) found no differences in glucose tolerance across the menstrual cycle for either normal or women with "alleged premenstrual hypoglycemic attacks". They comment that previous studies indicating that changes in glucose tolerance occur across the menstrual cycle have not taken factors such as cyclic difference in eating habits.

Vitamin deficiency. Premenstrual symptoms have been linked separately to proposed deficiencies in Vitamin A (Argonz & Abinzano, 1950), Vitamin E (London, Sundaram, Murphy, & Goldstein, 1983), and Vitamin B6 (Abraham, 1980, 1983). It has been suggested that Vitamin A can rectify an aberration in estrogen metabolism. The involvement of Vitamin E is proposed because of its effect on prostaglandin synthesis. In their review of the literature, Reid and Yen (1981) conclude that there is no sound evidence available to support a Vitamin A deficiency hypothesis. Vitamin E therapy has been found effective only in reducing painful breast symptoms (London, Sundaram, Murphy, & Goldstein, 1983).

The rationale for a Vitamin B6 (pyridoxine) deficiency relates to its proposed effect on tryptophan metabolism which, in turn, affects the biosynthesis of serotonin (Chakmakjian, 1983). Tryptophan is a serotonin precursor. A deficiency of pyridoxine has been linked to depression in contraceptive pill users as well as to that in women with premenstrual symptoms (Green, 1982; Winston, 1973). There are some suggestions that pyridoxine reduces premenstrual symptom reporting (Kerr, 1977; Goei & Abraham, 1983). However, Reid (1985), from a review of the literature, concludes that there is no substantial evidence to support the B6 hypothesis.

Summary

In this chapter, information about the menstrual cycle was provided to explain the context of the study. Biological factors affecting subject selection were also described as were the somatic symptoms about which women complain. From the brief review of the literature concerning biological explanations of premenstrual symptoms, it can be seen that there is no simple pathophysiological mechanism to account for them. However, some as yet unexplained relationship to the activity of the ovarian hormones is likely to exist (Bancroft & Backstrom, 1985). Chief reasons for a link with these hormones are that symptoms do not appear before puberty and disappear during pregnancy, hypogonadotrophic amenorrhea, and on surgically induced or natural menopause (Reid, 1985). One of the major problems which has beset research into premenstrual changes is the diversity of the women who complain, many of whom may have on-going psychological problems (Haskett & Abplanalp, 1983). If any definitive results are to be obtained from biological studies, further information about the women who complain is needed (Abplanalp, 1983). The provision of this type of information is an important goal of the present study.

Although biological factors may be of considerable importance in the genesis of premenstrual complaint, psychological and environmental factors may well also have a role to play. In the following chapter, the literature concerning premenstrual symptom reporting and its assessment is reviewed from the psychological perspective.

CHAPTER 3

REVIEW OF THE LITERATURE: II

Psychological Perspective

Taboos, secrecy, and superstition have surrounded the topic of menstruation in most societies from ancient times to the present day (Abraham et al., 1985). It is not surprising that primitive peoples regarded the unexplained, recurrent, menstrual flow with trepidation, because bleeding generally accompanies trauma. In classical and also in medieval times, it was believed that a woman during menstruation could cause flowers to die and bees to flee (Cobe, 1974). As Abraham and colleagues point out, the common view of the menstruating woman within the Judeo-Christian religions was, for centuries, that she is unclean and profane (Crawford, 1981).

A book dealing with menstruation written for a popular audience, in the middle of the past decade, was considered by most potential publishers to be "disgusting" (Toth, Delaney, & Lupton, 1981, p. 105). Even in present day, North American society, where blatant advertising of menstrual hygiene products occurs in the media, menstruation is not usually a topic which is openly discussed. Negative attitudes towards menstruation can still be found among both men and women (Golub, 1981). When premenstrual symptom-reporting is viewed from a psychological perspective, prevailing attitudes towards menstruation, within the cultural context, are of considerable importance. A major psychological explanation of premenstrual symptom reporting, which is

discussed later in this chapter, has its basis in attitudes towards menstruation (Koeske & Koeske, 1975). The power of psychological factors in relation to premenstrual symptom reporting is clearly illustrated by the results of studies undertaken in this area.

While the focus of the previous chapter was on the biological perspective, the present chapter is centered on the aspects of premenstrual symptom reporting which are relevant to the study from the psychological perspective. This chapter begins with a description of the psychological problems about which women complain premenstrually. Patterns of symptom reporting across the menstrual cycle and related factors are discussed. Selected psychological explanations which have been proposed to account for premenstrual symptoms are reviewed. The relationship between psychiatric illness and premenstrual symptom reporting is also discussed. Furthermore, an outline of psychosocial factors involved in subject selection is provided.

Premenstrual Psychological Problems

A comprehensive description of the premenstrual, psychological problems about which women complain is necessary for understanding of this study. Numerous, diverse symptoms have been reported in the literature. For example, Budoff (1983) lists "irritability, short-temperedness, lethargy and fatigue, loss of concentration, clumsiness, depression and anxiety, sleep disorders, crying spells and sadness, hostility and aggression, impatience, suicidal tendencies, tension, and a change in libido" (p. 470). To this list can be added the mood swings,

alcohol excesses, psychosis, nymphomania, and phobias described by Dalton (1984). Rubinow and Roy-Byrne (1984) list further cognitive, behavioral, and affective symptoms.

Psychological problems as severe as the premenstrual psychosis, nymphomania, and phobias described by Dalton (1984) are experienced only by a small minority of premenstrual complainers (Dennerstein, Spencer-Gardner, & Burrows, 1984). However, severe depression, uncontrollable irritability, and extreme hostility are common emotions reported by women who seek help for thejr premenstrual psychological problems (Abplanalp, 1983). Anxiety is reported by Abraham (1980) as the most commonly occurring emotion while depression has been found most frequently by Halbreich and Endicott (1982). In a recent study, Freeman, Sondheimer, Weinbaum, and Rickels (1985) found the dimensions of depression, anxiety, and hostility to be predominant. Interestingly, Steiner, Haskett, and Carroll (1980) view any anxiety and depression to be secondary to unexplained dysphoria and irritability. However, there is general consensus in the literature that anxiety and depression are commonly found in premenstrual complaint.

Women who experience severe premenstrual psychological problems often report cognitive changes such as loss of concentration (Budoff, 1983). According to Rubinow and Roy-Byrne (1984), commonly reported behavioral problems involve poor impulse control, decreased motivation, decreased efficiency, and social isolation. Despite some dispute, there is research evidence supporting the contention that

changes in affect may actually occur premenstrually even in non-complaining women (Awaritefe, Awaritefe, Diejomaoh, & Ebie, 1980; Golub, 1976; Slade & Jenner, 1979). Information concerning the cognitive and behavioral dimensions is somewhat conflicting, with impairment unlikely to be found in non-complaining women (Sommer, 1985). Consequently, the most useful information at present is likely to emerge from further, in-depth study of the affective dimension.

In the investigation, information concerning a broad range of premenstrual psychological problems was collected using the Premenstrual Assessment Form (PAF) designed by Halbreich, Endicott, Schacht, and Nee (1982). A copy of this assessment device is included in the Appendix. However, the main focus was on the intermenstrual affective states and personality traits of women who complain. Information concerning their psychological functioning was collected through the administration of specialized instruments designed to measure relevant mood states and personality characteristics. These instruments are described in detail in Chapter 4. Particular attention was paid to the dimensions of depression and anxiety because they are commonly reported as premenstrual problems. In the intermenstrual phase women who complain of premenstrual, psychological problems and who have no psychiatric history were expected to be no different from non-complainers in their responses to the tests.

Patterns of Premenstrual Symptom Reporting and their Assessment

When the pattern of premenstrual symptoms becomes the focus of interest, there is a tendency for clinicians and researchers to try to delineate more than one pattern or syndrome (Abraham, 1980; Halbreich & Endicott, 1982; Moos, 1968, 1969; Rubinow, Roy-Byrne, Hoban, Gold, & Post, 1984). Although the focus of the present study was not on premenstrual syndrome or syndromes per se, some approach to the assessment of level of premenstrual complaint had to be taken. Therefore, available approaches were reviewed.

Moos (1969) who developed the 47-item Menstrual Distress Questionnaire (MDQ), reports eight symptom groups emerged on factor analysis of the items on his questionnaire. He suggests that these symptom clusters represent different syndromes. Six of the clusters refer to somatic symptoms while two refer to psychological aspects of the symptomatology. The psychological clusters he identifies are negative affect and problems with concentration. While Moos used some psychometric principles in the development of his questionnaire, the norming population included a large proportion of women who were either pregnant or on the birth control pill. A further problem with his questionnaire is that it assesses menstrual as well as premenstrual symptoms. It was also not suitable for use in the present study owing to its emphasis on somatic symptoms.

Using clinical judgement and information derived from the literature, Abraham (1980) developed a 19-item menstrual symptom

questionnaire. He arbitrarily divides the premenstrual symptoms into four groups labelled PMT-A, PMT-H, PMT-C, and PMT-D. It appears that PMT-A stands for Premenstrual Tension--Anxiety, with other syndromes referring to Hyper-hydration, Carbohydrate, and Depression. PMT-A includes nervous tension, mood swings, irritability, and anxiety. Weight gain, swelling of extremities, breast tenderness, and abdominal bloating constitute PMT-H. The symptoms of PMT-C are headache, craving for sweets, increased appetite, heart pounding, fatigue, and dizziness or faintness. PMT-D refers to a symptom cluster of depression, forgetfulness, crying, confusion, and insomnia. A major problem with Abraham's questionnaire is that it clusters symptoms together on the protocol itself. This practice can engender a response set in subjects.

Halbreich, Endicott, Schacht, and Nee (1982), who developed the 95-item Premenstrual Assessment Form (PAF) using the psychiatric Research Diagnostic Criteria (Spitzer, Endicott, & Robbins, 1978), report that 18 syndromes emerge from their clinical and experimental research. Among these syndromes are PAF Major and Minor Depressive Syndrome, PAF Anxiety Syndrome, and PAF Water Retention Syndrome (Halbreich & Endicott, 1982). The premenstrual syndromes described by these researchers primarily refer to mood and behavioral changes. For the purposes of the present study, this focus on the psychological aspect of premenstrual changes was considered to be useful.

Research involving visual analogue scales upon which women record levels of symptom change across the menstrual cycle also

indicates that there may be more than one symptom pattern (Rubinow, Roy-Byrne, Gold, & Post, 1984). Such scales are useful only for prospective recording of symptoms and are gaining popularity for that purpose (Caspar & Powell, 1986). Use of such scales was not compatible with the present research design.

While some researchers have identified more than one symptom pattern, others have concentrated on the delineation of a single syndrome (Steiner, Haskett, & Carroll, 1980). In a review of the literature, Rubinow and Roy-Byrne (1984) comment that focussing on the delineation of one syndrome may be too limiting for a phenomenon as complex as that under discussion. They also offer the valid criticism that Moos' (1968, 1969) conceptualization is impeded by his inclusion of menopausal symptoms. Abraham's (1980) approach is severely criticized owing to its lack of an empirical basis. The delineation of symptom patterns on the basis of visual analogue scales is in the early stages of development. Consequently, Rubinow and Roy-Byrne (1984) concluded that the approach taken . . the Premenstrual Assessment Form (PAF) developed by Halbreich, Endicott, Schacht, and Nee (1982) was the most comprehensive and valid available at that time. Therefore, the PAF was used to assess level of premenstrual complaint in the present study.

Change in Symptom-Reporting across the Menstrual Cycle

There is agreement in the literature that premenstrual syndrome (or syndromes) is characterized by a change in the reporting of symptoms

across the menstrual cycle (Rubinow & Roy-Byrne, 1984). Dalton (1984) insists that there must be at least one symptom-free week each cycle to meet the description of premenstrual syndrome. Her definition of the syndrome is "the recurrence of symptoms in the premenstruum with absence in the postmenstruum" (p. 3). Other clinicians and researchers are satisfied with a significant reduction in symptoms intermenstrually (Halbreich, Endicott, Schacht, & Nee, 1982; Rubinow, R., Byrne, Hoban, Gold, & Post, 1984). Some research evidence suggests that there are premenstrual complainers who are symptom-free intermenstrually (Abplanalp & Haskett, 1983). Other research studies have linked premenstrual complaint with mild psychiatric illness (Clare, 1983) and with personality disturbance (Taylor, 1979). The absence or relative absence of symptoms intermenstrually was pivotal in the present study. It was expected that a group of women who complain of premenstrual symptoms and have no history of psychiatric illness would be relatively symptom-free intermenstrually. Consequently, they should be no different in their responses on psychological assessment of mood and certain personality traits from a group of non-complainers when tested intermenstrually. It was also expected that they would be no different in response from a non-treatment group of women.

Cyclic Recurrence of Symptoms

There is agreement in the literature that premenstrual syndrome is characterized by symptoms which recur from cycle to cycle (Abplanalp, 1983). Some clinicians and researchers consider that symptoms should be reported for at least six cycles before premenstrual syndrome can be said to exist (Dalton, 1984). For others the recurrence of symptoms over two consecutive cycles is sufficient (Blume, 1983). Although the present study was not directly aimed at premenstrual syndrome, reporting of symptoms over time is viewed as being worthy of some consideration. By using the Premenstrual Assessment Form (PAF) (Halbreich, Endicott, Schacht & Nee, 1982) which requires women to retrospectively assess their symptoms over the preceding three months, this aspect can be taken into account.

Retrospective and Prospective Assessment

At a workshop held in 1983 under the auspices of the National Institutes of Mental Health (NIMH) in Rockville, Maryland, a group of prominent researchers in the area of premenstrual syndrome agreed upon a working definition for premenstrual syndrome or syndromes (Blume, 1983). They defined the syndromes as "marked change in the reporting of the intensity of symptoms measured (daily) from cycle days 5 to 10, compared to the intensity within the 6-day interval prior to menses, for at least 2 consecutive cycles" (Blume, 1983, p. 2866). The focus of this definition is on the comparative severity of symptoms across the cycle and the recurrence of symptoms cyclically. The definition also

virtually mandates prospective recording of symptoms rather than the use of retrospective questionnaires.

In the investigation, prospective recording of symptoms was not considered necessary since premenstrual syndrome was not the target for study. Prospective recording is advocated by investigators into premenstrual phenomena because, as noted in Chapter 1, retrospective reports do not always correspond to results obtained when daily tracking of symptoms is undertaken (May, 1976). However, such recording may in itself constitute a behavioral intervention and influence symptom reporting (Bancroft & Backstrom, 1985). In addition, the authors of the PAF have found similar complaints on retrospective and prospective recording by some subjects (Halbreich, Endicott, Schacht, & Nee, 1982). In a recent study, Magos, Brincat, and Studd (1986) found retrospective reports confirmed by prospective assessment in subjects with a convincing history of premenstrual complaint. Consequently, even when premenstrual syndrome is the target for study, it is by no means decided that prospective recording is always prudent or necessary. For the purposes of the study, the PAF, which focusses on change in symptom severity across the cycle and on recurrence over three cycles, was considered to be adequate. In the study, the PAF was used to establish the level of premenstrual psychological symptoms. The methodology involved in this process is described in Chapter 4

Psychological Explanations

Biological factors may ultimately be found to be of considerable importance in the genesis of premenstrual complaint. However, as can be seen from the information included in the last chapter, substantial evidence supporting any one biological theory is lacking. In the absence of a clear biological etiology, it is not surprising that psychological explanations have been sought. Indeed, a commonsense psychological explanation with which women with premenstrual complaint have been consistently confronted by some professionals and lay people alike is that "it is all in your head, dear." This explanation has caused many women much psychological pain and frustration. During the time since Frank (1931) first described premenstrual syndrome, a number of other primarily psychological explanations have been proposed to account for premenstrual symptom reporting.

Menarcheal experience. Some explanations of premenstrual symptoms implicate poor mother-daughter communication over the onset of menarche (Paulson, 1961; Shainess, 1961). While the results of Paulson's study served to confirm this explanation, other research has failed to provide support (Hart, 1981; Lamb, Ulett, Masters, & Robinson, 1953; Osmun, Steiner, & Haskett, 1983; Woods, Dery, & Most, 1982a). The possibility that a traumatic menarcheal experience might be involved in some cases where there is premenstrual symptomatology cannot be ruled out. However, this explanation has found little support in the literature as a comprehensive theory to account for premenstrual change.

Acceptance of the feminine role. Premenstrual complaint has been explained in terms of the repudiation of femininity and of non-acceptance of the feminine role (Berry & Maguire, 1972; Shainess, 1961). This explanation is closely associated with the poor menarchial experience theory. The implication is that the mothers of the premenstrual complainers poorly prepared them for their role as women. These mothers are blamed not only for failing to prepare their daughters for the onset of menstruation, but also for omitting to adequately prepare them for womanhood in general. Interestingly, Gough (1975) found premenstrual complainers to be high in terms of femininity scoring on psychological assessment. As Clare (1983) points out, this finding appears to contradict the idea of rejection of femininity. While explanations involving acceptance or rejection of the feminine role cannot be ruled out at present, they also have little support in the literature.

Socio-cultural stereotypes. Another approach to the etiology of premenstrual symptomatology involves the idea that women do not actually experience any more problems premenstrually than at other times but merely believe that they do (Brooks-Gunn & Ruble, 1980; Hart, 1981; Koeske, 1980; Koeske & Koeske, 1975; Parlee, 1973, 1974; Ruble, 1977; Ruble & Brooks-Gunn, 1979). Proponents of this approach, who are mostly women themselves, deny the existence a premenstrual syndrome and believe it is the result of stereotypic, socially learned beliefs shared by men and women alike about menstruation being a

negative experience. According to this explanation, negative feelings and moods are attributed to biological processes like menstruation while positive moods are attributed to environmental causes (Koeske & Koeske, 1975). Linked to this explanation is the suggestion that changes in autonomic system arousal, which may occur premenstrually, are labelled as negative feelings such as anxiety because of expectations (Koeske, 1980).

Evidence to support the socio-cultural approach is provided by studies indicating that such stereotypic beliefs do exist (Koeske & Koeske, 1975; Parlee, 1974; Ruble, 1977). In her study, Ruble convinced some female, non-complaining college students that they were premenstrual and others that they were not. She found that the women who thought they were premenstrual reported more symptoms than women who thought they were not. This study is widely quoted as providing support for the contention that premenstrual syndrome is the result of cultural stereotyping. Other evidence stems from studies which indicate that women report more symptoms in retrospect than actually occur (McCance, Luff, & Widdowson, 1937; May, 1976) and sometimes retrospectively attribute negative moods to the premenstruum which actually occurred at other times (Rubinow, Roy-Byrne, Hoban, Gold, & Post, 1984). In addition, the findings from some studies show that, on prospective recording, life events have more impact on moods than stage in the menstrual cycle (Siegel, Johnson, & Sarason, 1979; Wilcoxson, Schroder, & Sherif, 1976). Much of the research which supports a

psychosocial position, however, has young, college students as subjects and studies involving older women with more severe premenstrual symptoms have yet to be undertaken (Abplanalp, Haskett, & Rose, 1980; Parlee, 1982).

As noted at the beginning of this chapter, the socio-cultural explanation has served to provide evidence of the power of psychological factors in the area of premenstrual symptom reporting. The explanation has a serious limitation in that it has not yet been shown to explicate severe premenstrual symptoms. It also carries a similar message to that of the "lay" psychological explanation so damaging to the emotional health of women with severe problems. This message is basically that their problems are all the result of their expectations and imaginings.

Personality characteristics. Premenstrual complaint has been explained as being the function of personality disturbance (Foresti et al., 1981; Gruba & Rohrbaugh, 1975; Hain, Linton, Eber, & Chapman, 1970). Extensive descriptions of the supposed personality characteristics of women who complain are to be found in the literature.

According to Gough (1975), women who report premenstrual symptomatology tend to be shy, self-doubting, and eager to please. From the findings of his study, it would appear that they also tend to behave in self-defeating ways. Recently, Keye, Hammond, and Strong (1986) found women attending a premenstrual syndrome clinic to be passive, submissive, and unassertive on personality assessment. They

note that many of the women tended to suppress anger and then to explode in episodes of greater anger or violence. Taylor (1979) found the women in his study who complained of high levels of premenstrual symptoms to be emotionally unstable, suspicious, unpretentious, tense, and frustrated. In 1967, Levitt and Lubin concluded that menstrual complaints are related to "an unwholesome menstrual attitude, to neurotic and paranoid tendencies, and to a lack of understanding of motivations and feelings" (p. 280). Premenstrual complainers have frequently been identified as neurotic (Clare, 1983; Coppen, 1965; [illegible]ige, 1971; Rees, 1953a, 1953b; Watts, Dennerstein, & Horne, 1980).

According to Foresti and colleagues (1981), premenstrual complaint is associated with pathological personality characteristics including anxiety and depression. As noted in Chapter 1, up to 100 per cent of reproductive age women have been reported as experiencing premenstrual changes (Hallman, 1986). It is hardly surprising, when such information is juxtaposed, that personality studies of premenstrual women have been criticized for their apparent stigmatization of women (Parlee, 1973; Rossi, 1980; Sommer, 1980). Further clarification of the issue concerning personality characteristics is warranted.

At present, there is no consensus in the literature concerning the personality characteristics of women who complain of premenstrual problems. Studies involving the assessment of anxiety as a state and as a trait, in women who do not complain, have shown increases in state anxiety but not in trait anxiety premenstrually (Awaritefe, A., Awaritefe, M.,

Diejomaoh, & Ebie, 1980; Golub, 1976). In the study, the dimensions of anxiety and depression were studied intermenstrually in both complaining and non-complaining women as well as in psychiatric patients. Information concerning some relevant personality characteristics was expected from the study.

Psychiatric Illness and Premenstrual Complaint

As noted in Chapter 1, an apparent connection between premenstrual complaint and psychiatric illness has been observed (Clare, 1983). A possible relationship has been documented in the literature across several decades and in differing countries (Rees, 1953a, 1953b; Coppen, 1965; Coppen & Kessel, 1963; Endicott, Nee, Cohen, & Halbreich, 1986; Kashiwagi, McClure, & Wetzel, 1976; MacKenzie, Wilcox, & Baron, 1986; Stout, Steege, Blazer, & George, 1986). Although there has been a considerable body of research aimed at delineating a connection between psychiatric disorders and premenstrual symptoms, its precise nature is unknown as yet (Clare, 1985).

The results of Clare's (1983) extensive study of premenstrual complaint indicate that there may be an association with mild psychiatric illness of a neurotic type. Other British researchers have found high levels of premenstrual complaint in women diagnosed as being neurotic (Rees, 1953a, 1953b; Coppen, 1965; Coppen & Kessel, 1963). Some clinicians and researchers view a pattern of depressive premenstrual symptoms as being a mild or subclinical form of affective disorder (Endicott, Halbreich, Schacht, & Nee, 1981; Halbreich, Endicott, & Nee,

1983; Wetzel, Reich, McClure, & Wald, 1975). As Goldberg (1972) points out, the term "neurotic" is surrounded by controversy and is used very loosely in the literature at times. Consequently, these researchers may be describing the same phenomenon but using different terminology.

In a recent study, a significantly higher percentage of depressive psychopathology was found in women who believed they had perimenstrual symptomatology than occurs in the community at large (MacKenzie, Wilcox, & Barron, 1986). There is debate in the literature as to whether premenstrual symptoms may be linked to endogenous as opposed to reactive depression (Haskett, Steiner, & Carroll, 1984). Similarities have been suggested between bipolar illness and premenstrual syndrome (Price & DiMarzio, 1986; Rubinow et al., 1986). In addition, the comparison has been made between premenstrual complaint and seasonal affective disorder (Parry, Rosenthal, & Wehr, 1985). There is, however, no definitive research evidence connecting premenstrual complaint directly with such disorders.

In a follow-up study of female college students with premenstrual complaint, Wetzel, Reich McClure, and Wald (1975) found that the women frequently developed affective disorders at a later date. Women with known depressive psychiatric illness have also been shown to report higher levels of premenstrual symptomatology (Halbreich, Endicott, & Nee, 1983). However, among women with a history of psychiatric illness, reported premenstrual changes are confirmed on prospective recording in only approximately half of those complaining

(DeJong et al., 1985). Therefore, the relationship between premenstrual complaint and emotional illness, within the psychiatric population itself, is far from clear. Furthermore, the study of premenstrual symptom reporting within identified psychiatric populations having differing disorders is complex and has produced discrepant results (Roy-Byrne et al., 1986). Premenstrual complaint within the psychiatric population is not, however, the focus of the present study. Nevertheless, the question of whether all premenstrual complainers suffer from some common psychiatric problem has yet to be decided.

If women who complain of premenstrual changes and are referred to gynecologic practice were shown to be dissimilar to psychiatric patients with non-psychotic psychiatric illness on psychological assessment during the intermenstrual period, then some information pertinent to treatment will have been made available. Since there is a possible relationship between affective illness and premenstrual complaint, the psychiatric patients were those with diagnosed affective disorders. In the present study, differentiation of women with on-going psychiatric disorders from those without was undertaken using a battery of psychological tests. These tests are described in Chapter 4.

Psychosocial Factors

There is some suggestion that premenstrual complaint may be linked to environmental stress (Koeske, 1980; Sommer, 1980; Woods, 1985; Woods, Dery, & Most, 1982b). In the study, levels of stress in terms of family life events and changes were, therefore, monitored.

Although premenstrual complaint has not been linked with any particular social class, women in the professions report fewer changes than women in other groups (Halbreich & Endicott, 1985). Therefore, socio-economic status might influence results. Consequently, socio-economic status was estimated for each individual included in the investigation in order to rule out counter-hypotheses.

Defining Complainers and Non-Complainers

The final section of the literature review addresses the question of the nature of the women designated as premenstrual complainers and non-complainers. A more detailed description of subject selection processes is included in Chapter 4.

Instead of attempting to "diagnose" premenstrual syndrome, a complex task, a woman's assistance-seeking behavior was used as a criterion for inclusion in the investigation. As mentioned earlier, there are indications that women who seek gynecological attention are more likely to be mentally healthy, premenstrual complainers than those attending psychiatric clinics (Freeman, Sondheimer, Weinbaum, & Rickels, 1985). In the study, the complainers were obtained from the practice of a gynecologist. They were complaining mainly of psychological problems and had no history of psychiatric illness.

It is by no means clear that women who seek help experience more severe levels of premenstrual change than those women who do not complain. Consequently, current levels of symptom reporting by complainers and non-complainers were compared in the study. It was

expected that women who seek treatment for premenstrual, psychological problems would report greater levels of change than both women who do not complain and psychiatric patients with diagnosed affective disorder.

Hypotheses

Several researchable questions are evident in the preceding review. Stated formally as the hypotheses of the study, these questions are:

Hypothesis I. Women categorized as complainers and treatment seekers regarding premenstrual psychological problems will report greater levels of premenstrual change than both psychiatric patients and women who are not categorized as complainers and treatment seekers.

Hypothesis II. Women categorized as complainers and treatment seekers regarding premenstrual psychological problems will be no different in levels of psychological symptoms during the intermenstrual phase of their menstrual cycles from women who are not categorized as complainers and treatment seekers.

Hypothesis III. Psychiatric patients with diagnosed non-psychotic depressive illness will exhibit more psychological disturbance during the intermenstrual phase of their menstrual cycles than women who are categorized complainers and treatment seekers regarding premenstrual psychological problems and who are also in the intermenstrual phase of their menstrual cycles

Hypothesis IV. Women categorized as complainers and treatment seekers regarding premenstrual psychological problems will be no different in levels of psychological symptoms during the intermenstrual phase of their menstrual cycles from a group of women taken from the community at large.

CHAPTER 4

Method and Procedures

The questions to be answered in the present investigation center on the intermenstrual, psychological characteristics of women who complain of premenstrual symptomatology. In designing the study, it was decided that the responses on psychological assessment of four groups of individuals would be compared. The composition of these groups is described in the next section of this chapter.

It will be recalled that age, parity, hormonal medication, and external stressors may influence premenstrual symptom reporting. These factors have been taken into account in the study. The Family Inventory of Life Events (McCubbin, Patterson, & Wilson, 1981) was used to assess external stressors. Information about age, parity, and contraceptive pill consumption was collected by means of a Subject Data Form (See Appendix). This form was also used to collect information about menstrual cycle phase, where appropriate, and about general health. To establish a socio-economic class estimate, the Blishen-Occupational Class Index was used. This information ensured that socio-economic status of group members was similar across the treatment groups.

From the review of the literature, it will be remembered that there appears to be some link between psychiatric illness and premenstrual complaint. In the investigation, the information concerning the general health status of subjects was obtained through the use of the Subject

Data Form. Through this questionnaire, history of psychiatric illness was indirectly identified. Information obtained from subjects with a history of psychiatric illness, other than these patients in the psychiatric group, was omitted from data analysis. Assessment of mild psychiatric illness of the type which occurs in the general population was undertaken using the General Health Questionnaire (Goldberg, 1972, 1978). A copy of this questionnaire is included in the Appendix.

The psychological symptoms associated with the premenstrual phase of the menstrual cycle were described in the review of the literature. The Premenstrual Assessment Form (Halbreich, Endicott, Schacht, & Nee, 1982) was used to provide information about the symptoms reported by the treatment seekers and non-treatment seekers. Intermenstrual mood states were assessed by means of the Profile of Mood States (McNair, Lorr, & Droppleman, 1971). It will be recalled from the review of the literature that premenstrual depression and anxiety seem to be the most commonly occurring of problems. Consequently, in the study, intermenstrual level of state anxiety was assessed more rigorously using the State-Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970). Trait anxiety, a personality variable, was also assessed using this test. Other detailed information concerning depression and anxiety was obtained using the IPAT Anxiety Scale Questionnaire (Cattell & Scheier, 1963) and the IPAT Depression Scale (Krug & Laughlin, 1976). Information concerning the influence of both

personality traits and mood states is important in resolving the questions surrounding premenstrual complaint.

More detailed discussion of the individual instruments administered is included in subsequent sections of this chapter. The results of the tests administered were subjected to appropriate statistical analysis, which analysis is also more fully discussed, herein.

The Subjects

The subjects of the investigation were three groups of 35 reproductive-age women and one unselected, non-treatment group also consisting of 35 women. The subjects in the first three groups were all in the intermenstrual phase of their menstrual cycles when they completed test protocols. None of the subjects in these groups were taking hormonal medication in the form of the oral contraceptive pill. In addition, women exhibiting menopausal symptoms such as hot flashes were also excluded from these groups.

All subjects included in the study were volunteers. Each subject signed a release form which was approved by the relevant research ethics committees involved. A copy of the release form is included in the Appendix. Those subjects who were also patients had their right to opt out of the study without affecting treatment carefully explained to them.

Group I (Premenstrual Complainers). The 35 subjects included in Group I were women between the ages of 20 and 45 who were seeking treatment for premenstrual symptoms. Their symptoms were primarily psychological in nature but also included a physical component. These

subjects were obtained from the clinical practice of a gynecologist who is also a reproductive endocrinologist. They were new patients seeking treatment for symptoms that disrupted the pattern of their everyday lives. Women with a past history of psychiatric illness were excluded from the group as were those whose current symptoms, as determined by discussion, appeared to extend beyond the premenstrual phase. Subjects included in this group were aware of its nature and completed all test protocols.

Group II (Non-Complainers). Group II consisted of 35 women between the ages of 20 and 45 years of age who were not seeking treatment for premenstrual psychological symptoms. They described themselves as being non-complainers who experienced minimal premenstrual changes. Volunteers for this group were obtained from community groups, college classes, business offices, and through personal contact. Unlike the women in Group IV, the subjects in this group were aware of the nature of the study and completed all test protocols.

Group III (Psychiatric). The thirty-five women in Group III were psychiatric patients between the ages of 20 and 45 years of age. These women were receiving treatment for a non-psychotic illness diagnosed as an affective disorder by their psychiatrists. All of the women, except for three, were hospitalized at the time of assessment. Those women who were not hospitalized were judged by the psychiatrists concerned to be comparable in terms of depression and other relevant characteristics

to the other patients in the group. Potential subjects, who were from two hospitals in the city where the study took place, were approached after agreement was obtained from their physicians. The subjects in this group were aware of the nature of the study and completed all test protocols.

Group IV ("Non-Treatment" Community Sample). Subjects for this group were thirty-five women from whom no menstrually related information was obtained. There were no restrictions as to age. However, all subjects were under 45 years of age at the time of testing. The women did not know the precise nature of the study but were aware that there were implications for obstetrics and/or gynecology. Volunteers, who completed the study in group settings, were members of community organizations, students in higher education, and employees in offices and retail stores.

Instruments

The following instruments were used:

Subject Data Form (see Appendix)

Family Inventory of Life Events and Changes (McCubbin, Patterson, & Wilson, 1981)

Occupational Class Scale (Blishen, 1958; Blishen & McRoberts, 1982)

General Health Questionnaire (Goldberg, 1972, 1978)

Premenstrual Assessment Form (Halbreich, Endicott, Schacht, & Nee, 1982)

Profile of Mood States (McNair, Lorr, & Droppleman, 1971)

State-Trait Anxiety Inventory (Speilberger, Gorsuch, & Lushene, 1970)

IPAT Anxiety Scale Questionnaire (Cattell & Scheier, 1963)

IPAT Depression Scale (Krug & Laughlin, 1976)

These instruments are described in some detail in the following section of the study. They produced 17 separate scores for comparison on data analysis.

Subject Data Form (SDF). Subjects were asked to verbally respond to a brief, structured interview on initial contact. Information concerning age, sex, occupation, years of schooling, and parity was collected. The second section of the SDF was designed to collect a relevant menstrual history to supplement that obtained on the PAF. The major function of this history was to precisely determine cycle phase. Phase had to be determined prior to the testing for all subjects except those in the non-treatment group. Part three of the SDF was designed to collect information about relevant factors such as physical health and any lengthy hospitalizations. Each part of the SDF was on a separate sheet of paper. Only the relevant sheets were completed for each subject (see Appendix).

Family Inventory of Life Events and Changes. The Family Inventory of Life Events and Changes (FILE) was developed by McCubbin, Patterson, and Wilson (1981) as a measure of recent and past family life changes. There are 71 items which on factor analysis cluster into 9 subscales or groupings. These are: Intra-Family Strains, Marital Strains, Pregnancy Strains, Finance, Work-Family Strains, Illness, Losses,

Transitions, and Legal Strains. Scores are available for these subscales as well as for two total scales which are Total Recent and Total Past Family Life Changes. Scoring is carried out by means of a standard key. A Cronbach's Alpha of .72 for internal reliability is reported by the authors. In the present investigation, the two Total Family Life Change Scores were used.

Blishen Occupational Class Scale. Blishen (1958) constructed a scale of occupational class using information from the 1951 Canadian Census. This scale was revised by Blishen & McRoberts in 1982. Occupations were arranged according to average income and average years of schooling. Standard scores from these two measures were computed. The two standard scores were then combined and each occupation ranked according to the respective standard scores, with the resulting list of 343 occupations then divided into 7 classes. These class divisions were arbitrary but were found to have a rank correlation of .94 with employment prestige scales.

In the present investigation, the one combined, standard score for income and years of schooling, as described by Porter, Porter, and Blishen (1982), was used as an index of socio-economic status for the subjects. The score of the working partner was used when one member of a co-habiting dyad was employed and the respondent was not working outside of the home.

The General Health Questionnaire (GHQ). The General Health Questionnaire is a 60 item, British, self-administered screening test

designed to detect non-psychotic psychiatric disorders in general medical out-patients and subjects in community settings (Goldberg, 1972, 1978). It consists of 60 items which take 8-10 minutes to complete. The questionnaire is principally aimed at detecting those psychological problems which may affect a patient's presence in a medical clinic. It has been found useful in the investigation of premenstrual complaint (Clare, 1983). According to Goldberg (1978), the questionnaire is particularly effective in discriminating patients with mild problems. There are shorter versions of the test (GHQ-28, GHQ-30) whose effectiveness is limited outside of clinical settings.

In the Manual, Goldberg (1978) reports extensive information on the reliability and validity of the 60 item GHQ. Test-retest reliability co-efficients range from .51 to a high of .90. As Goldberg points out, the test is designed to assess a potentially highly variable quality in test subjects, and, consequently, in some populations test-retest reliability cannot be expected to be high. Internal consistency, measured by the split-half method, is high (.95). The author provides information about content, predictive, and concurrent validity. Content validity is strong and is manifest in good discriminant power between psychiatric and non-psychiatric patients. Information from therapy studies indicates that the test has predictive validity in terms of outcomes. Concurrent validity, as determined through comparison of results from standardized psychiatric research interviews, yields co-efficients in the range of .76 to .81. Thus, the GHQ has very satisfactory reliability and validity components.

From the 60-item version of the GHQ, one objective rating of mental health can be obtained and was used for purposes of the present investigation. That the test measures a general health factor has been confirmed by factor analytic studies. The test is easily hand-scored by weighting two of the four possible responses to each question with a score of 1. The other two responses have zero weight.

Since the test was designed in Britain some of the items have idioms unfamiliar to Canadian respondents. Consequently, these items were modified in the manner recommended in the Manual for North American use.

Premenstrual Assessment Form (PAF). The Premenstrual Assessment Form (PAF) was developed by Halbreich, Endicott, Schacht, and Nee (1982). It is an unpublished research instrument available on request from its authors. The questionnaire was designed to allow broad and detailed coverage of behavioral, psychological and physical changes experienced by women premenstrually. According to Rubinow and Roy-Byr[illegible]84), the PAF represents a vast improvement over other premenstrual assessment forms which generally include single items such as "depression" on a check-list devoid of statistical reliability and validity. The questionnaire is sensitive to both dimensions of change and to levels of severity of change The PAF, a self-report questionnaire which takes approximate[illegible]inutes to complete is comprised of three sections. The first section is designed to collect identification data and general information concerning menstrual history and topics such as

physical health. The second section of the questionnaire consists of 95 items descriptive of changes in mood, behavior, and physical condition experienced premenstrually. The examinee is asked to respond to these items not in absolute terms of severity but in terms of severity of change from normal, non-premenstrual functioning on a six point scale. A response of "1" means no change or relatively insignificant change. At the other end of the scale for each item, a response of "6" means extreme change so severe that persons who do not know the respondent well might notice. The third section of the questionnaire consists of a narrative written by the woman to describe her premenstrual changes. The last two sections of the questionnaire are retrospective and the time period upon which the respondent is asked to comment is limited to the last three premenstrual periods.

The PAF affords three non-competitive scoring systems. There are seven Bipolar Continua (including Increased-Decreased Energy), eighteen Unipolar Summary Scales (including Low Mood/Loss of Pleasure) and eighteen Typological Categories for syndromes of premenstrual change.

The items for the Unipolar Summary Scales were grouped on the basis of item intercorrelation and alpha co-efficients of internal consistency for various item sets (designed to measure differing dimensions of mood, behavior, and physical condition). The co-efficients range from .61 to .91. To obtain syndromal classifications, joint occurrence of specific types of change at specified levels of severity must

be in evidence. The Research Diagnostic Criteria (Spitzer, Endicott, & Robins, 1978) were used as guidelines for the development of the syndromal categories of change. The categories are not mutually exclusive.

The PAF can be hand-scored or computer-scored using a special program available from the PAF authors on request. In the present study, the questionnaire was hand-scored.

The information needed in the present investigation concerning premenstrual psychological change was available on 11 of the Unipolar Scales. These are Low Mood/Loss of Pleasure, "Endogenous" Depressive Features, Lability, "Atypical" Depressive Features, "Hysteroid" Features, Hostility/Anger, Anxiety, Impulsivity, "Organic" Mental Features, Fatigue, and Impaired Social Functioning. A total score across the these scales was calculated for each woman completing the questionnaire. Three knowledgeable and independent judges agreed that 11 scales were suitable for the proposed purpose.

Profile of Mood States. The Profile of Mood States (POMS) is a 65-item, mood adjective checklist which is comprised of one positive and five negative mood scales. Each item is scored between 0 (not at all) and 4 (extremely). Normative values for the POMS are available from studies of normal populations as well as from psychiatric out-patients. The test, developed by McNair, Lorr, and Droppleman (1971), is designed to assess how the examinee feels within a specific period of time. Consequently, the authors believe the POMS assesses mood

states rather than personality traits. In the present study, the TODAY form of the POMS was used.

The POMS is considered to be a rapid, economical method for identifying and assessing transient, fluctuating affective states and is a factor analytically derived inventory measuring six identifiable mood or affective states: Tension-Anxiety; Depression-Dejection; Anger-Hostility; Vigor-Activity; Fatigue-Inertia; and Confusion-Bewilderment. Most subjects can complete the POMS in 3-5 minutes. To obtain a score for each mood factor, the sum of the responses is calculated for the adjectives defining the factor. All items defined in each factor are keyed in the same direction except for "relaxed" in the Tension-Anxiety Scale and "efficient" in the Confusion Scale. Scoring is undertaken through the use of overlays or by computer scoring. A total Mood Disturbance Score (TMD) can be obtained from the POMS by summing scores across all six factors (weighting Vigor negatively). Internal consistency measures for all six mood scales are .90 or above. Test-retest reliability ranges from .65 for Vigor to .74 for Depression. McNair et al. (1971) consider the POMS to have not only factorial validity but also good predictive and construct validity. They report high concurrent validity estimates near .80. The POMS has been effectively used in research undertaken in the area of premenstrual complaint (Haskett & Abplanalp, 1983). In the present investigation, the scores from the 6 separate mood scales were utilized.

State-Trait Anxiety Inventory (STAI). The State-Trait Anxiety Inventory (STAI), developed by Spielberger, Gorsuch, and Lushene

(1970), consists of two separate self-report rating scales for measuring state and trait anxiety. State anxiety refers to "a transitory emotional state characterized by conscious feelings of tension and subjective awareness of heightened autonomic nervous system activity" (Golub, 1976, p. 5). Trait anxiety refers to "anxiety proneness, which is a relatively stable baseline, personality characteristic" (p. 5). The state scale (XI) is administered prior to the trait scale (X2). The examinee responds concerning how he or she feels at the time of testing on the state scale. He or she responds concerning how he or she generally feels on the trait scale. Each scale consists of 20 items. The whole test takes between 5 and 10 minutes to complete. The examiner always refers to the total scale as "The Self-Evaluation Questionnaire."

The range of possible scores for Form X of the STAI varies from 20, the minimum, to 80, the maximum, on both the state and trait scales. Items are rated by subjects on a four-point scale. The trait scale has 13 items scored directly and 7 which are reversed. The state scale has 10 items scored directly and 10 reversed. Scoring is undertaken using templates (or scoring keys). The readability level for the test is between the fifth and sixth grades.

Test-retest reliability for the trait scale ranges between .73 to .86. Internal reliability estimates using the Kuder-Richardson Formula 20 ranged from .83 to .92 for the state scale. Similar high evaluations of internal consistency were obtained for the trait scale. Extensive information concerning the validity of the STAI is reported in the Manual.

Concurrent validity for the trait scale is in the region of .75. The test has been used successfully on studies of premenstrual anxiety (Awaritefe, Awaritefe, Diejomaoh, & Ebie, 1980; Golub, 1976; Golub & Harrington, 1981). In the present investigation, this test was used to provide two measures of anxiety (trait and state).

IPAT Anxiety Scale Questionnaire (or Self Analysis Form). The IPAT Anxiety Scale Questionnaire (Cattell & Scheier, 1963) is a test produced by the Institute for Personality and Ability Testing (IPAT). The Questionnaire was developed as a means of obtaining clinical anxiety information rapidly, objectively, and in a standardized manner. It is described by the authors as a brief, non-stressful, clinically valid questionnaire for measuring anxiety which may be used with all except the lowest educational levels and which is appropriate for teenage through adult testing. The scale is designed to measure free-floating manifest anxiety which is either situationally determined or free from the immediate situation. The test can be self-administered and takes about 5 to 10 minutes to complete the 40 questions to which there are 3 alternate responses. The questions are distributed among five anxiety measuring factors or components. These factors are Defective Integration (Lack of Self-Sentiment), Ego Weakness (Lack of Ego Strength), Suspiciousness or Paranoid Insecurity, Guilt Proneness, and Frustrative Tension or Id Pressure. Items are divided into two groups. One group refers to manifest anxiety while the other refers to more covert anxiety. The total score on the entire 40 items which comprise the scale provides the most

reliable estimate of anxiety. The test is easily scored in approximately one half minute using a standard scoring key.

Test-retest reliabilities are given as .93 for a one week interval and .87 for two weeks. Internal consistency measured by the split-half method ranges from .84 to .91. The Kuder-Richardson reliability correlations range from .80 to .83. The reading level needed to complete items is Grade 6.8. Construct validity is recorded as being between .85 and .90. This information is derived from the correlation of the test items with the anxiety factor. In the present investigation, this test was used to provide a measure of anxiety.

IPAT Depression Scale Questionnaire (or Personal Assessment Inventory). The IPAT Depression Scale Questionnaire (Krug & Laughlin, 1976) is a test produced by the Institute for Personality and Ability Testing (IPAT). It is a 40-item questionnaire for use in clinical diagnosis and psychological research on depression. In the development of the test, factor analysis and empirical keying or contrasted groups, two independent methods of test construction, were used.

The authors report that the test takes approximately 10 minutes to complete for an examinee of reading ability at or in excess of the 5.9 grade level. The examinee is required to choose between three answers to each question. Two sample items are completed before the test is begun. The test is quickly and easily scored by means of scoring keys. Two scores are obtained from the test. One uses 36 items from the test,

while the other involves the complete 40 items. The 36 item score involves the deletion of questions which overlap with anxiety.

Extensive information about reliability and validity is provided in the test Manual. Test-retest reliability is expected to be .93 from extrapolation from another test (Clinical Analysis Questionnaire) also developed by the authors and bearing many characteristics in common with the IPAT Depression Scale. Alpha reliability co-efficients reflecting internal consistency are reported as being .85 to .93. The authors report validity information wherein the 36 item score correlates with the pure depression factor they isolated on factor analysis (.88). They also report predictive validity information concerning how well the test differentiates normals from diagnosed depressives and how well the test correlates with other constructs to conform to theoretical expectation. In the present investigation, the one 36 item score for depression was used.

Data Collection

Data was collected individually from the premenstrual complainers in the research facilities of the reproductive endocrinologist. Testing took, in general, one and a half hours. Tests were administered by the researcher and trained research assistants. The majority of non-complainers were tested in the same setting or in an education clinic. Subjects in the non-complaining group who were personally known to the researcher were trusted to complete protocols intermenstrually alone with instructions carefully explained. The psychiatric patients were all tested in hospital settings and tests were administered by the investigator

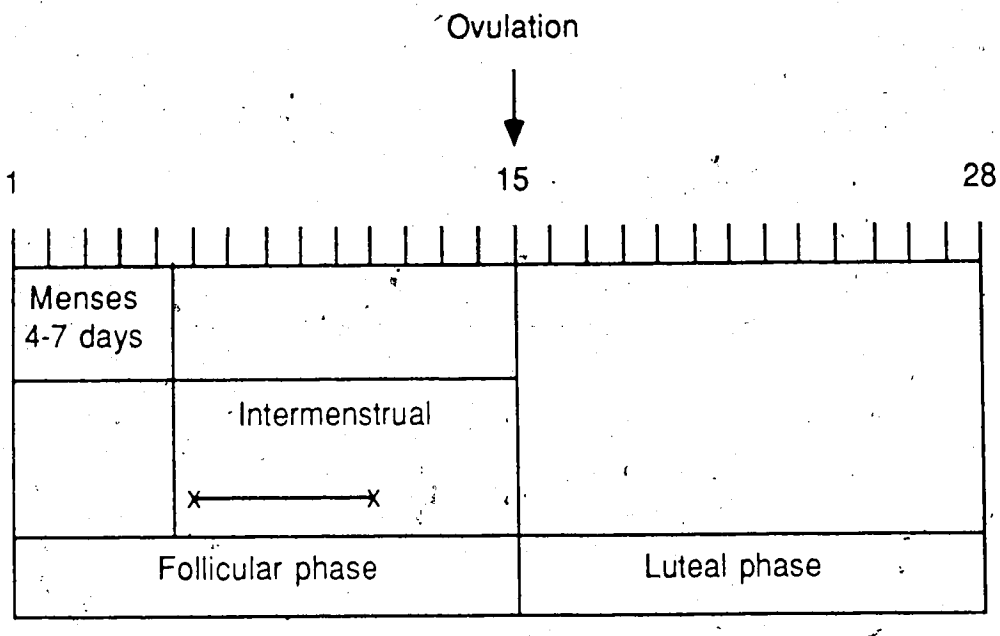
herself. Subjects in the non-treatment group completed the tests in community halls, classrooms, and places of employment. Group administration was utilized and supervision was by trained research assistants. All tests were administered in the same order for each subject.

As mentioned earlier in this chapter, testing was undertaken intermenstrually for Groups I, II, and III. As also mentioned, cycle phase was carefully established by telephone interview using the Subject Data Form technique. The timing of the intermenstrual phase is presented in Figure 3 on page 61 and the precise days during which testing was undertaken noted.

Data Analysis

The four groups of subjects were administered the psychological test instruments. Demographic data concerning social class, marital status, parity, and age were collected from each group. Primarily, data analysis took the form of a multivariate analyses of variance on the means produced by each of the four groups for each of the psychological constructs measured. Analysis by MANOVA was employed to reduce the possibility of Type 1 Error where more than one instrument measured a particular construct or series of related constructs. The computer program used for these analyses was MULV16 (Hunka, 1983). This program is a modification of a generally available statistics package and can be obtained from the Division of Educational Research Services

Figure 3



x——x Testing was undertaken during this time which extends from the day following the last day of menses until day 11. This time is viewed as being truly "intermenstrual".

Menstrual Cycle Timing for Idealized, Average, 28 Day Cycle

(DERS) at the University of Alberta. Also used in the treatment of the data was univariate analysis of variance (ANOVA). The computer program used was ANOV16 (Hunka, 1981) which is also available from DERS. Appropriate tests of significance were performed. Results at the .05 level were considered to be statistically significant. Further information about the data analyses and the results is provided in the next chapter.

CHAPTER 5

Findings and Conclusions

The findings of the research are reported in this chapter. Initially, the results pertaining to the hypotheses of the thesis are reported. Thereafter, ancillary findings which relate mainly to the demographic data are considered. However, other information collected which aids in ruling out counterhypotheses is also presented in the ancillary section. For ease of reader recall, the hypotheses are restated, followed by a presentation of the actual analysis and the conclusions which may be drawn from the data.

Hypothesis I Women categorized as complainers and treatment seekers regarding premenstrual psychological problems will report greater levels of premenstrual change than both psychiatric patients and women who are not categorized as complainers and treatment seekers.

Analysis

In order to test the above hypothesis, means on the Premenstrual Assessment Form (PAF) for the three treatment groups in the study were calculated. These means and standard deviations appear in Table 1.

TABLE 1

Means and Standard Deviations on the PAF for the Treatment Groups

	Complainers	Non-Complainers	Psychiatric Patients
Mean	232.57	93.40	167.74
S.D.	57.79	30.17	74.13

As can be seen from visual comparison, the means appear different. Therefore, to validate that a statistical difference exists, a one-way analysis of variance and Scheffe Post-Hoc Pairwise Contrasts were performed. The results of these calculations are reported in Tables 2 and 3.

TABLE 2

Analysis of Variance of the PAF Scores for the Three Treatment Groups

Source of Variation	Sum of Squares	df	Mean Square	F	p
Between	339476.44	2	169738.19	52.25	<0.01
Within	331335.31	102	3248.39		

In Table 3, the groups compared are Complainers (Group 1), Non-Complainers (Group 2), and Psychiatric Patients (Group 3).

TABLE 3

Scheffe Post-Hoc Pairwise Contrasts Across the Three Treatment Groups

Group	Mean Difference	Standard Error	df	F	p
1-2	139.17	185.62	2,102	104.34	<0.01
1-3	64.831	185.62	2,102	22.64	<0.01
2-3	-74.34	185.62	2,102	29.77	<0.01

As may be determined from Table 2, the analysis of variance indicates that there is a statistical difference between the means of all three groups. The probability exceeds the .01 level. In addition, as can be seen from the probabilities reported in Table 3, the results of the Scheffe Post-Hoc Pairwise Contrast indicated that differences between the three groups (ie. Complainers x Non-Complainers, Complainers x Psychiatric Patients, and Non-Complainers x Psychiatric Patients) also all exceed .01.

Conclusion

Given the present results, it may be stated that Hypothesis I is confirmed. Women who complain of premenstrual problems and seek treatment for such problems report greater change in psychological symptoms premenstrually than do either psychiatric patients or non-complainers.

Hypotheses II, III, and IV

These hypotheses were all tested via the same psychological assessment instruments and, therefore, they are grouped together for clarity of discussion.

Hypothesis II Women categorized as complainers and treatment seekers regarding premenstrual psychological problems will be no different in levels of psychological symptoms during the intermenstrual phase of their menstrual cycles from women who are not categorized as complainers and treatment seekers.

Hypothesis III Psychiatric patients with diagnosed non-psychotic depressive illness will exhibit more psychological disturbance during the intermenstrual phase of their menstrual cycles than women who are categorized as complainers and treatment seekers regarding premenstrual psychological problems and who are also in the intermenstrual phase of their cycles.

Hypothesis IV Women categorized as complainers and treatment seekers regarding premenstrual psychological problems will be no different in levels of psychological symptoms during the intermenstrual

phase of their menstrual cycles from a group of women from the community at large.

Analysis

Subjects were administered psychological assessment instruments which fall into two categories. Firstly, intermenstrual mood state was measured using the Profile of Mood States (POMS). Also measuring mood state was the State Scale of Spielberger's State-Trait Anxiety Inventory (STAI). Secondly, longer term affective characteristics were measured using the Institute of Personality and Ability Testing (IPAT) Depression and Anxiety Scales and the Trait Anxiety Scale of the STAI. Also added to this cluster of tests was the General Health Questionaire (GHQ). Analysis of the results of these assessment instruments is described in the following two sections of this chapter.

Results of Profile of Mood States (POMS) and of the STAI-State Scale. In order to test Hypotheses II, III, and IV, means were calculated on the POMS Tension/Anxiety, Depression/Dejection, Anger/Hostility, Vigor, Fatigue, and Confusion/Bewilderment Scales for the three treatment groups and for the non-treatment group taken from the community at large. Groups 1, 2, and 3 are respectively Complainers, Non-Complainers, and Psychiatric Patients. Group 4 consists of the non-treatment Community Sample. Means were also calculated for the STAI-State Anxiety Scale. These means and standard deviations appear in the following table (Table 4).

TABLE 4

Means and Standard Deviations on the POMS and the STAI-State Scales

Variable	Statistic	Group 1	2	3	4
POMS Tension/Anxiety	Mean	7.71	4.20	17.34	9.22
	S.D.	7.62	3.74	7.80	7.90
Depression/Dejection	Mean	6.57	3.08	27.26	6.66
	S.D.	10.17	5.66	15.53	12.13
Anger/Hostility	Mean	4.26	2.57	9.63	7.11
	S.D.	6.72	4.13	10.34	7.60
Vigor	Mean	13.86	16.83	7.14	15.29
	S.D.	7.54	5.01	5.62	8.00
Fatigue	Mean	8.20	6.29	13.51	9.63
	S.D.	7.43	5.14	7.67	7.99
Confusion/ Bewilderment	Mean	5.43	3.51	13.26	6.37
	S.D.	5.64	2.31	6.00	5.86
STAI State Scale	Mean	36.43	29.89	53.37	36.46
	S.D.	11.68	7.38	12.16	12.58

As can be seen from visual comparison of the means included in Table 4, there appear to be differences between some of the means reported. Since there are four groups of subjects compared across seven variables, a multivariate analysis of variance (MANOVA) was performed to ascertain whether or not a statistical difference exists. The MANOVA was found to be significant ($F=6.07$, $df=21, 373.8$, $p < .01$) by the Wilks' Lambda Criterion (Harris, 1976). To determine which group differences on a given dependent variable contributed to the significant MANOVA, 95 per cent simultaneous confidence intervals on pairwise differences between groups were constructed. In Table 5, the variables

and the groups are listed. Listing in the table indicates that they differ significantly at the .05 level with respect to that variable.

TABLE 5

Summary of the Multiple Comparisons ($p < .05$) for the Four Groups

Variable	Group
POMS Tension/Anxiety	1 vs 3, 2 vs 3, 3 vs 4
POMS Depression/Dejection	1 vs 3, 2 vs 3, 3 vs 4
POMS Anger/Hostility	
POMS Vigor	2 vs 3, 3 vs 4
POMS Fatigue	
POMS Confusion/Bewilderment	1 vs 3, 2 vs 3, 3 vs 4
STAI State Anxiety	1 vs 3, 2 vs 3, 3 vs 4

Conclusions Possible From These Data

From the results of the assessment of mood state, it may be stated that Hypotheses II, III, and IV are confirmed. Women who complain of premenstrual problems and seek treatment for such problems are no different in mood state intermenstrually from non-complaining women and from women in the community at large. They are also different in level of dysphoric mood from psychiatric patients with diagnosed affective disorders.

Results of the IPAT Depression and Anxiety Scales and of the STAI-Trait Scale. Hypotheses II, III, and IV were also tested by calculating the means on the IPAT Depression and Anxiety Scales and on the STAI-Trait Scale for the three treatment groups and for the non-treatment group of women taken from the community at large. Means for the four groups on the General Health Questionaire (GHQ) were also calculated. All means and standard deviations are included in the following table (Table 6)

TABLE 6

Means and Standard Deviations on the IPAT Scales, the STAI-Trait Scale, and the GHQ for the Four Groups

Variable	Statistic	Group 1	2	3	4
IPAT Depression	Mean	29.14	10.02	42.29	21.49
	S.D.	16.11	9.54	12.26	16.10
Anxiety	Mean	39.83	22.43	47.57	33.77
	S.D.	16.26	10.52	11.49	12.86
STAI Trait	Mean	43.14	32.29	55.11	39.00
	S.D.	11.14	8.28	10.04	14.03
GHQ	Mean	20.73	5.20	35.48	15.49
	S. D.	17.51	5.93	14.51	14.09

As can be seen from the means included in Table 6, there appear to be differences between some of the means reported. Since there are four groups of subjects compared across four variables, a multivariate analysis of variance (MANOVA) was performed to ascertain whether or not a statistically significant difference exists. The MANOVA was found to be significant ($F=15.62$, $df=12.0, 352.2$, $p < .01$) by the Wilks' Lambda Criterion (Harris, 1976). To determine which group differences on the a given dependent variable contributed to the significant MANOVA, 95 per cent simultaneous confidence intervals on pairwise differences between groups were constructed. In Table 7, variables and groups are listed. Listing in the table indicates they differ significantly at the .05 level with respect to that variable.

TABLE 7

Summary of Multiple Comparisons (p=.05) for the Four Groups

Variable	Group
IPAT Depression Scale	1 vs 2, 2 vs 3, 3 vs 4
IPAT Anxiety Scale	1 vs 2, 2 vs 3, 3 vs 4
STAI-Trait Anxiety Scale	1 vs 2, 1 vs 3, 2 vs 3, 3 vs 4
General Health Questionaire	1 vs 2, 2 vs 3, 3 vs 4

Conclusion

From the results of the assessment of long-term affective characteristics, it may be stated that Hypotheses II, III, and IV cannot be unconditionally affirmed. Complainers were not significantly different from the community sample or the psychiatric patients in long-term affective characteristics. Their scores were significantly different from those of the non-complainers. Possible explanations for these findings are discussed in the final chapter.

Ancillary Findings

In this section, findings concerning the demographic characteristics of the women in the three treatment groups and of the women in the community sample are reported. Demographic characteristics considered to be important in the study were age, parity, and socio-economic status. Also reported in the section are results of Family Inventory of Life Events and Changes (FILE) which measures present and past stresses.

Information concerning age, parity, and socio-economic status.

Information concerning age, parity, and socio-economic status was

collected from all of the women included in the study using the Subject Data Form (SDF).

Analysis

In order to test counterhypotheses, means were calculated on measures of age, parity, and socio-economic class for the four groups. These means and standard deviations appear in Table 8.

TABLE 8

Mean Age, Parity, and Socio-Economic Status (SES)

Variable	Statistic	Group 1	2	3	4
Age	Mean	30.09	31.70	32.46	30.31
	S. D.	5.70	6.46	5.08	5.06
Parity	Mean	1.89	2.14	1.31	1.43
	S.D.	1.26	1.22	1.14	1.15
S.E.S.	Mean	44.71	50.91	47.23	31.94
	S.D.	15.87	18.85	15.34	18.58

A multivariate analysis of variance (MANOVA) was performed to ascertain whether or not a statistically significant difference exists between the groups in terms of age, parity, and socio-economic status. The MANOVA was found to be significant ($F=4.18$, $p<.01$) by the Wilks' Lambda Criterion (Harris, 1976). To determine which group differences on the age, parity, and socio-economic status measures contributed to the significant MANOVA, 95 per cent simultaneous confidence intervals on pairwise differences betweeen the groups were constructed. In Table 9, the measures and the groups are listed.

TABLE 9

Summary of the Multiple Comparisons for the Four Groups

Variable	Group	Significance
Age		N.S.
Parity		N.S.
Socio-Economic Status	2 vs 4	.05

Conclusion

There is a difference in socio-economic status between the non-complainers and the non-treatment group. However, there is no statistically significant difference in age, parity, and socio-economic status among the three treatment groups.

Results of the Family Life Events and Changes (FILE) Present and Past Scales. To test counterhypotheses, means were calculated on the FILE Present and FILE Past Scales for the three treatment groups and for the non-treatment, community sample. These means and standard deviations appear in Table 10.

TABLE 10

Means and Standard Deviations on the FILE Present and FILE Past Scales for the Four Groups

Variable	Statistic	Group 1	2	3	4
FILE Present	Mean	12.69	7.66	14.63	11.03
	S.D.	6.69	5.73	7. 22	6.35
FILE Past	Mean	6.57	3.97	6.80	2.83
	S.D.	3.95	3.46	5.53	3.11

A multivariate analysis of variance (MANOVA) was performed to ascertain whether or not a statistically significant difference exists. The MANOVA was found to be significant ($F=6.20$, $p<.01$) by the Wilks'

Lambda Criterion (Harris, 1976). To determine which group differences contributed to the significant MANOVA, 95 per cent simultaneous confidence intervals on pairwise differences between groups were constructed. In Table 11, the variables and the groups are listed.

TABLE 11

Summary of Multiple Comparisons for the Four Groups

Variable	Group	Significance
FILE Present	2 vs 3	<0.05
FILE Past	1 vs 4, 3 vs 4	<0.05

Conclusion

A relationship was found to exist between past stresses and the reporting of premenstrual problems.

Summary of Findings

The results indicate that women who complain of premenstrual problems and seek treatment for them actually do report more premenstrual change than either psychiatric patients or non-complaining women. When premenstrual complainers attending gynecologic practice are assessed intermenstrually, they are found to be different in level of dysphoric mood from psychiatric patients with diagnosed affective disorders who are also in the intermenstrual phase. They are similar to intermenstrual non-complaining women and to women taken from the community at large. When reporting on longer-term affective characteristics, women with premenstrual complaint are less distinguishable from the psychiatric population with affective disorders. The General Health Questionaire (GHQ), a measure of mild psychiatric

disturbance of the type found in the general medical population was also administered. The results indicate that the premenstrual complainers are unlike non-complaining women, are similar to psychiatric patients, but not different from women in the community at large on this measure of mild disturbance. Additionally, for longer-term affective characteristics of anxiety and depression, women who complain of premenstrual problems and women in the community are similar. However, the complainers are unlike non-complainers and are similar to psychiatric patients. Interestingly, they are both unlike psychiatric patients and unlike non-complainers in terms of trait anxiety. However, the premenstrual complainers and women from the community are the same or similar on this dimension of anxiety. From the ancillary findings, it was established that a relationship exists between past stresses and the reporting of premenstrual problems.

CHAPTER 6

Discussion and Implications

It is emphasized that the focus of the present study was not upon premenstrual syndrome per se but on the intermenstrual psychological characteristics of women who complain about premenstrual problems and seek treatment for them. The possible syndrome constitutes a complex area for study. Among the difficulties involved in its study is the fact that it even lacks a commonly accepted, precise definition. In addition, information about the psychological status of women who complain is also far from complete. Consequently, the major purpose of this psychological study was to provide some useful information about premenstrual complainers. The results of the study reported in the previous chapter, are not, therefore, informational about any syndrome or syndromes. What the study does provide is a comparison between premenstrual complainers and certain others groups of women across several psychological dimensions. It should be noted that by identifying differences between various groups of women an initial step has been taken in a search for patients with what might be described as "true" premenstrual syndrome, where there is no psychiatric disorder.

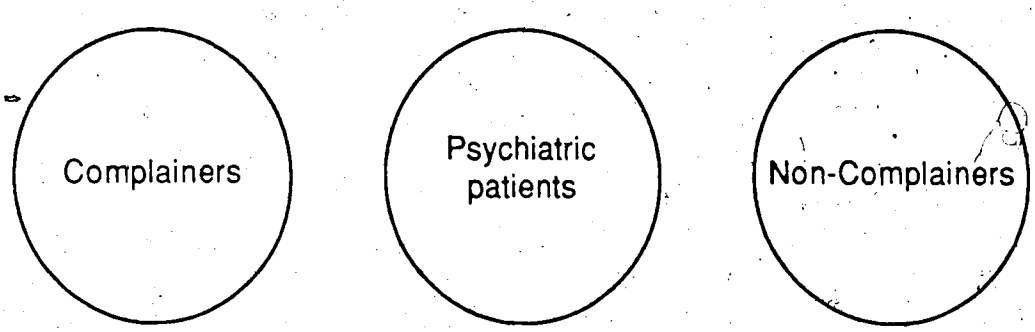
It will be recalled that the study was operationalized by comparing, on a battery of psychological tests, a group of 35 premenstrual complainers who had no psychiatric history with three other groups of women. The three other groups respectively consisted of 35 non-complainers, 35 psychiatric patients with affective disorders, and 35

women taken from the community at large. All the women included in the study except those in the community sample were in the intermenstrual phase of the menstrual cycle at the time of testing. Herein, the results of the comparison across the four groups, which were set out in Chapter 5 are discussed. Information about level of premenstrual complaint across the treatment groups is also noted. Furthermore, directions for future research and implications for intervention, which arise from the findings of the study, are discussed.

Discussion of Results

It was hypothesized that the premenstrual complainers would be distinguishable from the non-complainers and from the psychiatric patients in level of premenstrual psychological change reported. It was found that the mean level of change reported by the complainers was, indeed, considerably different from the means obtained from the other two groups. These results suggest that despite the current dogma in relation to prospective recording being essential for assessment of premenstrual change, retrospective accounts do, to some extent, differentiate groups of women. In Figure 4, the separateness of the groups in terms of mean level of premenstrual change reported, is illustrated.

Figure 4

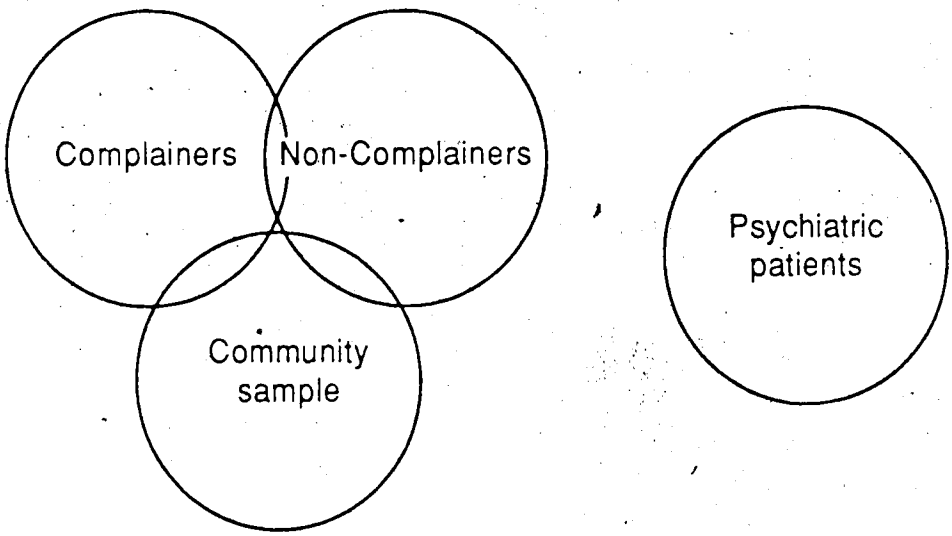


Three Groups of Women Distinguishable by Mean Premenstrual Change Scores

Central to the study were hypotheses concerning what would be found in terms of the intermenstrual psychological status of the premenstrual complainers. It was hypothesized that they would be no different from a group non-complainers and from a group of women taken from the community at large but would be unlike psychiatric patients with affective disorders. The results are thought-provoking. When asked questions relating to how they feel at the moment, intermenstrually, the complainers on average exhibit no mood disturbance in relation to the dimensions of anxiety, depression, and confusion/bewilderment. The complainers were found to be similar to non-complainers and similar to the community sample but unlike psychiatric patients. These findings are compatible with the results of studies where intermenstrually symptom-free premenstrual complainers have been identified. The 1985 study reported by Freeman, Sondheimer, Weinbaum, and Rickels is an example of such a study. However, the present findings also suggest

that such women can be initially identified without prospective recording of symptoms. Women with on-going affective disorders can also be identified without resorting to time consuming prospective recording. Figure 5 provides an illustration of intermenstrual mood state among the three treatment groups and of mood state of the community sample.

Figure 5

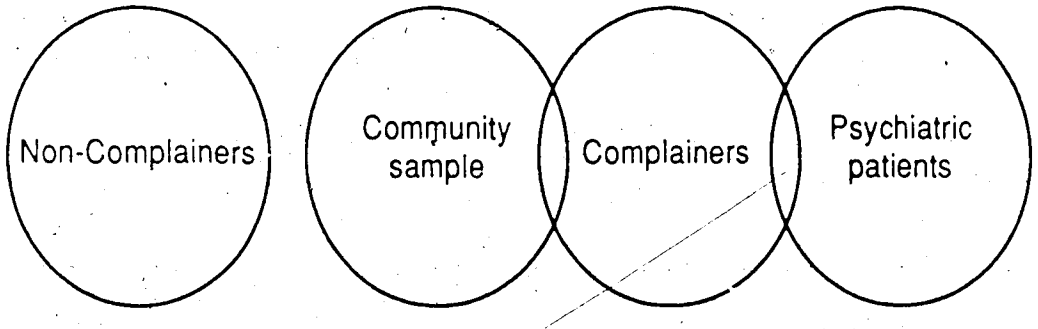


Overlap of Results on Assessment of Mood State

From the results presented in Chapter 5, it can be seen that a comparison of longer term affective characteristics between the groups of women included in the study produced results somewhat at variance with those found in relation to mood state. While not unlike women taken from the community at large along the dimensions measured in the study, they are consistently different from non-complainers and sometimes indistinguishable from psychiatric patients with affective disorders.

These results are comparable to those of studies such as that of Clare (1983) where it is suggested that women who complain of premenstrual problems are more likely than non-complainers to exhibit mild psychiatric illness. When premenstrual complainers are asked to report on time periods which include the premenstrual phase of the cycle, it appears that they are comparable to psychiatric patients. In addition, despite screening for psychiatric disorders, the group of complainers contained some women who were clinically depressed and/or anxious at the time of testing. However, it is unlikely that there were more depressed or anxious women in the premenstrual complaining group than are found in the general female community sample. Comparisons beween the groups are illustrated in Figure 6.

Figure 6



Overlap of Results on Assessment of Longer-term Affective Chacteristics

Although collected to rule out counterhypotheses, some of the ancillary information reported in Chapter 5 is interesting. Of particular interest is the finding that premenstrual complainers report more external

past stressors than women taken from the community at large. This finding is compatible with the results of such studies as that of Woods (1985) where stress appeared to be a factor involved in symptom reporting. Findings implicating stress such as the present ones do, support the contention that premenstrual syndrome may be multifactorial in nature.

Summary

The results indicate that differing kinds of psychological assessment will produce varying results. Intermenstrual assessment of mood state appears to be particularly important in distinguishing premenstrual complainers from psychiatric patients. With assessment during the intermenstrual phase, the major contention of this study is affirmed. There are premenstrual complainers who are intermenstrually no different from women within the community at large or from non-complainers. The results do not, therefore, support the contention that premenstrual complaint is entirely psychological or internal in causation. Since external stressors may also be involved, the results may be interpreted as supporting multifactorial explanations.

Although it has been suggested in the literature that the type of symptoms reported may not be important, these results indicate otherwise. The symptoms of anxiety and depression, in particular, differentiate premenstrual complainers from psychiatric patients intermenstrually.

Implications and Directions for Future Research

The results of the present study indicate that a group of premenstrual complainers, who are symptom-free in the intermenstrual period, can be identified without prospective recording of symptoms across menstrual cycles. A first step in identifying women with "true" premenstrual syndrome without underlying psychological or psychiatric disorder has been successfully taken. There are several directions for future research in both the biological and psychological areas which are suggested by the current findings.

A major implication arising from the study is that careful selection of subjects for premenstrual syndrome research is extremely important. Psychologists and psychiatrists should use subjects with severe premenstrual complaint who are intermenstrually symptom-free, if they are to provide any information relevant to premenstrual syndrome. To date, most, if not all, psychological research has been undertaken with either non-complaining college students or unselected community samples. Sound, psychologically based research is, therefore, needed which describes a population with severe premenstrual complaint, screened for psychiatric illness. In psychiatric research, until very recently, few investigators have differentiated between premenstrual exacerbation of already existing problems and symptomatic premenstrual change. It may well be that women who are referred to psychiatrists, on the whole, are not a suitable population for study into what may be described as "true" premenstrual syndrome (PMS).

The present study has provided information about intermenstrual mood state. Steps have also been taken towards describing longer-term personality characteristics of premenstrual complainers. A direction for future psychological research involves more extensive personality assessment than that undertaken in this study. In particular, assessment using an instrument such as the newly available Millon Clinical Multiaxial Inventory (Millon, 1983), a measure of a broad range of personality psychopathology, may be helpful. Further useful information should be forthcoming from comparison of intermenstrual and premenstrual scores.

Although the results indicate that a group of premenstrually symptom-free complainers can be identified on intermenstrual mood assessment, validation of findings with recording of symptoms across cycles in the PMS "possibles" is needed at present. Future research should focus on cross-cycle assessment. Comparison of different menstrual cycles over time requires sophisticated computer analysis such as that being developed by Magos, Brincat, and Studd (1986).

External stressors may be involved in the genesis of premenstrual complaint. Therefore, exploration of the coping skills of such women is another avenue for future psychological research to be followed. Intervention studies to evaluate stress management and to assess the efficacy of coping skills programs could also be undertaken.

Biological researchers need to use information from psychological studies to aid in the subject selection. Before biological studies into premenstrual syndrome per se are undertaken, prospective recording of

symptoms across cycles is still probably prudent. Only women who are intermenstrually symptom-free should be included in such research. Using the findings of this study, women with on-going affective disorders can be screened out from treatment populations. Given that a group of complainers, who are symptom-free in the intermenstrual period, can be identified, it seems likely that there is biological involvement in the development of premenstrual complaint. Therefore, further biological studies appear to be warranted on the basis of present findings. Such studies should be undertaken using women who are not only symptom-free intermenstrually but who also report very high premenstrual change scores.

Implications for Intervention

The women with premenstrual complaint in this study are not different from women in the community at large in level of mood state and in longer term affective characteristics. In the intermenstrual phase, they are not different in mood state from non-complainers. When reporting on time periods which include the premenstruum, they are also comparable in level of dysphoria with psychiatric patients with affective disorders. Within the group of women with premenstrual complaint, there are one or two individuals whose dysphoria spans the whole menstrual cycle. Premenstrual complainers also reported higher levels of past stresses than women in the community at large. These results hold implications for interventions which may be medically, psychologically, or educationally based. However, from the review of the literature and from

the present findings, the multifactorial nature of premenstrual complaint mandates a continuum of care where there is multidisciplinary involvement wherever possible.

Within an interdisciplinary approach, assistance for women with premenstrual complaint can be provided by members of the nursing, medical, psychological or educational professions. The extent and type of the presenting problems must be carefully evaluated by whoever does the initial assessment. Gynecologists and family physicians should be careful in labelling patients with either premenstrual syndrome or psychiatric disorder because it may not be possible clinically to differentiate these problems. If there is doubt about a patient's status, further evaluation through a psychologist or psychiatrist should be undertaken. Medical practitioners should also be prepared to accept that other professions may have relevant expertise with which to manage some aspects of patient care. For example, if there are significant life stresses, then non-pharmacological approaches, such as psychotherapy, may be appropriate. Psychologists may be required to become involved with the care of patients both in assessment and in provision of specific therapeutic approaches. They must also be aware that concurrent non-psychological approaches may be appropriate in dealing with symptoms.

Among women who complain there will certainly be those who are clinically depressed and anxious. For some such women, pharmacotherapy provided in the context of biological psychiatry will hold most promise of symptom relief. Individual psychotherapy provided

by a suitably trained professional may also be an effective approach. The premenstrual exacerbation of on-going problems must be validated. However, while PMS may be closely associated with psychological ill health, the results of the present study suggest some women with premenstrual complaint are distinguishable from psychiatric patients with affective disorders. Approaches other than antidepressant and anxiolytic medications and extensive psychotherapy, therefore, need to be available.

Although attitudes towards premenstrual syndrome are changing, women who believe they have this condition may still meet with ridicule and denial among family members, friends, and members of the professional community. For such women, validation of their experience is crucial. They may also fear that they are "crazy". The present results suggest, however, that women who complain of premenstrual problems are comparable to women in the community at large. Therefore, many of them should possess the psychological resources to cope with their problems and to benefit from educational and counselling interventions. While validation and reassurance constitute a first step in intervention with such women (Dan, Konat, & Lewis, 1986), an educational approach may also be needed. Appropriately trained members of the nursing profession appear ideally suited to being providers of educational interventions, such as life-style counselling in the hospital setting. The present results suggest that some women with premenstrual complaint could benefit from such an approach.

Although further research is needed as confirmation, the results of the study suggest that external stressors may be involved in the genesis of premenstrual complaint. For women who report high levels of external stressors, intervention could include stress management training. An analysis of stressors might also lead to family or couple counselling. Certainly, current knowledge about premenstrual complaint suggests that it may be linked with marital disharmony and other interpersonal problems in some cases (Clare, 1983). In other cases, assertiveness training and/or relaxation therapy designed for normal individuals may prove helpful. A psychologist may well be a most suitable professional to deliver these services.

It may be concluded from the study that premenstrual symptom reporting cannot be entirely explained away by psychological theories. Assessment of physical symptoms must be carefully undertaken. As noted elsewhere, there is as yet no "cure" even for the physical problems. In some instances, relief from physical problems through medication can be useful in providing respite. Energy to deal with the psychological problems may also be gained via the relief of medication. A medical evaluation should be undertaken, particularly where there is extreme physical complaint. Members of each of the professions which may be involved with premenstrual complainers need respect physical as well as psychological complaints. Psychologists and educators may well miss the significance of extreme physical discomfort reported by premenstrual complainers if they are not alert to the biological aspect.

In the area of general education of young people, whether they be male or female, it is important that accurate knowledge of premenstrual problems be made available. With the broad context of sexuality education, information about the normal menstrual cycle should be provided as well as information about possible problems such as premenstrual syndrome and dysmenorrhea. Although no decisive information about prevalence of premenstrual syndrome as a function of the age factor is available as yet, premenstrual complaints do not appear to be as common among young women as among mature women. In this study, the average age of the complainers was in thirty to forty years of age range.

For society in general, this research has re-emphasized that women should not be stygmatized because of premenstrual problems. As noted earlier, negative attitudes towards menstruation and towards women who complain of premenstrual problems exist. A major force in combating stigmatization of any kind is knowledge. All professionals who work in any area where they can exert a positive influence to combat such stygmatization of women must work towards educating the public about premenstrual syndrome. The school is an excellent place to begin. Hopefully, with more widespread and accurate knowledge about menstrual cycle events, including problem areas such as premenstrual complaint, women will, in the future, not meet with as much prejudice and discrimination as they have faced in the past. That such topics as menstruation and premenstrual syndrome can now be openly discussed

in many situations constitutes a considerable advance. Further progress in this direction is, however, needed. Knowledge such as that provided by the present study should contribute towards this progress.

References

Abplanalp, J. M. (1983). Psychologic components of the premenstrual syndrome. Journal of Reproductive Medicine, 28, 517-524.

Abplanalp, J. M., Haskett, R. F., & Rose, R. M. (1980). The premenstrual syndrome. Psychiatric Clinics of North America, 3, 327-347.

Abraham, G. E. (1980). Premenstrual tension. Current Problems in Obstetrics and Gynecology, 3(2), 1-39.

Abraham, G. E. (1983). Nutritional factors in the etiology of the premenstrual tension syndromes. Journal of Reproductive Medicine, 28, 446-464.

Abraham, S., Fraser, I., Gebski, V., Knight, C., Llewellyn-Jones, D., Mira, M., & McNeil, D. (1985). Menstruation, menstrual protection, and menstrual practices of young Australian women. Medical Journal of Australia, 142, 247-251.

Abrahamovitz, E. S., Baker, A. H., & Fleischer, S. F. (1982). Onset of depressive psychiatric crises and the menstrual cycle. American Journal of Psychiatry, 139, 475-478.

Argonz, J., & Abinzano, C. (1950). Premenstrual tension treated with vitamin A. Journal of Clinical Endocrinology and Metabolism, 10, 1579.

Awaritefe, A., Awaritefe, M. A., Diejomaoh, F. M., & Ebie, J. C. (1980). Personality and menstruation. Psychosomatic Medicine, 42, 237-251.

Bancroft, J., & Backstrom, T. (1985). Premenstrual syndrome. Clinical Endocrinology, 22, 313-336.

Benedek, T. & Rubenstein, B. B. (1942). The sexual cycle in women. Psychosomatic Monographs 1, 2, 3. Washington, DC: National Research Council.

Berry & Maguire (1972). Menstrual distress and acceptance of sex role. American Journal of Obstetrics and Gynecology, 114, 83-87.

Blishen, B. (1958). The construction and use of an occupational class scale. Canadian Journal of Economics and Political Science, 24, 521-531.

Blishen, B. & McRoberts, H.A. (1976). A revised socioeconomic index for occupations in Canada. Canadian Review of Sociology and Anthropology, 13, 71-80.

Blume, E. B. (1983). Premenstrual syndromes, depression linked. Journal of the American Medical Association, 249, 2864-2866.

Brahams, D. (1981). Premenstrual syndrome: A disease of the mind? Lancet, 2, 1238-1240.

Brooks-Gunn, J., & Ruble, D. N. (1980). The menstrual attitude questionnaire. Psychosomatic Medicine, 42, 503-512.

Brush, M. G. (1977). The possible mechanisms causing premenstrual tension syndrome. Current Medical Research and Opinion, 4 (Suppl. 4), 9-15.

Budoff, P. W. (1983). The use of prostaglandin inhibitors for the premenstrual syndrome. Journal of Reproductive Medicine, 28, 469-478.

Carroll, B. J., & Steiner, M. (1978). The psychobiology of premenstrual dysphoria: The role of prolactin. Psychoneuroendocrinology, 3, 171-180.

Casper, R.F., & Powell, A. (1986). Premenstrual syndrome: Documentation by a linear analogue scale compared with two descriptive scales. American Journal of Obstetrics and Gynecology, 155, 862-867.

Cattell, R. B., & Scheier, I. H. (1963). Handbook for the IPAT Anxiety Scale Questionnaire. Champaign, IL: Institute for Personality and Ability Testing.

Chakmakjian, Z. (1983). A critical assessment of therapy for premenstrual tension syndrome. Journal of Reproductive Medicine, 28, 532-538.

Chuong, C. J., Coulam, C. B., Kao, P. C., Bergstralh, M. S., & Go, V. L. (1985). Neuropeptide levels in premenstrual syndrome. Fertility and Sterility, 44, 760-765.

Clare, A. W. (1983) Psychiatric and social aspects of premenstrual complaint. Psychological Medicine, (Mono. Suppl. 4), 1-58.

Clare, A. W. (1985a). Hormones behavior and the menstrual cycle. Journal of Psychosomatic Research, 29, 225-233.

Clare, A. W. (1985b). The relationship between psychopathology and the menstrual cycle. In S. Golub (Ed.), Lifting the curse of menstruation (pp. 125-136). New York, NY: Harrington Park.

Cobe, P. (1974). Dispelling the menstrual myth. Forecast for Home Economics, 19, 50-51, 62-63.

Coppen, A. (1965). The prevalence of menstrual disorders in psychiatric patients. British Journal of Psychiatry, 111, 155-167.

Coppen, A. & Kessel, N. (1963). Menstruation and personality. British Journal of Psychiatry, 109, 711-721.

Crawford, P. (1981). Attitudes towards menstruation in seventeenth century England. Past and Present, 91, 48-73.

Cullberg, J. (1972). Mood changes and menstrual symptoms with different gestagen/estrogen combinations. Acta Psychiatrica Scandinavica, 48 (Suppl. 236), 7-86.

Dalton, K. (1984). Premenstrual syndrome and progesterone therapy. London, England: Heinemann.

Dan A.J., Konat J., & Lewis L.L. (1986) The patient with premenstrual syndrome. In J.D. Durham &S.B. Hardin (Eds), The nurse psycho-therapist in private practice (pp.143-156), New York: Springer.

DeJong, R., Rubinow, D. R., Roy-Byrne, P., Hoban, M. C., Grover, G. N., & Post, R. M. (1985). Premenstrual mood disorder and psychiatric illness. American Journal of Psychiatry, 142, 1359-1361.

Dennerstein, L., Spencer-Gardner, C., & Burrows, G. D. (1984). Mood and the menstrual cycle. Journal of Psychiatric Research, 18, 1-12.

Endicott, J., Halbreich, U., Schacht, S., & Nee, J. (1981). Premenstrual changes and affective disorders. Psychosomatic Medicine, 43, 519-524.

Endicott, J., Nee, J., Cohen, J., & Halbreich, U. (1986). Premenstrual changes: Patterns and correlates of daily ratings. Journal of Affective Disorders, 10, 127-135.

Faratian, B., Gaspar, A.,-O'Brien, P. M. S., Johnson, I. R., Filshie, G. M., & Prescott, P. (1984). Premenstrual syndrome: Weight, abnormal swelling and perceived [illegible]age. American Journal of Obstetrics and Gyneco[illegible] 150, 200-204.

Ferin, M. (1982). The neuroendocrinologic control of the menstrual cycle. In R. C. Friedman (Ed.), Behavior and the menstrual cycle (pp. 23-42). New York: Marcel Dekker.

Foresti, G., Ferraro, M., Reithaar, P., Berlanda, C., Volpi, M., Drago, D., & Cerutti, R. (1981). Premenstrual syndrome and personality traits. Psychotherapy and Psychosomatics, 36, 37-42.

Frank, R. T. (1931). The hormonal causes of premenstrual tension. Archives of Neurology and Psychiatry, 26, 1053-1057.

Freeman, E., Sondheimer, S., Weinbaum, P. J., & Rickels, K. (1985). Evaluating premenstrual symptoms in medical practice. Obstetrics and Gynecology, 65, 500-505.

Fritz, M. A., & Speroff, L. (1982). The endocrinology of the menstrual cycle. Fertility and Sterility, 38, 509-529.

Fuente, J., & Rosenbaum, A. H. (1981). Prolactin in psychiatry. American Journal of Psychiatry, 138, 1154-1160.

Goei, G. S., & Abraham, G. E. (1983). Effect of a nutritional supplement, Optivite, on symptoms of premenstrual tension. Journal of Reproductive Medicine, 28, 527-531.

Goldberg, D. P. (1972). The detection of psychiatric illness by questionnaire. London, England: Oxford University.

Goldberg, D. P. (1978). Manual of the General Health Questionnaire. Windsor, Berks., England: NFER-Nelson.

Golub, S. (1976). The magnitude of premenstrual anxiety and depression. Psychosomatic Medicine, 38, 4-12.

Golub, S. (1981). Sex differences in attitudes and beliefs about menstruation. In P. Kommenich, M. McSweeney, J. Noack, & N. Elder (Eds.), The menstrual cycle (pp. 129-134). New York, NY: Springer.

Golub, S. (1985). Lifting the curse of menstruation. New York, NY: Harrington Park.

Gough, H. G. (1975). Personality factors related to reported severity of menstrual distress. Journal of Abnormal Psychology, 86, 59-65

Green, J. (1982). Recent trends in the treatment of premenstrual syndrome. In R. C. Friedman (Ed.), Behaviour and the menstrual cycle (pp. 367-395). New York: Marcel Dekker.

Greene, R. & Dalton, K. (1953). The premenstrual syndrome. British Medical Journal, 1, 1007-1014.

Gruba, H. & Rohrbaugh, M. (1975). MMPI correlates of menstrual distress. Psychosomatic medicine, 37, 265-273.

Hain, J. D., Linton, P. H., Eber, H. W., & Chapman, M. M. (1970). Menstrual irregularity, symptoms, and personality. Journal of Psychosomatic Research, 14, 81-87

Halbreich, U., & Endicott, J. (1981). Possible involvement of endorphin withdrawal or imbalance in specific premenstrual syndromes and postpartum depression. Medical Hypotheses, 7, 1045-1058.

Halbreich, U., & Endicott, J. (1982). Classification of premenstrual syndromes. In R. C. Friedman (Ed.), Behaviour and the menstrual cycle (pp. 243-265). New York: Marcel Dekker.

Halbreich, U., & Endicott, J. (1985). Methodological issues in studies of premenstrual changes. Psychoneuroendocrinology, 10, 15-32.

Halbreich, U., Endicott, J., & Nee, J. (1983). Premenstrual depressive changes. Archives of General Psychiatry, 40, 535-542.

Halbreich, U., Endicott, J., Schacht, S., & Nee, J. (1982). The diversity of premenstrual changes as reflected in the Premenstrual Assessment Form. Acta Psychiatrica Scandinavica, 65, 46-65.

Hallman, J. (1986). The premenstrual syndrome: An equivalent of depression. Acta Psychiatrica Scandinavica, 73, 403-411.

Harris, R.J. (1976) A primer of multivariate statistics. New York, N.Y: Academic Press.

Harrison, M. (1985). Self-help for premenstrual syndrome. New York, NY: Random House.

Hart, R. M. (1981). Attitudinal aspects of premenstrual tension (Doctoral dissertation, Auburn University, 1981). Dissertation Abstracts International, 42, 1175B.

Haskett, R. F. & Abplanalp, J. M. (1983). Premenstrual tension syndrome: Diagnostic criteria and selection of research subjects. Psychiatry Research, 9, 125-138.

Haskett, R. F., Steiner, M. & Carroll, B. J. (1984). A psychoendocrine study of premenstrual tension syndrome. Journal of Affective Disorders, 6, 191-199.

Haskett, R. F., Steiner, M., Osmun, J.N., & Carroll, B. J. (1980). Severe premenstrual tension: Delineation of the syndrome. Biological Psychiatry, 15, 121-139.

Holden,C. (1986). Proposed new psychiatric diagnoses raise charges of gender bias. Science, 231, 327-328.

Horrobin, D. F. (1983). The role of essential fatty acids and prostaglandins in the premenstrual syndrome. Journal of Reproductive Medicine, 28, 465-468.

Huck, S.W., Cormier, W.H. & Bounds, W.F. (1974) Reading statistics and research. New York: Harper & Row.

Hunka S. (1981). ANOV16. University of Alberta, Edmonton, Division of Educational Research Services.

Hunka S. (1983). MULV16. University of Alberta, Edmonton, Division of Educational Research Services.

Jacubowicz, D.L., Godard, E., & Dewhurst, J. (1984). The treatment of premenstrual tension with mefanamic acid: Analysis of prostaglandin concentration. British Journal of Obstetrics and Gynaecology, 91, 78-84.

Janiger, O., Riffenburgh, R., & Kersh, R. (1972). Cross cultural study of premenstrual symptoms. Psychosomatics, 13, 226-235.

Janowsky, D. S., Berens, S. C., & Davis, J. M. (1973). Correlations between mood, weight and electrolytes during the menstrual cycle: A renin-angiotension-aldoesterone hypothesis of premenstrual tension. Psychosomatic Medicine, 35, 143-154.

Kashiwagi, T. McCurdy, J. N., & Wetzel, R. D. (1976). Premenstrual affective syndrome and psychiatric disorder. Diseases of the Nervous System, 37, 116-119.

Kerr, G. D. (1977). The management of premenstrual syndrome. Current Medical Research and Opinion, 4 (Suppl. 4), 24-34.

Keye, W. R., Hammond, D. C., & Strong, T. (1986). Medical and psychological characteristics of women presenting with premenstrual change. Obstetrics and Gynecology, 68, 634-637.

Koeske, R. K. (1980). Theoretical perspectives on menstrual cycle research: The relevance of attitudinal approaches for the perception and explanation of premenstrual emotionality. In A. Dan, E. A. Graham, & C. P. Beecher (Eds.), The menstrual cycle (pp. 8-25). New York: Springer.

Koeske, R. D., & Koeske, G. F. (1975). An attributional approach to moods and the menstrual cycle. Journal of Personality and Social Psychology, 31, 437-478.

Krug, S. E., & Laughlin, J. E. (1976). Handbook for the IPAT Depression Scale. Champaign, IL: Institute of Personality and Ability Testing.

Lamb, W. M., Ulett, G. A., Masters, W. H., & Robinson, D. W. (1953). Premenstrual tension: EEG, hormonal and psychiatric evaluation. American Journal of Psychiatry, 109, 840-848.

Levitt, E. E., & Lubin, B. (1967). Some personality factors associated with menstrual complaints and menstrual attitude. Journal of Psychosomatic Research, 11, 267-270.

Linkie, D. M. (1982). The physiology of the menstrual cycle. In R. C. Friedman (Ed.), Behavior and the menstrual cycle (pp. 1-21). New York: Marcel Dekker.

London, R. S., Sundaram, G. S., Murphy, L., & Goldstein, P. J. (1983). Evaluation and treatment of breast symptoms in patients with the premenstrual syndrome. Journal of Reproductive Medicine, 28, 503-508.

MacKenzie, T. B., Wilcox, K., & Baron, H. (1986). Lifetime prevalence of psychiatric disorders in women with perimenstrual difficulties. Journal of Affective Disorders, 10, 15-19.

Magos, A. L., Brincat, M., & Studd, J. W. (1986). Trend analysis of the symptoms of 150 women with a history of the premenstrual syndrome. American Journal of Obstetrics and Gynecology, 155, 277-283.

Magyar, D. M., Boyars, S. P., Marshall, J. R., & Abraham, G. E. (1979). Regular menstrual cycles and premenstrual molimina as indicators of ovulation. Obstetrics and Gynecology, 53, 411-414.

Martin, C. (1987, February) Premenstrual syndrome mitigates woman's sentence. Lawyers weekly, February 27th, p2.

May, R. R. (1976). Mood shifts and the menstrual cycle. Journal of Psychosomatic Research, 20, 125-130.

McCance, R. A., Luff, M. C., & Widdowson, E. E. (1937). Physical and emotional periodicity in women. Journal of Hygiene, 37, 571-605.

McCubbin, H. I., Patterson, J. M., & Wilson, L. R. (1981). Family Inventory of Life Events and Changes. St. Paul, MN: Medical Education and Research.

McNair, D. M., Lorr, M., & Droppleman, L. F. (1971). Manual for the Profile of Mood States. San Diego, CA: Educational and Industrial Testing Service.

Millon, T. (1983). Millon Clinical Multiaxial Inventory. Manual (3rd Ed). Minneapolis, MN: National Computer Systems.

Moos, R. H. (1968). The development of a menstrual distress questionnaire. Psychosomatic Medicine , 30, 853-867.

Moos, R. H. (1969). Typology of menstrual cycle symptoms. American Journal of Obstetrics and Gynecology, 103, 390-402.

Morton, J. H. (1950). Premenstrual tension. American Journal of Obstetrics and Gynecology, 60, 343-352.

Munday, M. (1977). Hormone levels in severe premenstrual tension. Current Medical Research and Opinion, 4 (Suppl. 4), 16-22.

O'Brien, P. M. S. (1982). The premenstrual syndrome. Drugs, 24, 140-151.

O'Brien, P. M. S. (1985). The premenstrual syndrome. Journal of Reproductive Medicine, 30, 113-126.

O'Brien, P. M. S., Craven, D., Selby, C.,.Symonds, E. M. (1979). Treatment of premenstrual syndrome by spironolactone. British Journal of Obstetrics and Gynecology, 86, 142-147.

Osmun, J. N., Steiner, M., & Haskett, R. F. (1983). Psychosocial aspects of severe premenstrual tension. International Journal of Women's Studies, 6, 65-70.

Paige, K. E. (1971). Effects of oral contraceptives on affective fluctuations associated with the menstrual cycle. Psychosomatic Medicine, 33, 515-537.

Parlee, M. (1982). Psychology of the menstrual cycle: Biological and psychological perspectives. In R.C. Friedman (Ed.), Behavior and the menstrual cycle (pp 77-99). New York; Marcel Dekker.

Parlee, M. B. (1973). The premenstrual syndrome. Psychological Bulletin, 80, 454-465.

Parlee, M. B. (1974). Stereotypic beliefs about menstruation: A methodological note on the Moos Menstrual Distress Questionnaire and some new data. Psychosomatic Medicine, 36, 229-240.

Parry, B. L., Rosenthal, N. E., & Wehr, T. A. (1985). Research techniques used in the study of premenstrual syndrome. In H. J. Osofsky & S. J. Blumenthal (Eds.), Premenstrual syndrome Current findings and future directions. Washington, DC: American Psychiatric Association.

Paulson, M. J. (1961). Psychological concomitants of premenstrual tension. American Journal of Obstetrics and Gynecology, 81, 733-738.

Porter, J., Porter, M., & Blisher, B. (1982). Stations and callings. Toronto: Methuen.

Price, W. A. & DiMarzio, L. (1986). Premenstrual tension syndrome in rapid-cycling affective disorder. Journal of Clinical Psychiatry, 47, 415-417.

Quigley, M. E., Judd, S. J., Gilliland, G. B., & Yen, S. S. C. (1979). Effects of a dopamine antagonist on the release of gonadotropin and prolactin in normal women and women with hyperprolactinemic anovulation. Journal of Clinical Endocrinology and Metabolism, 48, 718-720.

Quigley, M. E., & Yen, S. S. C. (1980). The role of endogenous opiates on LH secretion during the menstrual cycle. Journal of Clinical Endocrinology and Metabolism, 51, 179-181.

Rees, L. (1953a). The premenstrual tension syndrome and its treatment. British Medical Journal, 1, 1014-1016.

Rees, L. (1953b). Psychosomatic aspects of premenstrual tension syndrome. Journal of Mental Science, 99, 62-73.

Reid, R.L. (1985). Premenstrual syndrome. Current Problems in Obstetrics, Gynecology, and Infertility, 8(2), 4-57.

Reid, R. L., Greenaway-Coates, A. & Hahn, P. (1986). Oral glucose tolerance during the menstrual cycle in normal women and women with alleged premenstrual "hypoglycemic" attacks: Effects of naloxone. Journal of Clinical Endocrinology and Metabolism, 62, 1167-1171.

Reid, R. L., & Yen, S. S. C. (1981). Premenstrual syndrome. American Journal of Obstetrics and Gynecology, 139, 85-104.

Rosseinsky, D. R., & Hall, P. G. (1974). An evolutionary theory of premenstrual tension. Lancet, 2, 1024.

Rossi, A. (1980). Mood cycles by menstrual month and social week. In A. Dan, E. A. Graham, & C. P. Beecher (Eds.), The menstrual cycle (pp. 56-71). New York: Springer.

Roy-Byrne, P., Rubinow, D. R., Hoban, M. C., Parry, B. L., Rosenthal, N. E., Nurnberger, J. I., & Byrnes, S. (1986). Premenstrual changes: A comparison of five populations. Psychiatry Research, 17, 77-85.

Rubinow, D. R., & Roy-Byrne, P. (1984). Premenstrual syndromes: Overview from a methodological perspective. American Journal of Psychiatry, 141, 163-172.

Rubinow, D. R., Roy-Byrne, P., Hoban, M. C., Gold, P. W., & Post, R. M. (1984). Prospective assessment of menstrually-related mood disorders. American Journal of Psychiatry, 141, 684-686.

Rubinow, D. R., Roy-Byrne, P., Hoban, M. C., Grover, G. N., Stambler, N., & Post, R. M. (1986). Premenstrual mood changes. Journal of Affective Disorders, 10, 85-90.

Ruble, D. I. (1977). Premenstrual symptoms: A reinterpretation. Science, 197, 291-292.

Ruble, D. N., & Brooks-Gunn, J. (1979). Menstrual symptoms: A social cognition analysis. Journal of Behavioural Medicine, 2, 171-192.

Sampson, G. A. (1979). Premenstrual syndrome: A double-blind controlled trial of progesterone and placebo. British Journal of Psychiatry, 135, 209-215.

Sanders, D., Warner, P., Backstron, T., & Bancroft, J. (1983). Mood, sexuality, hormones, and the menstrual cycle. I Changes in mood and physical state: Description of subjects and methods. Psychosomatic Medicine, 45, 487-501.

Shainess, N. (1961). A re-evaluation of some aspects of femininity through a study of menstruation: A preliminary report. Comprehensive Psychiatry, 2, 20-26.

Siegel, J. M., Johnson, J. H., & Sarason, I. G. (1979). Life changes and menstrual discomfort. Journal of Human Stress, 5, 42-46.

Slade, P. (1984). Premenstrual emotional changes in normal women: Fact or fiction? Journal of Psychosomatic Research, 28, 1-7.

Slade, S., & Jenner, F. A. (1979). Autonomic activity in subjects reporting changes in affect in the menstrual cycle. British Journal of Social and Clinical Psychology, 18, 135-136.

Sommer, B. (1980). Models of menstrual stress. In A. Dan, E. A. Graham, & C. P. Beecher (Eds.), The menstrual cycle (pp. 26-44). New York: Springer.

Sommer, B. (1985). How does menstruation affect cognitive competence and psychophysiological response? In S. Golub (Ed.), Lifting the curse of menstruation (pp. 53-86). New York: Harrington Park.

Southam, A. L., & Gonzaga, F. P. (1965). Systemic changes during the menstrual cycle. American Journal of Obstetrics and Gynecology, 91, 142-165.

Spielberger, C. D., Gorsuch, R. L., & Lushene, R. E. (1970). Manual for the State-Trait Inventory. Palo Alto, CA: Consulting Psychologists' Press.

Spitzer, R. L., Endicott, J., & Robins, E. (1978). Research Diagnostic Criteria. Archives of General Psychiatry, 35, 773-782.

Steiner, M., & Carroll, B. J. (1977). The psychobiology of premenstrual dysphoria: A review of theories and treatments. Psychoneuroendocrinology, 2, 321-335.

Steiner, M., Haskett, R. F., & Carroll, B. J. (1980). Premenstrual tension syndrome: The development of research diagnostic criteria. Acta Psychiatrica Scandanavica, 62, 177-190.

Steiner, M., Haskett, R. F., Carroll, B. J., Hays, S. E., & Rubin, R. T. (1984a). Circadian hormone secretory profiles in women with severe premenstrual tension syndrome. British Journal of Obstetrics and Gynaecology, 91, 466-471.

Steiner, M., Haskett, R. F., Carroll, B. J., Hays, S. E., & Rubin. R. T. (1984b). Plasma prolactin and severe premenstrual tension. Psychoneuroendocrinology, 9, 29-35.

Stout, A. L., Steege, J. F., Blazer, D. G., & George, L. K. (1986). Comparison of lifetime psychiatric diagnoses in premenstrual syndrome clinic and community samples. Journal of Nervous and Mental Disease, 174, 517-522.

Taylor, J. W. (1979). Psychological factors in the aetiology of premenstrual symptoms. Australian and New Zealand Journal of Psychiatry, 13, 35-41.

Toth, E., Delaney, J., & Lupton, M. J. (1981). The menstruating woman in the popular imagination. In P. Kommenich, M. McSweeney, J. Noack, & N. Elder (Eds.), The menstrual cycle (pp. 104-113). New York, NY: Springer.

Watts, S., Dennerstein, L., & Horne, D. (1980). The premenstrual syndrome. Journal of Affective Disorders, 2, 257-266.

Wetzel, R. D., Reich, T., McClure, J. N., & Wald, J. A. (1975). Premenstrual affective syndrome and affective disorders. British Journal of Psychiatry, 127, 219-221.

Wilcoxon, L. A., Schroder, S. L., & Sherif, C. W. (1976). Daily-self reports on activities, life events, moods, and somatic changes during the menstrual cycle. Psychosomatic Medicine, 38, 399-417.

Winston, F. (1973). Oral contraceptives, pyridoxine and depression. American Journal of Psychiatry, 130, 1217-1221.

Woods, N. F. (1985). Relationship of somatization and stress to perimenstrual symptoms, disability and menstrual attitudes. Nursing Research, 34, 145-149.

Woods, N. F., Dery, G. K., & Most, A. (1982a). Recollections of menarche, current menstrual attitudes and perimenstrual symptoms. Psychosomatic Medicine, 44, 285-293.

Woods, N. F., Dery, G. K., & Most, A. (1982b). Stressful life events and perimenstrual symptoms. Journal of Human Stress, 8, 23-31.

Woods, N. F., Most, A., & Dery, G. K. (1982). Prevalence of perimenstrual symptoms. American Journal of Public Health, 72, 1257-1263.

Appendix

SUBJECT DATA FORM (SDF)

Part I

Name _____ I.D. ___ ___ ___

Telephone No. (_____) _____-_____

Age _____ Sex _____

Marital Status: Single _____ Married _____ Partner _____ Other _____

Age: below 30 _____ 30-35 _____ 35-40 _____

No. of children _____

Contraceptive Pill use (if female) Yes _____ No _____

Occupation _____

Occupation of Spouse/Partner _____

Years of Schooling: (1) 15+ years (2) 15 years (3) 12-14 years

(4) 12-14 years (5) 10-12 years (6) 7-9 years (7) 6 years or less

==========

SUBJECT DATA FORM (SDF)

Part II

1) Are your menstrual periods regular? Yes _____ No _____.

2) How long is it from the 1st day of one period to the 1st day of the next?

Length _____

3) How long does your menstrual period last? Length _____

4) What was the date of the 1st day of your last menstrual period?

Day _____ Month _____

For data analysis only:

Cycle phase on contact: _____

Dates for assessment : From _____, to _____

SUBJECT DATA FORM (SDF)

Part III

1) Would you say that your general health is good, fair, or poor?

Good _____ Fair _____ Poor _____

2) When did you last see your doctor for your health? _____

3) Are you on medication now? Yes _____ No _____

4) Have you had any illnesses except for common colds, etc., in the past three months?

Yes _____ No _____

5) Have you lost any work time through sickness lately?

Yes _____ No _____

6) Is there anything your health stops you from doing now?

_____

7) Have you had any accidents in the past three months?

Yes _____ No _____

8) Have you had any hospitalizations in the past three months?

Yes _____ No _____

in the past year?

Yes _____ No _____

in the past 5 years?

Yes _____ No _____

9) Have you had any long hospitalizations (3+ weeks) over the past 5 years?

Yes _____ No _____

10) Have you visited a specialist doctor recently?

Yes _____ No _____

PSYCHOLOGICAL PROFILES OF WOMEN WITH PREMENSTRUAL COMPLAINT

INVESTIGATORS: Dr. E. E. Fox, Department of Education Psychology
Dr. D. C. Cumming, Department of Obstetrics and Gynecology

Dr. E. E. Fox and Dr. David Cumming are trying to obtain some information concerning the symptoms which many women experience during the menstrual cycle. I understand that the investigation will involve completing a series of questionnaires related to how I am feeling at the time of testing and to life stresses I may have experienced. I understand that some of the questions are of a very personal nature.

The questionnaires will take approximately one hour to complete. The answers given to the questions are considered confidential and identifying information will not be given to any party other than the investigators and their assistants without my consent. Although information from this study may be published, no identifying information will be given in any publication.

The investigators will answer any enquiries concerning the procedures to make sure that I fully understand them. I understand that I may decline to enter the study or withdraw from the investigation AT ANY TIME without affecting the future care that I may receive.

Signature of subject _____ Date signed _____

Signature of witness _____

The person who may be contacted about the research is Dr. David Cumming at 432-6722.

PREMENSTRUAL ASSESSMENT FORM
(PAF)

Uriel Halbraich, M.D., Jean Endicott, Ph.D., and Sybil Schacht, M.S.W.

This form is used to describe changes which may occur during the premenstrual period.
Instructions are on page 2.

Card No. ____ [1-2] I.D. No.: ___ ___ ___ ___ ___ ___ ___ ___ [3 4 5 6 7 8 9 10] Study No.: ___ ___ [11 12] Date: ___ ___ / ___ ___ / ___ ___ [13 14 15 16 17 18]

Name or Initials: _____ Age: ___ ___ [19 20]

Education: (1) 15+ yrs, (2) 15 yrs, (3) 12-14 yrs, (5) 10-12 yrs, (6) 7-9 yrs, (7) 6 yrs or less [21]

Degrees: _____

Occupation: _____
[22] (specify title, type of work, size of business, etc.)

Education of husband/mate: _____ [23] (use education code above) Occupation of husband/mate: _____ [24] (specify)

The period of blood flow is called the menstrual period. Physical, behavioral, and mood changes often take place before the menstrual period. The changes may be either positive or negative. The days before the menstrual period on which noticeable changes take place are referred to as the premenstrual period.

Average number of days of menstrual cycle, i.e. from the start of one menstrual period to the start of the next ___ days [25-26]

If irregular, i.e. the number of days varies greatly, what is the range? ranges from _____ [27-28] to _____ [29-30] days.

If menstrual cycle is less than 21 days, reason if known: _____

If menstrual cycle is more than 38 days, reason if known: _____

Average duration of premenstrual period _____ [31-32] days. Average duration of blood flow _____ [33-34] days.

Has had a menstrual period during past 3 months: 1-No 2-Yes [35]. If yes, note current phase of menstrual cycle: [36]

1 - During premenstrual period. 2 - During blood flow. 3 - During week after end of blood flow. 4 - Any other week.

Age at first menses: _____ [37-38] Number of children: _____ [39-40] Number of miscarriages/abortions: _____ [41-42]

Do you have mittelschmerz (pain in the abdomen in the middle of menstrual cycle)? 1 - No 2 - Yes [43]

Special Conditions Present During Past Three Months

Dysmenorrhea (cramps, pain when menstruating during past three periods): 1 - No 2 - Yes (describe) _____ [44]

Endometriosis (diagnosed by doctor): 1 - No 2 - Yes (describe) _____ [45]

Have been taking birth control pills during past three cycles: 1 - No 2 - Yes (specify type, total time using) _____ [46]

Have had intra-uterine device during past three cycles: 1 - No 2 - Yes (specify type, total time using) _____ [47]

All information contained on this form and data summarized from it will be kept confidential.
Any written or verbal reports will be done in a way which precludes identification of individuals.

Have used medication/home remedies to "treat" premenstrual changes during past three cycles: 1 - No 2 - Yes (specify [48]
type, reason): _____

Have used medication for other reason during last three cycles: 1 - No 2 - Yes (specify type, reason, total time [49]
using): _____

Are you currently pregnant: 1 No 2 Yes (specify) ____ months
[50] [51]

Are you post menopausal: 1 - No 2 - Yes (how long) _____ years, _____ months
[52] [53-54] [55-56]

Have not menstruated the past three months for some other reason: 1 - No 2 - Yes (specify reason) _____
[57]

Do you have any medical disorder[s] present over the past three months: 1 - No 2 - Yes (specify) _____
[58]

INSTRUCTIONS

Please focus on the physical, behavioral and mood changes which have taken place during your past three premenstrual periods, even if the changes did not last throughout the entire premenstrual period.

The premenstrual period may range from one to fourteen days. Each woman should determine the duration of her premenstrual period using these factors as guides. Physical, behavioral, and mood changes are considered to be part of the premenstrual period if:

(a) they appear or change during the premenstrual period;
(b) they do not exist in the same form or severity immediately prior to the premenstrual period;
(c) they disappear or return to usual state during the full flow of menses.

Think about the changes which you experience premenstrually. Then consider each item and decide whether it describes new condition or change which usually has occurred during your last three premenstrual periods. Circle the appropriate number to indicate the severity of change from your usual self:

For example, you may become anxious premenstrually OR if you are mildly anxious most of the time, the anxiety may become more severe during the premenstrual period. Both types of change should be noted.

DEFINITIONS OF THE RATINGS OF SEVERITY OF CHANGE FROM USUAL NONPREMENSTRUAL STATE

1 - Not applicable, not present at all, or no change from usual level

2 - Minimal Change (only slightly apparent to you, others would probably not be aware of change).

3 - Mild Change (definitely apparent to you and perhaps to others who know you well).

4 - Moderate Change (clearly apparent to you and/or others who know you well).

5 - Severe Change (very apparent to you and/or others who know you well).

6 - Extreme Change (the degree of change in severity is so different from your usual state that it is very apparent to you OR even people who do not know you well might notice).

PAF

1 - Not applicable, not present at all, or no change from usual level, 2 - Minimal change,
3 - Mild change, 4 - Moderate change, 5 - Severe change, 6 - Extreme change

Changes Present During Premenstrual Period	Usual Level of Change During Last 3 Premenstrual Periods						
Feel sad or blue	1	2	3	4	5	6	[265]
Have tired legs (weak, sore, tremble)	1	2	3	4	5	6	[266]
Tend to have backaches, joint and muscle pains or stiffness	1	2	3	4	5	6	[267]
Family or friends know "she is in one or her moods today"	1	2	3	4	5	6	[268]
Feel "at war" on awakening or have complaints or outbursts about old irritants	1	2	3	4	5	6	[269]
Act spiteful	1	2	3	4	5	6	[270]
Feel lonely	1	2	3	4	5	6	[271]
Urinate less frequently or in lesser amounts	1	2	3	4	5	6	[272]
Have weight gain	1	2	3	4	5	6	[273]
Tend to be intolerant or impatient or to lose the ability to respond to or understand the faults, needs or errors of others	1	2	3	4	5	6	[274]
Tend to be overtalkative	1	2	3	4	5	6	[275]
Have relatively steady abdominal heaviness, discomfort or pain	1	2	3	4	5	6	[276]
Have increased sexual activity or interest (fantasy, with self, with others)	1	2	3	4	5	6	[277]
Have trouble sleeping	1	2	3	4	5	6	[278]
Check, if you wake early in the morning and can't get back to sleep	____						[314]
Have intermittent pain or cramps in the abdomen	1	2	3	4	5	6	[315]
Have a decrease on self-esteem (i.e., don't feel good about self or feel a failure)	1	2	3	4	5	6	[316]
Tend to blame others for problems (personal, at home, work, school, etc.)	1	2	3	4	5	6	[317]
Have increase in activity, organization, efficiency, or involvement socially at home or work	1	2	3	4	5	6	[318]
Tend to brood over unpleasant events	1	2	3	4	5	6	[319]
Have skin problems such as acne, pimples, etc	1	2	3	4	5	6	[320]
Have edema, swelling, puffiness, or "water retention"	1	2	3	4	5	6	[321]
Stay at home more	1	2	3	4	5	6	[322]
Have less sexual interest or activity (fantasy, self, others)	1	2	3	4	5	6	[323]
Tend to avoid social activities	1	2	3	4	5	6	[324]
Feel bloated	1	2	3	4	5	6	[325]

PAF

1 - Not applicable, not present at all, or no change from usual level, 2 - Minimal change,
3 - Mild change, 4 - Moderate change, 5 - Severe change, 6 - Extreme change

Changes Present During Premenstrual Period	Usual Level of Change During Last 3 Premenstrual Periods	
Feel dissatisfied with personal appearance	1 2 3 4 5 6	[239]
Become violent with people or things (e.g., deliberately break things, hit someone)	1 2 3 4 5 6	[240]
Take naps during the day or have an overwhelming desire to do so	1 2 3 4 5 6	[241]
Feel sense of unreality, like in a dream, unreal, etc	1 2 3 4 5 6	[242]
Feel pounding of heart or have rapid heartbeat	1 2 3 4 5 6	[243]
Get more enjoyment or excitement out of little things	1 2 3 4 5 6	[244]
Have difficulty concentrating	1 2 3 4 5 6	[245]
Feel confused	1 2 3 4 5 6	[246]
Have lowered judgment (i.e., realize judgment was less good than usual when looking back on decisions made during premenstrual period)	1 2 3 4 5 6	[247]
Feel passive, want others to make decisions, to take charge, etc	1 2 3 4 5 6	[248]
Have an increased feeling of well being	1 2 3 4 5 6	[249]
Have a lack of self control	1 2 3 4 5 6	[250]
Tend to become more childlike	1 2 3 4 5 6	[251]
Tend to feel or be tearful, weep, or cry	1 2 3 4 5 6	[252]
Feel need to urinate more frequently or have an increased amount of urine	1 2 3 4 5 6	[253]
Become constipated	1 2 3 4 5 6	[254]
Tend to be self-indulgent in use of time, spending money, eating, etc	1 2 3 4 5 6	[255]
Have episodes of impulsive behavior	1 2 3 4 5 6	[256]
Tend to smoke more, drink more alcohol or use "drugs of abuse" (e.g., "pot," "speed," etc.) (specify) _____	1 2 3 4 5 6	[257]
Feel under stress	1 2 3 4 5 6	[258]
Pick at, bite or scratch skin, or bite fingernails	1 2 3 4 5 6	[259]
Have mood swings from high to low or low to high	1 2 3 4 5 6	[260]
Tend to become "hysterical" if something upsets you	1 2 3 4 5 6	[261]
Have guilt feelings	1 2 3 4 5 6	[262]
Feel "empty"	1 2 3 4 5 6	[263]
Have outbursts of "irritability" or bad temper	1 2 3 4 5 6	[264]

1 - Not applicable, not present at all, or no change from usual level, 2 - Minimal change,
3 - Mild change, 4 - Moderate change, 5 - Severe change, 6 - Extreme change

Changes Present During Premenstrual Period	Usual Level of Change During Last 3 Premenstrual Periods	
Have rapid changes in mood (e.g., laughing, crying, angry, happy, etc.) all within the same day	1 2 3 4 5 6	[215]
Have decreased energy or tend to fatigue easily	1 2 3 4 5 6	[216]
Have decreased ability to coordinate fine movements, poor motor coordination or clumsiness	1 2 3 4 5 6	[217]
Feel anxious or more anxious	1 2 3 4 5 6	[218]
Sleep too much or have difficulty getting up in the morning or from naps	1 2 3 4 5 6	[219]
Have a feeling of malaise (i.e., general, non-specific bad feeling or vague sense of mental or physical ill-health	1 2 3 4 5 6	[220]
Feel jittery or restless	1 2 3 4 5 6	[221]
Have loss of appetite	1 2 3 4 5 6	[222]
Have pain, tenderness, enlargement, or swelling or breasts	1 2 3 4 5 6	[223]
Have headaches or migraines	1 2 3 4 5 6	[224]
Be more easily distracted (i.e., attention shifts easily and rapidly)	1 2 3 4 5 6	[225]
Tend to have accidents, fall, cut self, or break things unintentionally	1 2 3 4 5 6	[226]
Have nausea or vomiting	1 2 3 4 5 6	[227]
Show physical agitation (e.g., fidgeting, hand wringing, pacing, can't sit still)	1 2 3 4 5 6	[228]
Have feelings of weakness	1 2 3 4 5 6	[229]
Feel that you just "can't cope" or are overwhelmed by ordinary demands	1 2 3 4 5 6	[230]
Feel insecure	1 2 3 4 5 6	[231]
Have "flare-ups" of allergy, breathing difficulties, stuffy feeling, or watery discharge from the nose (specify) _____	1 2 3 4 5 6	[232]
Feel depressed	1 2 3 4 5 6	[233]
Have periods of dizziness, faintness, vertigo (room spinning), ringing in the ears, numbness, tingling of skin, trembling, lightheadedness (specify) _____	1 2 3 4 5 6	[234]
Tend to "nag" or quarrel over unimportant issues	1 2 3 4 5 6	[235]
Think of what it would be like to do something to self, like crash the car, wish to go to sleep and not wake up, or have thoughts of death or suicide	1 2 3 4 5 6	[236]
Feel less desire to talk or move about (it takes an effort to do so)	1 2 3 4 5 6	[237]
Become more forgetful	1 2 3 4 5 6	[238]

PAF

1 - Not applicable, not present at all, or no change from usual level, 2 - Minimal change,
3 - Mild change, 4 - Moderate change, 5 - Severe change, 6 - Extreme change

Changes Present During Premenstrual Period	Usual Level of Change During Last 3 Premenstrual Periods	
Have lowered performance, output, efficiency or ease, in tasks at work, at home, or with hobbies, etc.	1 2 3 4 5 6	[326]
Miss time at work because of premenstrual changes	1 2 3 4 5 6	[327]
Want to be alone	1 2 3 4 5 6	[328]
Feel a lack of inspiration and creativity	1 2 3 4 5 6	[329]
Crave specific foods (sweets, bread, chocolate, pickles, etc) (specify) _____	1 2 3 4 5 6	[330]
Have an increase in appetite or tend to eat more	1 2 3 4 5 6	[331]
Feel worse in morning	1 2 3 4 5 6	[332]
Pay less attention to physical appearance	1 2 3 4 5 6	[333]
Feel cold and/or more sensitive to temperature change	1 2 3 4 5 6	[334]
Have bursts of energy or feel more energetic	1 2 3 4 5 6	[335]
Become more sensitive to, or intolerant of personal rejection of self or one's work	1 2 3 4 5 6	[336]
Feel more affectionate	1 2 3 4 5 6	[337]
Tend to seek advice more often, or about simple matters	1 2 3 4 5 6	[338]
Have pessimistic outlook	1 2 3 4 5 6	[339]
Drink more coffee, tea, or cold drinks with caffeine (cola, rootbeer, etc)	1 2 3 4 5 6	[340]
Feel pain or discomfort during intercourse	1 2 3 4 5 6	[341]
Do less housework (cleaning, care of clothes, etc.)	1 2 3 4 5 6	[342]
Spend less time at leisure activities (hobbies, TV, reading)	1 2 3 4 5 6	[343]
Have "flare up" or appearance of cold sores, diarrhea, belching, spontaneous bruises, varicose veins, chest pain, hemorrhoids, numbing, tingling, epilepsy ("fits"), sensitivity of skin to sun (specify) _____	1 2 3 4 5 6	[344]
Have an increase in eye problems or changes in vision (e.g., sty, redness, watering, mistiness, discomfort, sensitivity to light) (specify) _____	1 2 3 4 5 6	[345]

[346-347] skip

In order to obtain a good comparison of your premenstrual state, as compared to your usual state, it would be helpful to have a narrative description of the differences, if any, between these two times. [348]

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THE GENERAL HEALTH QUESTIONNAIRE
(60-ITEM VERSION)

Please read this carefully:

We should like to know if you have had any medical complaints, and how your health has been in general, over the past few weeks. Please answer ALL the questions on the following pages simply by underlining the answer which you think most nearly applies to you. Remember that we want to know about present and recent complaints, not those that you had in the past.

It is important that you try to answer ALL the questions.

Thank you very much for your co-operation.

HAVE YOU RECENTLY:

1. - been feeling perfectly well and in good health?	Better than usual	Same as usual	Worse than usual	Much worse than usual
2. - been feeling in need of some medicine to pick you up?	Not at all	No more than usual	Rather more than usual	Much more than usual
3. - been feeling run down and out of sorts?	Not at all	No more than usual	Rather more than usual	Much more than usual
4. - felt that you are ill?	Not at all	No more than usual	Rather more than usual	Much more than usual
5. - been getting any pains in your head?	Not at all	No more than usual	Rather more than usual	Much more than usual
6. - been getting a feeling of tightness or pressure in your head?	Not at all	No more than usual	Rather more than usual	Much more than usual
7. - been able to concentrate on whatever you're doing?	Better than usual	Same as usual	Less than usual	Much less than usual
8. - been afraid that you were going to collapse in a public place?	Not at all	No more than usual	Rather more than usual	Much more than usual
9. - been having hot or cold spells?	Not at all	No more than usual	Rather more than usual	Much more than usual
10. - been perspiring (sweating) a lot?	Not at all	No more than usual	Rather more than usual	Much more than usual
11. - found yourself waking early and unable to get back to sleep?	Not at all	No more than usual	Rather more than usual	Much more than usual
12. - been getting up feeling your sleep hasn't refreshed you?	Not at all	No more than usual	Rather more than usual	Much more than usual
13. - been feeling too tired and exhausted even to eat?	Not at all	No more than usual	Rather more than usual	Much more than usual
14. - lost much sleep over worry?	Not at all	No more than usual	Rather more than usual	Much more than usual
15. - been feeling mentally alert and wide awake?	Better than usual	Same as usual	Less alert than usual	Much less alert
16. - been feeling full of energy?	Better than usual	Same as usual	Less energy than usual	Much less energetic
17. - had difficulty in getting off to sleep?	Not at all	No more than usual	Rather more than usual	Much more than usual
18. - had difficulty in staying asleep?	Not at all	No more than usual	Rather more than usual	Much more than usual

19. - been having frightening or unpleasant dreams?	Not at all	No more than usual	Rather more than usual	Much more than usual
20. - been having restless, disturbed nights?	Not at all	No more than usual	Rather more than usual	Much more than usual
21. - been managing to keep yourself busy and occupied?	More so than usual	Same as usual	Rather less than usual	Much less than usual
22. - been taking longer over the things you do?	Quicker than usual	Same as usual	Longer than usual	Much longer than usual
23. - tended to lose interest in your ordinary activities?	Not at all	No more than usual	Rather more than usual	Much more than usual
24. - been losing interest in your personal appearance?	Not at all	No more than usual	Rather more than usual	Much more than usual
25. - been taking less trouble with your clothes?	More trouble than usual	About same as usual	Less trouble than usual	Much less trouble
26. - been getting out of the house as much as usual?	More than usual	Same as usual	Less than usual	Much less than usual
27. - been managing as well as most people would in your shoes?	Better than most	About the same	Rather less well	Much less well
28. - felt on the whole you were doing things well?	Better than usual	About the same	Less well than usual	Much less well
29. - been late getting to work, or getting started on your housework?	Not at all	No later than usual	Rather later than usual	Much later than usual
30. - been satisfied with the way you've carried out your task?	More satisfied	About same as usual	Less satisfied than usual	Much less satisfied
31. - been able to feel warmth and affection for those near to you?	Better than usual	About same as usual	Less well than usual	Much less well
32. - been finding it easy to get on with other people?	Better than usual	About same as usual	Less well than usual	Much less well
33. - spent much time chatting with people?	More time than usual	About same as usual	Less than usual	Much less than usual
34. - kept feeling afraid to say anything to people in case you made a fool of yourself?	Not at all	No more than usual	Rather more than usual	Much more than usual
35. - felt that you are playing a useful part in things?	More so than usual	Same as usual	Less useful than usual	Much less useful
36. - felt capable of making decisions about things?	More so than usual	Same as usual	Less so than usual	Much less capable
37. - felt you're just not able to make a start on anything?	Not at all	No more than usual	Rather more than usual	Much more than usual
38. - felt yourself dreading everything that you have to do?	Not at all	No more than usual	Rather more than usual	Much more than usual

39. - felt constantly under strain?	Not at all	No more than usual	Rather more than usual	Much more than usual
40. - felt you couldn't overcome your difficulties?	Not at all	No more than usual	Rather more than usual	Much more than usual
41. - been finding life a struggle all the time?	Not at all	No more than usual	Rather more than usual	Much more than usual
42. - been able to enjoy your normal day-to-day activities?	More so than usual	Same as usual	Less so than usual	Much less than usual
43. - been taking things hard?	Not at all	No more than usual	Rather more than usual	Much more than usual
44. - been getting edgy and bad-tempered?	Not at all	No more than usual	Rather more than usual	Much more than usual
45. - been getting scared or panicky for no good reason?	Not at all	No more than usual	Rather more than usual	Much more than usual
46. - been able to face up to your problems?	More so than usual	Same as usual	Less able than usual	Much less than usual
47. - found everything getting too much for you?	Not at all	No more than usual	Rather more than usual	Much more than usual
48. - had the feeling that people were looking at you?	Not at all	No more than usual	Rather more than usual	Much more than usual
49. - been feeling unhappy and depressed?	Not at all	No more than usual	Rather more than usual	Much more than usual
50. - been losing confidence in yourself?	Not at all	No more than usual	Rather more than usual	Much more than usual
51. - been thinking of yourself as a worthless person?	Not at all	No more than usual	Rather more than usual	Much more than usual
52. - felt that life is entirely hopeless?	Not at all	No more than usual	Rather more than usual	Much more than usual
53. - been feeling hopeful about your own future?	More so than usual	About same as usual	Less so than usual	Much less hopeful
54. - been feeling reasonably happy, all things considered?	More so than usual	About same as usual	Less so than usual	Much less than usual
55. - been feeling nervous and up tight?	Not at all	No more than usual	Rather more than usual	Much more than usual
56. - felt that life isn't worth living?	Not at all	No more than usual	Rather more than usual	Much more than usual
57. - thought of the possibility that you might do away with yourself?	Definitely not	I don't think so	Has crossed my mind	Definitely have
58. - found at times you couldn't do anything because your nerves were too bad?	Not at all	No more than usual	Rather more than usual	Much more than usual
59. - found yourself wishing you were dead and away from it all?	Not at all	No more than usual	Rather more than usual	Much more than usual
60. - found that the idea of taking your own life kept coming into your mind?	Definitely not	I don't think so	Has crossed my mind	Definitely has