PREMENSTRUAL SYNDROME IN A GROUP OF CAPE TOWN WOMEN

This dissertation was submitted by
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This work is dedicated to
Frans
for his unwavering support and belief in me,

to my parents
Garth and Rene' Davies
for the wonderful gift of a university education,

and to my parents-in-law
Johann and Peggy Pienaar
for their consistent encouragement

I, Catherine Ann Pienaar, hereby declare that the work on which this thesis is based is original (except where acknowledgements indicate otherwise) and that neither the whole work nor any part of it has been, is being, or is to be submitted for another degree in this or any other University.

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8.11.1990

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(DATE)

ABSTRACT

The PMS is a condition with major social, economic and health implications. There has been no published work on the prevalence of the PMS in South Africa.

Due to the multi-ethnic and multi-cultural nature of the population of Cape Town, a study was designed incorporating a broad cross-section of women. The study had four aims, the first being to establish the prevalence of the PMS in a group of South African women. Secondly the aim was to establish the prevalence of the condition in three ethnic groups, as well as the prevalence in three broad socio-economic groups. Finally, an attempt was made to differentiate between groups with respect to premenstrual symptomatology.

The operational hypothesis was that when controlling for social class, ethnicity was not expected to alter the prevalence of PMS, although there may be differences in reported symptomatology between groups of subjects.

The prevalence of PMS in the group of women studied was 25.4%. There were significantly more Coloured women diagnosed as having PMS, than Black or White women. In addition, there was a trend towards fewer women from social classes III and IV/V being diagnosed as having PMS (compared to social class I/II). When the social class groups were compared, statistical analysis revealed that Coloured social class I/II women had a significantly higher prevalence of the PMS than their Black and White counterparts. In comparing the social class IV/V women, there was not a significantly different prevalence of the PMS between Coloured and Black women (there were too few White women in this group for analysis).

Various factors were assessed for a possible association with a diagnosis of PMS, and the following factors showed a significant association with the diagnosis of PMS, as used in this study: being aged 25-29 as opposed to 18-24 years; earning more then R2500 per month (as opposed to less than R1000); complaining of menorrhagia (heavy menstrual bleeding); describing financial stress as severe or disabling; describing work-related stress as severe or disabling; using no contraception (as opposed to any form).

Of the 35 symptoms assessed in this study, the differences amongst the ethnic groups were not significant for 25 symptoms. This study demonstrated that there are far more similarities in premenstrual symptomatology between the three ethnic groups than there are differences.

Help-seeking behaviour was evaluated, and it was revealed that of 101 women perceiving themselves as having had PMS in the past three months, only 40 had ever been for medical help regarding their PMS. When the remainder of women were asked why they "had not gone" for treatment, proportionally more Black women than Coloured or White women said they felt it was normal to feel like that before a menstrual period. The author commented that in spite of the small numbers in those groups, that there may be an important attitudinal difference present, in how the different groups perceive their symptoms.

As the first PMS prevalence in South Africa, this work may be seen as a starting point for future research in this field.

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LIST OF ABBREVIATIONS

The following abbreviations were used in the text:

PMS	- Premenstrual Syndrome
MDQ	- Menstrual Distress Questionnaire
Q	- Question
CASS	- Centre for Applied Social Sciences (Natal) - refers to classification system used
SAS	- Accepted abbreviation for statistical analysis programme used in data analysis
REG	- Regular (see Table 4.1)
m	- menses (see Table 4.4)
Gyn	- Gynaecological (see Table 4.4)
O.C	- Oral contraceptive pill (see Table 4.5)
Mono	- Monophasic (oral contraceptive pill)
Tri	- Triphasic
Prog	- Progesterone
Bi	- Biphasic
Depo inj	- Depo Provera
Nur Ist	- Nur Isterate
R-ships	- Relationships (see Table 4.14)
Pol/Soc	- Political/Social
25%	- 25th percentile
MED	- Median score
75%	- 75th percentile
per	- Percentile
%	- Percentage
3m	- Three months

Chapter 1

INTRODUCTION

Premenstrual Syndrome has in the past few years, received increasing attention from the medical profession, womens' magazines and health literature (Collings 1989, Cabot 1989), and the legal world (Gise 1988). Researchers have endeavoured to link criminal (Morton 1953, Dalton 1964) and suicidal behaviour (Tonks 1968, Mac Kinnon et al 1959), as well as acute hospital admissions (Dalton 1964) and psychiatric admissions (Kramp 1965) to Premenstrual Syndrome (PMS). The findings of some of these studies have been severely criticized however, as the methodologies used were questionable. There have also been studies which have attempted to relate the exacerbation of underlying psychiatric conditions to premenstrual changes experienced by some women (Clare 1982, Rees 1953).

PMS may have economic implications in terms of reduced productivity. In the USA it was estimated that in 1969, absenteeism due to PMS cost the USA 5 billion dollars in lost productivity (Reid and Yen 1981). In Britain in 1969 it was reported that 120 million working days were lost annually as a result of menstrual distress - this covers both premenstrual and menstrual phases of the menstrual cycle (Wood et al 1979a).

While it is acknowledged that Premenstrual Syndrome occurs universally (Janiger 1972), few studies have attempted to evaluate the prevalence and symptomatology of PMS in a wide cross-section of women. Previous studies have often limited their samples to very specific groups such as nurses, nuns, prisoners, factory workers (Johnson 1988, Morton 1953, Tonks 1968, Bickers and Woods 1951), or clinic samples (Hargrove and Abraham 1982, Gunston 1986), and there have been a few population-based studies (Widholm and Kantero 1971, van Keep and Lehert 1981).

There is diversity of opinion regarding the prevalence, etiology and management of PMS and many criteria have been used in the diagnosis of PMS. Broadly speaking, the Premenstrual Syndrome is the occurrence of cyclical symptoms, both somatic and psychological, in the second half of the menstrual cycle, which are relieved at or shortly after the onset of menstruation.

The etiology of PMS remains to be established and numerous theories have been postulated. One of the earlier theories was that a progesterone insufficiency, either absolute or relative, leads to a relative excess of oestrogen (Dalton 1964) and results in PMS. A more recent hypothesis is that PMS results from B-Endorphin withdrawal, the severity of symptoms being inversely proportional to the magnitude of decline in the B-Endorphins (Halbreich and Endicott 1981, Gianni et al 1984). Abraham (1983) linked dietary factors to PMS, and described 4 subgroups of symptom complexes, each with different etiologies. Other theories have been suggested by Frank (1931), Reid and Yen (1983), and Janowsky (1973).

In view of the diversity of theories regarding the etiology of PMS, it is not surprising that no single treatment has consistently provided relief for the condition (Freed 1945, Dalton 1964, Stokes 1972, Robinson 1977, Clare 1979, Muse 1984, Gunston 1986, Watts 1987, Choung 1987, Messinis 1988). A further complicating factor is the marked placebo response which has been demonstrated in the treatment of PMS (Sampson and Prescott 1981, Magos et al 1986).

The term "Premenstrual tension" was first coined by Frank (1931), although long before that, the Romans described cyclical changes evident in women...

" ... Signs of impending menstruation: the menses are about to occur when a woman feels somewhat uneasy on walking, when a feeling of heaviness appears in the loins. Some develop a torpor, yawning and pandiculation, while others develop nausea and a loss of appetite ..." (Ricci 1950)

French Historian, Jules Michelet (1859) commented that "... for 15 to 20 days out of 28, woman is not only an invalid, but a wounded one." (Clare 1982)

Some of the earlier work on PMS involved the analysis of dreams in conjunction with cyclical changes (Benedek and Rubenstein 1939), and the recording by 167 women, of a 6-month daily log, in which psychological and subjective physical changes were recorded (Mc Cance et al 1937). In 1943, Southam and Gonzaga published a comprehensive report of the physical changes which occur premenstrually. In the USA, in 1951, Bickers and Woods established that of 1500 women in an industrial plant 36% sought some type of sedation in the premenstrual week.

PREVALENCE AND SYMPTOMATOLOGY

While numerous prevalence studies have been conducted, with both clinical and non-clinical populations, no such study has been published in South Africa before. The results of studies vary widely, and this may be attributed to the different methodologies employed in assessing PMS and its symptomatology, different inclusion criteria (including very select samples in many cases eg no hormonal contraception, no medication at all, a six-month history of both physical **and** psychological symptoms), and the fact that different definitions of PMS were used by the researchers involved.

It is important to distinguish between Premenstrual Syndrome, Premenstrual symptoms, and Premenstrual tension, which are sometimes used synonymously. Premenstrual Syndrome is a condition in which a women suffers severe or disabling cyclical symptoms which are debilitating and affect her socially, psychologically and economically. PMS consists of far more than the vague premenstrual symptoms which are normal physiological changes experienced by many women. A far smaller percentage of women have Premenstrual Syndrome than some studies may suggest (Brooks Gunn 1986). Premenstrual tension is a premenstrual symptom, but may also occur in women who have Premenstrual Syndrome.

Premenstrual **symptoms** occur universally with some 70-95% of women affected to some degree by physical or psychological symptoms (Lamb et al 1953, Ferguson and Vermillion 1957, van Keep and Lehert 1981, Andersch et al 1981, Martin et al 1983, Johnson 1988). However, only 3-10% of women are severely incapacitated by their symptoms (Andersch et al 1981, Woods et al 1982, Johnson 1988). The symptoms of Premenstrual Syndrome

Various methods of assessing the prevalence and symptomatology of PMS have been devised (Moos 1968, Taylor 1979, Steiner et al 1980, Halbreich et al 1982), but some studies failed to differentiate grades of symptom severity (Lamb 1953, Sutherland and Stewart 1965, Boyle 1987) which may have resulted in an overestimation of the prevalence of the condition (Brooks-Gunn 1986).

Over 150 somatic and psychological symptoms have been described as part of the Premenstrual Syndrome (Greene and Dalton 1953, Moos 1969,Robinson 1989). Breast tenderness is a commonly reported premenstrual symptom (Appleby 1960, Martin 1983), as well as weight gain, abdominal fullness and bloatedness (Lamb 1953, Bancroft and Backstrom, 1985, Coppen and Kessel 1963b). Despite reports on premenstrual weight gain, Faratian (1984) showed that there is a significant discrepancy between **perceived** and **actual body** size and weight premenstrually.

Irritability and depression, are two commonly reported psychological symptoms (Sutherland and Stewart 1965, Sheldrake and Cormack 1976, Martin et al 1983, Woods et al 1982, Stout et al 1986, Gunston 1986a), and feelings of tension premenstrually are also well-documented (Mukherjee 1954, Gunston 1986a).

Premenstrual changes in appetite have been reported, and both PMS and "non PMS" sufferers have shown significant premenstrual appetite increases (Both-Orthman et al 1988). These authors showed that appetite was highly correlated with self-ratings of mood in PMS sufferers. Dalvit (1981) showed that calory intake for the 10 days premenstrually, was higher than for the 10 days after the beginning of menstruation.

CROSS-CULTURAL AND CROSS-ETHNIC STUDIES

There are few studies specifically comparing ethnic and/or cultural differences in the prevalence and symptomatology of PMS, and most of these have been done by American researchers.

In Ferguson and Vermillion's 1957 study conducted in the U.S.A, 75 White women and 75 Black women were studied. The sample included a wide range of working women and the two groups of subjects were not matched for occupation. A very high percentage of both groups (White-92%, Black-91%) reported premenstrual symptoms. Abdominal distension was the most commonly reported symptom in both groups. Significantly more of the White women reported decreased alertness, depression, and tender and enlarged breasts, while more Black women reported complaints of premenstrual headache and increased appetite. A criticism of this study was that the authors used the terms premenstrual tension and Premenstrual Syndrome synonymously, and the prevalence figures quoted included **any** complaint of a symptom, as opposed to inclusion of only severe symptoms. The resulting prevalence figure was rather high.

The USA study, by Woods et al (1982a), was conducted on a target population of 5 neighbourhoods of a large south-eastern city. The sample of 179 subjects comprised 67% White and 33% Black women. Social class, which ranged from lower to upper middle class, was not clearly defined. The study was concerned with the prevalence of perimenstrual symptoms, but did differentiate menstrual from premenstrual phases for specific symptoms. The authors found Black women significantly less likely than White women to experience premenstrual crying and anxiety. Twelve percent of the sample rated premenstrual irritability as severe. The other common premenstrual symptoms were weight gain, skin disorders, headache, cramps, anxiety,

fatigue, painful breasts, swelling, mood swings, depression and tension.

Prevalence and symptomatology figures quoted in the study on 520 Conneticut women by Boyle et al (1987), included symptoms which were "... experienced just before **or** during menstruation...". Some women may have quoted symptoms which began at menstruation as opposed to in the premenstruum, and for this reason the results obtained were probably inflated. However, the author showed race to be a factor related to certain symptoms, and White women were more likely to present with premenstrual mood changes than Black women. The prevalence in this study ranged from 39% for breast swelling to 81% for premenstrual weight-gain. Failures of this study were that menstrual symptomatology was included as evidence of PMS, symptom severity was not rated, and the breakdown of ethnic groups not reported, in spite of the author finding ethnicity to be associated with the some premenstrual symptoms.

Stout et al (1986), using a representative, community-based sample, used an interview and the Premenstrual Assessment Form (PAF) to assess 321 Black women and 462 White women at the Duke University Medical Centre, North Carolina. There was no difference in the prevalence of PMS between Black and White women except for more reports of premenstrual food-cravings amongst the Black subjects. The women were asked to do retrospective ratings over the last 3 menstrual cycles. Irritability was found to be the commonest symptom, and the subjects rated themselves on a scale of 1 - 4 for severity.

The question of whether Black women employ different patterns of help-seeking behaviour or have a lower prevalence of PMS was raised by Stout, who noted that the county in which the study was conducted was 40% Black, yet almost all women seeking help from the clinic were White.

Johnson (1987), in a study of Iowa nursing graduates, noted that the likelihood of seeking help for PMS was directly related to the severity of symptoms experienced.

However, in his work on culture and symptoms, Zola (1966) stated that "... the very labelling of symptoms is a social process, and a socially conditioned selective process may be operating in what is brought for medical attention ...". Zola commented that this selective process rather that an etiological one may account for many epidemiological differences observed between and within societies. If a certain group does not recognize severe premenstrual changes as pathological, it would mean that women from that group with severe PMS may be less likely to seek medical help for their condition, than women from a group which recognizes Premenstrual Syndrome as a legitimate disease.

An interesting result from a study done in Israel by Most et al (1981), found that only 30% of women reported premenstrual symptoms. The authors point out that there are no Hebrew words for premenstrual syndrome, so it is not altogether surprising that so few Israeli women report premenstrual symptoms. In addition, they remark on the possibility that Israeli women may have a lower prevalence of premenstrual symptoms as a result of exceptionally high stress under which they have lived over the past 20 years, and do not experience events surrounding menstruation as stressful. Alternatively, they are not socialized into expecting distress to be associated with menstruation, therefore do not report symptoms as frequently or intensely as other women. This work supports the theory that cultural factors affect symptom reporting.

Janiger et al (1972) did a cross-cultural study to explore the possibility that the symptoms of PMS were a cultural variable. Different Culture groups were selected and studied and these included: Greek outpatients, Japanese students, Turkish outpatients, Nigerian students and Amerindians (Apache' Indians). Groups of American women (whether they were Caucasian or not was not stated) were included as controls. The respondents scored the severity of their symptoms "nil", "mild", "moderate", or "severe", and an average score for each group was calculated.

Lower abdominal pain was found to be the most distressing symptom. The author concluded that the main symptoms of the PMS are present in a wide range of cultural groups although frequency and severity varied between cultures. A few symptoms showed a marked variation between cultures, for example a very low incidence of breast symptoms in the Japanese group, and a high frequency of headaches in the Nigerian group. Janiger did not establish prevalence for PMS, as he felt an arbitrary definition of PMS would be applied. He felt that reports of individual symptoms would be of more value when comparing findings by other workers. In his study, the participating groups of women were not comparable as they were not representative of their culture group, but rather limited to co-operating groups. Janiger also found some translation difficulties, in spite of having seemingly well-prepared translators.

Cenac et al in Niger (1984), did a comparative study of 400 literate and illiterate women, aged between 14 and 30 years. There were no civil records from which to select the sample so women were recruited at social events like christenings. The literate group comprised students and civil servants. A single questionnaire was used, designed so that literate and illiterate women could be questioned.

The group was young in age as in that society it would be considered disrespectful for the interviewer to ask gynecological questions of women older than herself. In that culture marriage often precedes menarche', and pregnancy results in lactational amenorrhoea for at least 2 years, so the importance of psychological and cultural factors in PMS may be masked by the hormonal influences of the pregnancy-breast-feeding-pregnancy cycle.

Among the 400 women who participated , only 5% were asymptomatic, and 31% described socially debilitating severe symptoms. The symptoms most endorsed were breast tenderness, pelvic ache (not elucidated in the paper - presumably cramps or lower abdominal pain), nervousness and insomnia. Oedema, weight increase and other symptoms were seldom seen.

PMS was found with a significantly higher frequency among literate women (43%), than illiterate women (20%). Cenac states that the differences may be related to the fact that the illiterate, living in harder conditions, may be less apt to "listen to their bodies" and less able to express what they suffer.

The work of Janiger and Cenac supports the view that PMS is not limited to Westernized cultures, rather that it is universal, with some variation of symptoms between cultures.

In contrast to the findings of the previous two authors, Thomas Johnson (1987) described PMS as a Western Culture-specific disorder. "... PMS is a symbolic representation of conflicting societal expectations that women be both productive and reproductive. By simultaneously denying either alternative, PMS translates role conflict into a standardized cultural idiom..."

PSYCHOLOGICAL ASPECTS OF PMS

In attempting to establish the prevalence and symptomatology of PMS, both psycho-social and physiological factors should be taken into account (Smith 1976, Reid and Yen 1981, Gannon 1985). Psycho-social aspects relating to PMS are broad and the importance of psychological factors such as personality (Coppen and Kessel 1963a, Awaritefe et al 1980), and expectations (Brooks and Ruble 1977) on the prevalence of PMS, has in the last few years been more closely studied.

Rees (1953) in the UK, studied 145 women ranging from normal stable women to severely neurotic and emotionally unstable and maladjusted patients. He found 56.5% of women to have no significant symptoms of Premenstrual Syndrome, 24.8% moderate symptoms and 15.6% severe PMS. PMS existed more frequently in neurotic women than normal subjects, and there was a correlation between intensity of PMS and neurotic disposition.

However, some severely neurotic women do **not** have PMS, and some normal women do have PMS. Coppen and Kessel also found that premenstrual irritability, depression and tension were significantly correlated with neuroticism.

Neither Rees nor Coppen and Kessel gave a standardized definition of what neurosis was, nor details of how clinical information leading to a diagnosis of psychiatric ill-health was made. Clare (1982), found a significant and positive association between psychiatric ill-health and premenstrual complaints amongst patients from general medical practices. Other studies were made to explore the possible relationship between premenstrual symptoms and a general neurotic or complaining tendency (Levitt and Lubin 1967), and Stevenson et al (1983), showed that neuroticism scores were linked to premenstrual negative affect, pain, and water retention.

Attempts have been made to relate personality to PMS (Coppen and Kessel 1963a, Golub 1976, Awaritefe et al 1980). James and Pollitt (1974) showed that the tendency to develop PMS was related to obsessional and hysterical tendencies, rather than one specific personality type. They found that efforts to minimize the effects of the tendency to complain lent support to that conclusion.

Brooks and Ruble (1977), using a selected group of college women, examined attitudes and expectations concerning menstrually-related changes. They showed that college womens' beliefs about menstruation are complex, involving differential perceptions of physical versus psychological symptoms, and a variety of dimensions of menstrually-related attitudes.

CULTURAL FACTORS

Margaret Mead makes no mention of premenstrual phenomena in her classic study of Samoans. However, Chadwick's review (1932) vividly describes the influence of superstitions, customs and taboos on all aspects of women's life. Sociologists and Anthropologists have acknowledged how variables such as social class, economic position, "life events" and cultural beliefs and practices (Yap 1951, Helman 1984, Zola 1966) as well as social learning (Paige 1975), can be correlated to the incidence of certain diseases (Helman 1984).

Something which constitutes illness in one culture may be considered normal in another (Yap 1951). Zola (1966), points out that the perceived incidence of a disease in a particular community depends on 1) its actual incidence, and 2) the degree of recognition (by patients or doctors) as being something "abnormal". Eisenberg and Kleinman (1981) described how cultural differences can alter the expression of symptoms.

The role of traditional attitudes of women in relation to menstrual (Brattesani and Silverthorne (1978), and premenstrual symptomatology has been explored. Beck (1970) showed that high premenstrual scores on four out of six variables related to traditional attitudes towards a sex-role stereotype, suggesting that traditional attitudes may be linked to greater premenstrual distress.

OBJECTIVES

There has been no work published on the prevalence of PMS in South African women. Social class has been mentioned as a possible factor related to PMS (Boyle et al 1987). In the work to be presented here, the intention was to study subpopulations of Coloured, Black and White women from the spectrum of social classes. The universe from which the sample was selected, was that of two Cape Town universities.

Primarily, the aim was to establish the prevalence and symptomatology of PMS in a group of South African women, taking ethnic group and social class into account. In addition to demographic data, background variables (eg contraception), were assessed for their possible association with PMS prevalence. The role of perceived stress was assessed as a possible variable affecting the prevalence of PMS. Knowledge and perceptions about PMS, as well as help-seeking behaviour were also assessed. Once an overall prevalence for PMS was established, the sample would be stratified, and prevalence figures for broad ethnic groups, and social class subgroups would be compared. Symptomatology for each sub-group would also be analysed and compared.

The hypothesis on which this work has been based, is that in a broad cross-section of women, when controlling for social class, ethnicity will not be a variable affecting the prevalence of Premenstrual Syndrome. Possible differences in PMS prevalence may be secondary to social background and social learning, rather than ethnicity (Zola 1966). The expression of symptoms may differ between ethnic groups (Ferguson and Vermillion 1957).

While the prevalence is expected to be similar across the ethnic groups belonging to each social class, there may be some differences (both ethnic and social class) in terms of reported symptomatology. The criteria and definition for a PMS diagnosis are dealt with in the following chapter.

Chapter 2

SUBJECTS AND METHODS

In this chapter, the design of the study including the questionnaire, the selection of the sample, and the statistical analysis of the data are described. Problems regarding methodology of the study are discussed.

INTRODUCTION

The only published work on PMS in South Africa involved a clinical population in Cape Town (Gunston 1986 a, 1986b). The reason for selecting a university population for the present study, was that these women have access to both medical education and medical facilities, regardless of their background education; in addition both universities have women from the whole spectrum of social classes. The selected population was from the University of Cape Town (UCT) and the University of the Western Cape (UWC). The two universities are geographically close together and exposed to similar climatic conditions.

DEFINITION

There are many problematic issues regarding methodology in PMS research, the first and most fundamental being the lack of a widely accepted definition of PMS. For the purposes of this study, PMS is defined as the presence of cyclical physical or psychological symptoms, in the premenstrual phase of the cycle (up to 14 days before menstruation), which are relieved at or just after the onset of menstruation, with at least one week that is symptom free.

Various authors have proposed different definitions for the Syndrome, and apart from resulting in discrepancies in PMS prevalence rates, it has also made comparison of results from different studies difficult.

In the U.S.A in 1983, Abraham used the following definition: "Premenstrual Tension Syndrome is a symptom complex occurring during the luteal phase of the menstrual cycle, becoming progressively worse, interfering with familial, social, and work-related activities, and improving after the onset of menses".

Magos and Studd (1982) comprehensively defined PMS as "distressing physical, psychological and behavioural symptoms, not caused by an organic disease, which regularly recur during the same phase of each menstrual cycle and which significantly regress or disappear during the remainder of the cycle."

Dalton's definition (1964) was " the occurrence of symptoms in the premenstruum with the absence of symptoms in the post-menstruum."

This author stated that for the diagnosis of PMS to be made, the following criteria had to be fulfilled:

- symptoms exclusive to the second half of the cycle
- symptoms increase in severity as the cycle progresses
- there must be an absence of symptoms in the post-menstruum
- symptoms must have been present for at least three consecutive menstrual cycles

Dalton's definition does not allow for different patterns of symptom expression eg. premenstrual symptoms do not always increase in severity as the woman approaches menstruation. Symptoms may also appear at ovulation, regress and then reappear a few days before menstruation. In addition, some women have PMS for longer than just the second half of the menstrual cycle. These symptoms may last as long as 21 days out of a 28 day cycle.

In addition to the problems surrounding the definition of PMS, some workers proposed that PMS consists of more than one syndrome (Brooks Gunn 1986, Logue and Moos 1986, Steiner et al 1980). Authors have also attempted to classify premenstrual

symptoms into categories (Abraham 1983, Moos 1968), in order to establish an etiology for PMS. Reid (1983) commented on 4 different patterns of PMS and the importance of establishing that PMS is not merely an exacerbation of some chronic condition. He also mentioned that PMS sufferers should have a symptom-free interval following menstruation.

The symptom-free week is important, as it may distinguish PMS from other gynecological or psychiatric disorders (O'Brien 1987). There has been disagreement as to the duration of the premenstrual phase, with one author describing 7 4-day sectors

(Dalton 1964) and another referring to premenstrual, intermenstrual and menstrual phases of the menstrual cycle (Moos 1968).

There is argument as to when the precise premenstrual phase begins. In the work presented here, a subject was considered to be in the premenstrual phase of her menstrual cycle if she was within fourteen days of her next menstrual period. During the interview, the author established each subject's cycle length, by using a calendar.

CONSENT

The initial step in obtaining permission to proceed with this study was made by approaching the Ethics and Research Committee of the University of Cape Town Medical Faculty. the protocol and questionnaire were submitted for approval, and consent was given for the study to take place.
Following this, permission to gain access to staff and students of the University of Cape Town (UCT) and the University of the Western Cape (UWC) was obtained from UCT's Ethics for Researchers Committee, and the Executive Senate of UWC, in conjunction with the UWC Women's Group. In each instance the protocol and questionnaire were submitted for approval. Both Universities gave permission for staff and students to be included. Consent to approach certain workers was also obtained from one of the trade unions at UWC.

Individual consent by the randomly selected subjects was the final step preceding each interview, and every women approached was told about the study's aims and objectives, and asked whether she would be willing to participate. After verbal consent was given, the interview proceeded, which was in itself indicative of consent on the part of the subject.

SUBJECTS

Using a structured questionnaire (see Appendix 1), one-to-one interviews were conducted by the author on the target population. The subjects were randomly selected women from staff and student lists of the University of Cape Town and the University of the Western Cape, the lists having been obtained once consent for the study had been given by the respective Universities.

The sample population included women from all social classes, and contained groups classified by the State as "White", "Coloured" and "Black" women. White women are supposed to be of European descent, the so-called Coloured women are women of mixed blood, and may include indigenous groups or remnants thereof, of the Koi and San people. The Black women in the sample are indigenous to Africa, but not from one particular cultural, linguistic or political group (Sharp and Boonzaaier 1988), for example the sample included Xhosa women, Zulu women and Sotho women. Within any one of these groups, there may be differing political and cultural values.

As there are only a few previous studies on PMS including African women (Cenac 1988, Janiger 1972, Awaritefe, 1978), it was felt that a mixed group of South African Black women was appropriate for this study.

It was hoped that the three ethnic groups of women would be similar in terms of social class distribution and age. However, as social class was only finally determined at the time of interview, the final composition of the three ethnic groups was only revealed after the completion of the interviews.

English and Afrikaans were the languages used in the study, despite the fact that some women had a different home language. The subjects were all fluent in the language they chose to use for the interview.

Students at both universities have free access to medical help, from trained Nurses and Doctors, including family planning advice and free contraception. The staff of UCT are on compulsory medical aid, and emergency needs are treated by UCT's health facility. At UWC, a similar emergency service is available in office hours, but staff do not automatically contribute to medical aid.

This study included women aged between 18 and 45 years of age, who were menstruating (including irregular menstrual periods). The use of contraception was not an exclusion factor. Women who were pregnant, amenorrhoeac or who had had a hysterectomy were excluded.

RANDOMIZATION

The lists of the staff were initially sorted in order of occupational status in an attempt to classify social class (student lists gave no data on father's occupation). Both staff and student lists from the two universities were alphabetically sorted and numbered. The numbers were submitted to Dr Carl Lombard from the Department of Biostatistics at the Medical Research Council, who performed the randomization. Numbers were randomized based on a predicted prevalence of PMS of 20%, with a 95% confidence interval (p=0.05). From the lists of names, 531 names were randomly selected for possible participation.

It was hoped that the target population would show an even distribution of social classes for each ethnic group.

Each subject was traced and had the right to refuse to participate, or to withdraw at any stage of the interview if she so desired. If a subject either refused or was unavailable (eg. could not be traced, or had left university) the name immediately above hers on the list was used, and if that person was unavailable, the name immediately below the selected name was used. If none of these three women were available, no further substitution was used, and the case was considered "not available".

SOCIAL CLASS

In order to investigate the role of social class in PMS, a suitable coding system was necessary. The one used in this study, is a South African specific classification (by the Centre for Applied Social Science [CASS], University of Natal, Stopforth and Schlemmer 1978), which contains elements of both the British and American classification systems (Kahl 1957, Duberman 1976, Stewart et al 1980). The authors state that, in the South African context, some occupations are classified slightly differently, depending on the prestige attached to certain occupations, in different ethnic groups. However, in a cross-ethnic study such as this one, the dominant status values in the particular society are the deciding factor for coding, and all ethnic groups are coded similarly. The CASS classification employs a specific convention for the coding of women.

According to this system, women are assigned to the social class dictated by either their father's or husband's occupation. As the staff and student lists of UCT and UWC did not contain information about the individual's father or husband, the occupation of each woman (from the staff groups) was initially used to divide the lists into groups, and at the time of the interview, adjusted if necessary. The student lists which were sorted alphabetically, were coded for the first time at the time of interview. The final classification was therefore at the time of interview for all participants.

THE CASS SYSTEM OF CLASSIFICATION CODES AS FOLLOWS:

married or widowed women	- code husband's present/previous highest occupation
unmarried women	- code father's present/previous highest occupation (unless own is higher, then code own)
divorced women	- code husband's occupation if available and higher than hers otherwise code subject's own occupation.

If the subject was single and self-supporting, she was coded according to her own occupation.

CASS codes students as social class I, but in this study it was thought to be more appropriate to code the students according to the occupation of their father, ie according to the background in which they have grown up. The reason for this is that the father's occupation would have dictated the standard of living, values and norms in keeping with his level of occupation. His daughter's perceptions and values would be a reflection of her upbringing. For example, if a woman was brought up in a home where the father was a labourer, she would carry with her beliefs, values and norms consistent with her social class V background. It was therefore decided to code students according to their father's occupation, and not as social class I on the grounds of student status.

For the purposes of this study, social class I and II were grouped together, social class III on its own, and social class IV and V together. The reason for this is that these two groups are fairly similar, with social class I "Professional and Managerial" and social class II "Middle White-Collar" (eg. clerical). Social class III is described as "Manual Foreman, Skilled Artisans, and Status Equivalent". Social class IV is described as "Routine Non-Manual and Semi-Skilled Manual" and

social class V as "Unskilled Manual and Menial".

Socio-economic status is a term covering factors like income, housing and living conditions, education, occupation, and nutrition (Castle 1978). In formulating indices of social standing, variables are highly correlated, as they are measuring the same underlying dimension (Kahl and Davis 1955). Occupational status has, however, been shown to be the single factor most suitable in coding social class (Stopforth and Schlemmer 1978, Blalock 1968).

THE QUESTIONNAIRE

For the purposes of this study, a structured questionnaire was designed in order to collect data, for the evaluation of each subject. This questionnaire formed the basis of a one-to-one interview with each subject. Specific instructions were given at the start of each interview. These will be dealt with later in the chapter.

The first part of the questionnaire covered demographic factors, and included ethnic group, social class, marital status, religion, where and with whom the subject lived, educational attainment, income, and age. These factors have, in previous studies, been shown to be associated with the prevalence and symptomatology of PMS (Freeman et al, Friedman and Jaffe, Stout, Boyle).

There is a large volume of research which attempts to correlate obstetric and gynecological factors with PMS (van Keep and Lehert 1981, Woods et al 1982a, Freeman et al 1988, Logue and Moos 1969). The second part of the questionnaire included a menstrual history, and obstetrical and gynecological questions.

Gravidity and parity were ascertained, as well as the use of contraception within the previous 3 months.

Each subject was asked whether she had problems with her menstrual cycle and this question was followed by an open-ended question in which subjects were asked to name any problems they may have with their menstrual cycle. The date of the last menstrual period and cycle length was established in order to assess whether there was a phase effect in the respondents. ie whether a subject is more likely to report premenstrual symptoms (and possibly be diagnosed as having PMS) if she were premenstrual at the time of the interview, than a subject who was not in the premenstrual phase.

Questions about 5 particular stresses, namely financial, work/study, relationship, political-social, and health-related stress were asked. These five stresses had been described as the major stresses in the lives of the 12 known severe PMS sufferers interviewed in the pilot study.

Each subject was asked to describe how stressful these events had been for her in the past three months, and according to her description, a score between 1 and 6 was assigned for each stress, by the interviewer (unlike symptomatology which was rated by the subject). In addition, subjects were asked about job or study satisfaction, as well as relationship satisfaction.

It is very important in the evaluation of premenstrual symptomatology, to have some form of grading for symptom severity (Rubinow et al). This study used a scale of severity from 1-6, similar to the scale used by Moos in his Menstrual Distress Questionnaire (MDQ - description to follow). As the modified MDQ was based on Moos' work, it was felt that it was appropriate to adopt the rating scale used by Moos.

In addition, it was more consistent, and would avoid confusion, if one rating scale was used for the self-rated symptomatology, and other factors assessed in this study. In using rating scales it was decided to make use of an even number of points from which the respondent chooses to avoid the tendency of subjects selecting the middle value each time. This may be done subconsciously.

Regarding the questions on stress, job/study satisfaction, and relationship satisfaction, it was suggested by the Teaching Methods Unit at UCT that it would be of more value if the interviewer assigned a score to descriptions rather than the subjects, as for example, one womans' "moderate" (score of "4") could be described by another as "severe" (this would be scored "6").

It was felt that there may be value in establishing whether or not there was an association between PMS and the presence or absence of a confidant. Other events in the menstrual cycle have been shown to be affected by this social support dimension (Jordan and Meckler 1982).

Three "psychological" questions were used to give a broad picture of how many women had been to see a psychologist or psychiatrist, the treatment they received and whether they perceived the treatment as helpful or not. The aim of these questions was to correlate having been to a Psychologist or Psychiatrist with the prevalence of PMS. If there was an association, the type of treatment and subjective effectiveness of treatment would also be assessed.

In the questionnaire, subjects' perceptions were evaluated for the following:

- had she (the subject) been more stressed than usual in the past three months
- had she ever had PMS
- did she perceive her premenstrual symptoms as a problem
- did she know whether her a) mother b) sister c) friends or acquaintances suffer or had suffered from PMS

Every subject was asked whether she had ever heard of PMS. It was accepted that an affirmative answer did not necessarily mean that an individual knew what PMS is.

In this study, symptomatology was assessed with a modified version of the Menstrual Distress Questionnaire (Moos 1968), which is dealt with later in this chapter.

Interspersed throughout the questionnaire were questions ("guidelines") which, it was hoped, would give pointers towards a diagnosis of PMS. The questions are listed below.

Q16. Do you have any problems with your periods ?
(no prompting by interviewer)

Q17-Q22. What sort of problems? (no cues given)

One of the options in question 17-22, is "PMS" or "symptoms of PMS", or Premenstrual Tension

Q23. How do you know that your period is about to begin?

1. Always regular
2. Premenstrual symptom/s /Premenstrual Syndrome
3. Respondent doesn't know

Q24. If answer to Q23 is "2", do the symptoms worry you?

1. Severely 2. Mildly 3. Sometimes 4. No

Q31. Do you ever take time off work as a result of your Premenstrual symptoms?

1. Yes 2. No 3. Don't know

Q42. Do you feel physically or emotionally out of sorts or unwell before your period or do you feel quite normal? 1. Yes 2. No 3. Don't know 4. Sometimes

Q56. Do you know that you are about to start a period before it actually begins? (to confirm Q23.)
1. Yes 2. No 3. Don't know 4. Sometimes

Q57. If the answer to Q56 was "yes", do you feel better once your period has begun?
1. Yes 2. No 3. Don't know 4. Usually 5. No different from usual

Q18B. (At the end of 35 specific premenstrual symptoms) Do you perceive the above (35 symptoms) as a problem in that your life is disrupted, or can you go on as normal, in spite of how you feel before a period begins? 1. Yes 2. No 3. Don't know 4. Mildly

The "guideline" questions could not be used as a diagnostic tool alone, because of possible variations in interpretation by the subjects. They would however, provide useful information about the perceptions of the women involved. In a pilot study, of 12 known severe PMS sufferers, 11 answered all of the questions in an affirmative manner for a diagnosis of PMS. The twelfth subject answered all but two of the questions positively for PMS, in spite of having severe PMS, which indicated that these questions were always not suitable as a diagnostic tool.

The final part of the questionnaire dealt with the individual's history of PMS, and what she had done about her symptoms, if she perceived them as problematic. Numerous authors have explored help seeking patterns of PMS-sufferers (Johnson et al 1988, Friedman and Jaffe 1985, Keye 1986).

The interview was concluded with questions aimed at eliciting more information about the subjects' premenstrual symptoms, for example, age of onset of premenstrual symptoms, and ever having sought help for symptoms.

The Pilot Study

The questionnaire was initially tested on 70 volunteers. Twelve of the women were known sufferers of severe PMS, and the remaining 58 volunteers were nursing, medical staff, students, clerical staff, and environmental health workers at Groote Schuur Hospital.

Having completed the pilot study, the questionnaire was refined for the larger study, and the MDQ was shortened from 47 to 35 items, deleting the "Arousal" and "Control" clusters (as used by Moos) of symptoms, in the same way that Magos and Studd did (1986) in their study.

The Menstrual Distress Questionnaire

Various tools for assessing PMS have been devised (Halbreich et al 1982, Taylor 1979, Magos and Studd 1988, Steiner et al 1980), but the Menstrual Distress Questionnaire (MDQ Moos 1968) remains a very widely used method of assessing symptoms. The original MDQ consisted of 47 symptoms which when factor-analysed and correlated, revealing 8 clusters of symptoms. Moos used the MDQ to assess symptomatology at three stages of the menstrual cycle: Menstrual, Intermenstrual and Premenstrual. The MDQ has been modified by some authors or used in conjunction with other tests (Abplanalp et al 1979, Gruba and Rohrbaugh 1975, Woods et al 1982, Steiner et al 1980). Other authors (Rouse 1978, Sampson and Jenner 1977, Brooks and Ruble 1977) have conducted studies using the original MDQ.

The present study evaluated only Premenstrual symptomatology. The subjects were not all in the same menstrual cycle-phase at the time of the interview.

The MDQ was modified for this study and is similar to the version used by Magos and Studd (1986) in which 6 symptom clusters were assessed. The six clusters evaluated in this study were: Pain (6 symptoms), Concentration (7 symptoms), Behavioural Change (5 symptoms), Autonomic Reaction (4 symptoms), Water Retention (4 symptoms) and Negative Affect (8 symptoms). In addition, "A change in eating habits" was included, as is a symptom which has been reported to differ between ethnic groups (Ferguson and Vermillion 1957, Stout 1986). This symptom does not belong in any of the 6 clusters.

One symptom, Lack of Concentration, was erroneously omitted, (Concentration cluster) and the Total Symptom Score and Concentration cluster scores will be marginally lower than they would otherwise be.

DIAGNOSTIC CRITERIA

In this study, for a diagnosis of PMS, a woman had to rate at least 3 symptoms as strong or disabling for the previous three menstrual cycles ie. a self-rating score of "5" or "6" for at least 3 symptoms on the modified Menstrual Distress Questionnaire (MDQ). The rating scale of 1-6 used was the same as that used by the worker who devised the Menstrual Distress Questionnaire (Moos 1968). This allowed for comparison of results with those of other researchers.

The six symptom clusters used in this study are as follows:

PAIN

* muscle stiffness
* headache
* cramps
* backache
* fatigue
* general aches and pains

CONCENTRATION

* insomnia
* forgetfulness
* confusion
* lowered judgement
* distractable
* accidents
* lowered motor co-ordination

BEHAVIOURAL CHANGE

* lowered work performance
* stay at home
* take naps
* avoid social activities
* decreased efficiency

AUTONOMIC REACTION

* dizziness/faintness
* cold sweats
* nausea and vomiting
* hot flushes

WATER RETENTION

* weight gain
* skin disorders
* painful breasts
* swelling

* change in eating habits

NEGATIVE AFFECT

* crying
* loneliness
* anxiety
* restlessness
* irritability
* mood swings
* depression
* tension

The two clusters not used in this study, were the Control cluster which contains items frequently endorsed by Menopausal women, and the Arousal cluster. Moos used the Control cluster to measure the degree to which a woman was likely to complain of **any** symptom.

The symptoms comprising these two clusters are:

AROUSAL	CONTROL
* affectionate	* feeling of suffocation
* orderliness	* chest pains
* excitement	* ringing in the ears
* feelings of well-being	* heart pounding
* bursts of energy/activity	* numbness, tingling
	* blind spots, fuzzy vision

In the light of findings by other workers, it was decided to delete these two clusters, which do not contain well-documented PMS symptoms. It was thought that by assessing 35 symptoms, a good overall picture of premenstrual symptomatology would be obtained. Many other studies have limited their investigation of symptomatology to far fewer than 35 symptoms (Sutherland and Stewart 1965, May 1977, Abraham 1982).

Steiner found that only 27 of the MDQ symptoms were useful, and Woods et al (1982a) found that only 16 MDQ symptoms increased premenstrually, while Abraham (1983) commented that the symptoms in the Arousal cluster were not clinically relevant, and in his study modified the MDQ and evaluated only 19 symptoms.

Symptom Scoring

Moos used a six-point rating scale for symptomatology, and each subject rated the 47 symptoms herself, for the previous menstrual cycle. In the present study, symptoms were rated retrospectively for the previous 3 menstrual cycles. The scale used for symptom-reporting is tabulated below, and includes a clarifying statement as used in the interviews.

Fig. 2.1

SCORE	DESCRIPTION OF SYMPTOM SEVERITY
1	Nil - no experience of the symptom at all
2	Present, just noticeable, no real discomfort
3	Present mild - slight discomfort
4	Present moderate - moderate discomfort
5	Present strong - great discomfort
6	Severe/disabling - unbearable discomfort requires bed rest as subject cannot function normally

A score could be calculated for each symptom cluster by adding up the ratings for each item within a given cluster. For example, the Water Retention cluster total would be calculated from the four items under Water Retention, and the maximum cluster score possible would be 24, the minimum 4.

The total symptom score was calculated by adding together all 35 individual symptom scores.

In the analysis of symptomatology, total symptom scores were compared, between ethnic groups and social classes, and between PMS and "non-PMS" subjects. In addition cluster scores were compared between ethnic groups and social classes.

Finally, individual symptoms were compared, in order to establish whether different symptoms are experienced more frequently by any particular subgroup of the sample.

The Interview

Due to the sensitive and personal nature of the contents of the questionnaire, each interview was conducted in privacy, on a one-to-one basis. Anonymity and confidentiality was guaranteed to each participant, and the answer sheets were numerically coded, to protect each woman's identity.

By way of introduction, the interviewer explained that the aims of the study were to try and find out more about how women feel **before** their menstrual periods, and to identify any problems which may exist before a women gets her menstrual period. It was stressed that it was all right if an individual did not have any problems, and that she should only mention feelings, or changes which occur just before a menstrual period.

The term "Premenstrual Syndrome" was never used in the interview, unless as part of a question, or by participants. It was emphasised that each subject had been chosen purely by chance and for no other reason. It has been shown that if a subject knows that the purpose of a study was an investigation of PMS, it would not significantly bias the results (Markum 1976), so if subjects did realize what this study was about, it should not have made any difference to the results of this study.

The subjects were not rewarded for participation, but if PMS emerged as a problem for which a participant wanted medical help, she was advised with regard to therapeutic options available in Cape Town.

It was stressed that there were no right or wrong answers and that each individual should try and relate her own experiences. Each subject was assured that if she was unsure of a question, or unwilling to answer a question, she should say so. An attempt was made to be as consistent as possible with every single subject, and interviews were limited to a maximum of 12 per day. Each interview lasted about 20 minutes.

Each respondent was given instructions before symptomatology was rated:

- she was to think about how she had felt in the 14 days prior to her menstrual period, over the past 3 menstrual cycles (The period of 14 days was used to focus the subjects on the premenstrual phase of their menstrual cycle, and it was accepted that some subjects may have symptoms lasting longer than 14 days.)
- if she had a frequent complaint eg. continuous headaches she was not to rate that symptom
- she was **not** to rate symptoms which began with the onset of menstruation, only symptoms which began before menstruation. Throughout the rating the interviewer cross-checked that each respondent was in fact rating **premenstrual** symptoms (as opposed to menstrual symptoms) from the past 3 months, and not the general experience of symptoms.

STATISTICAL ANALYSIS

The Department of Biostatistics at the Medical Research Council performed the statistical analysis on the data. The data was loaded onto an IBM Mainframe computer, and all statistical analyses were carried out using a programme called SAS (see Table of Abbreviations on page 11).

Frequencies and percentages of categorical responses were tabulated for the total sample, as well as the ethnic and social class subgroups, for which there were sufficient numbers of respondents. The Chi-squared test was used to compare groups for these categorical responses. In the cases *where expected cell-frequencies were less than 5, Fisher's exact test was done.

For describing the continuous variables in the total sample, the ethnic groups, and the social class subgroups within ethnic groups, the median, 25th and 75th percentiles were used. The continuous variables were not normally distributed and therefore these percentiles were used as summary statistics, rather than the mean and the standard deviation.

To compare groups on the continuous variables, the nonparametric Kruskall-Wallis test was used. In cases where there were many observations with the same value, the nonparametric median test was used.

For overall comparisons a significance level of 0.05 was used ie. a difference/association is called "significant" if $p<0.05$ and approaching significance if p close to 0.05 (say 0.05 - 0.10). If $p<0.10$ it would indicate a trend. Exact p-values are quoted throughout. For pairwise comparisons of subgroups, the significance level was made more conservative, namely 0.01.

To assess the association between a given variable and the outcome of PMS, a loglinear model consisting of ethnic group, social class (I/II, III, or IV/V), the given variable and PMS diagnosis was fitted. In this way it could be determined whether the association between the variable and PMS diagnosis depended on the ethnic group or social class of the respondent. If the association depended on ethnicity and social class, no conclusion could be made about the association because of small numbers. If the association did not depend on ethnicity or social class, a common odds ratio (and its 95% confidence interval) was calculated for all the subjects.

Odds Ratios not only give a measure of the significance of association, but also the strength of association between 2 parameters. Odds ratios are estimates, and subject to sampling variation, therefore 95% confidence intervals are given for each comparison, which indicate a range of plausible values for the parameters. If "1" (ie the point where there is no difference between two points) falls within the 95% confidence interval, the association is not significant (Schall and Joubert in press).

SUMMARY

Permission was obtained to conduct the study from the two universities, and staff and student lists obtained. Having deleted women older than 45 years from the lists, and sorted the staff lists into "occupational status" and both staff and student lists groups into alphabetical order, the groups were counted and numbered. The randomization was performed by the Department of Biostatistics at the Medical Research Council. The questionnaire was described, and included a modified version of Moos' Menstrual Distress Questionnaire.

DISCUSSION OF METHODOLOGY

Questionnaire

Some important factors regarding methodology in PMS research are:

- the design of an answerable set of questions
- establishing the symptoms experienced
- the intensity of symptoms
- the baseline from which the symptoms fluctuate
- when symptoms occur in relation to menstruation (Rubinow and Roy-Byrne 1984). The criteria used in arriving at a PMS diagnosis are also an important consideration in the designing of a study.

It was difficult to establish the baseline from which subjects' symptoms fluctuate, from just one interview. At least one more interview per subject would have been required, in order to compare responses in different phases of the menstrual cycle. The clear instructions given to each subject were that if a symptom occurred throughout the menstrual cycle (eg. headaches) she was not to rate it, **only** to rate symptoms which appeared in the premenstruum, and were relieved at or just after menstruation began.

The question of inclusion criteria for a diagnosis of PMS was addressed by Brooks-Gunn (1986), who commented that most studies include women having premenstrual symptoms rather than severe PMS, leading to an overestimation of PMS prevalence. Other authors developed new diagnostic criteria which were more stringent (Steiner et al 1980, Halbreich and Endicott 1982), but rather narrow.

Steiner et al's strict criteria included the following:

- Premenstrual dysphoric symptoms for at least six preceding cycles
- Moderate to severe physical **and** psychological symptoms
- Symptoms **only** during premenstruum with marked relief at onset of menses
- Age between 18 and 45 years
- Not pregnant
- No hormonal contraception
- Regular menses for previous cycles
- No psychiatric disorder, normal physical examination and laboratory test profile
- No drugs for preceding four weeks
- Will not receive the following during evaluation: anxiolytics, diuretics, hormones, neuroleptics

Had these stringent criteria been adhered to for the present study, large numbers of women would have been ineligible for participation. In addition, the use of hormonal contraception is a reality for many women, and as the aim of this study was PMS prevalence, it was felt appropriate to include women using hormonal contraception, as part of the university population studied. Hormonal contraceptive users may suffer from PMS, and whether or not it is linked to their use of hormones, does not alter the fact that they may have serious premenstrual discomfort. In the present study it was felt that a history of at least three severe or disabling symptoms for each of the previous three menstrual cycles was adequate for a PMS diagnosis, provided the subjects fitted the inclusion criteria for the study (see Introduction).

In the diagnosis of PMS, a thorough evaluation of the woman is essential (Laughlin and Johnson 1984, Massil and O' Brien 1986). Perceptions and expectations should be taken into account (Ruble 1977, Brooks and Ruble 1977, Markum 1976, Sommer 1973). Ruble manipulated one group of women into thinking that they were premenstrual, and another into thinking that they were intermenstrual, when in fact they were all about 6 days premenstrual. She did this by telling subjects that there was a new laboratory technique which could predict the onset of the next menstrual period. In this study the group who were told they were "premenstrual" showed significantly higher scores than the "intermenstrual group" for 3 variables: water retention, pain, and negative affect. This effectively demonstrated that expectations may alter symptom reporting. Olasov and Jackson (1987) also did a manipulative study which showed that expectations can be altered by experimental manipulations. Premenstrual mood changes (Moos et al 1969b, Olasov and Jackson 1987, Wilcoxon et al 1976), have no apparent endocrinological basis (Backstrom et al 1983).

Paulson (1961) showed that feelings, attitudes, experiences and interpersonal relationships are significant in understanding PMS. His study demonstrated that there is a dynamic relationship between certain psychological factors and the intensity and frequency of PMS.

Patterns of attribution have also been shown to be related to PMS prevalence (Koeske and Koeske 1975, Slade 1984, Hart and Russell 1986). The role of social learning in menstrual cycle experiences has also been noted (Paulson 1961, Paige, 1973). Woods et al (1982b), considering recollections about menarche', current menstrual attitudes and perimenstrual symptoms, showed that negative recollections of the first menstruation had little effect on current menstrual attitudes.

There may be variations in beliefs and even taboos from one ethnic group, or sub-culture to another, which could affect individual experiences (Paige 1975) of symptoms.

The problem of subjects answering what they think they "should" experience (Brooks Gunn and Ruble 1982) is difficult to eliminate.

Some authors have noted that environmental stress may accentuate premenstrual symptoms (Rees 1953, Reid 1986, Freeman 1988), and Wilcoxon et al (1976) showed that the experience of stressful events accounted for more of the variance in negative mood factors than cycle phase did. Similarly, it was shown that daily events had a far greater impact on moods and enjoyment of daily life than did the menstrual cycle (Abplanalp et al 1979a, 1979b).

In this study, while the assessment of stress factors was by no means comprehensive but it does give a guideline of womens' **perceptions** of the stress in their lives, and as with symptomatology, provides a useful base from which comparisons between groups could be made.

The above variables are not assessed easily, and their impact on the prevalence of PMS, should not be underestimated when evaluating the results of this study. These factors may be of particular importance in the light of the broad cross-section of women involved in this study, and their differential responses to questions asked.

It is a difficult task to design a questionnaire for a select group of women from similar backgrounds, and by adding ethnic variations (which may include cultural differences) and social class comparisons, the problems are compounded (Zola 1966, Helman 1984 & 1985, Swartz 1985).

"...the forms of behaviour in Euro-American culture may be conveniently used for comparison with behaviour elsewhere in order to enlarge our understanding of them all, but they are neither necessarily the commonest nor the most healthy, and they do not possess the finality that might come, for instance, from basically biological norms..." (Yap 1951)

In addition, Helman (1984) noted that the cultural background of the researcher may provide an unconscious bias in research. In this study **all** the interviewing was performed by the author, which provided consistency. However, no author can escape from her or his cultural background, so there may be some small bias in favour of the subjects with a similar cultural background to that of the author, for example communicating with women of a similar background may require less effort for the interviewer, and those interviews may have been easier to conduct than other interviews.

Swartz (1985) commented that urban black culture may be very different from rural black culture, and that findings from studies on one group cannot be generalized to the other. In this study a certain portion of students, particularly the Black students, came from rural areas. However, all the subjects had been resident in the city for at least one year, and therefore had had some exposure to city-stresses.

Other factors which may play a role in the prevalence of PMS are occupation (Friedman and Jaffe 1985), contraceptive patterns (Cullberg 1972, Silbergeld et al 1971, Goldzieher et al 1971), and socio-economic status (Boyle et al 1987).

With the above-mentioned factors in mind, specific questions were included in an attempt to explore Premenstrual Syndrome, incorporating not only symptomatology, but also womens' perceptions of PMS and their description of stress factors, keeping in mind the role of expectations and stereotypic beliefs which may exist in relation to the premenstrual phase of the menstrual cycle.

In his review, Reid (1981), comments on the fact that women who suffer from PMS may be more likely to enter studies, or answer questionnaires, and in this study the problem was overcome by the randomized selection used. However, as in any study, there would probably be a small number of women more likely than other women who would want to participate either because they have PMS, or because they like answering questionnaires. Twenty four women refused to participate in the study.

Estimation of the premenstrual phase of the menstrual cycle, was by calendar dates only. There may have been a small number of women who were incorrectly classified as premenstrual, however it would probably be cancelled by those incorrectly categorized as in the follicular phase of the menstrual cycle. The cost of endocrinological assessment of 409 women in order to eliminate the few cases possibly classified in the wrong cycle-phase could not be justified.

This questionnaire has relied largely on the perceptions of each subject. There will probably be some women harbouring misconceptions about PMS and the interviewer obviously cannot doubt the response of a subject who may say she perceives her PMS as a problem, or not a problem. Accepting what the subject (or patient) says about her symptoms is in any event a clinical reality.

It was expected that there would be a wide variation in responses to questions, which would affected by both personal constructs and interpretation of the questions asked.

In the diagnosis of the Premenstrual Syndrome, the clinician has to rely on a thorough history as there is no biochemical marker at present, with which a diagnosis of PMS can be confirmed. Presently, this can only be confirmed with the aid of prospectively rated daily recordings of symptoms (Magos and Studd 1986).

Modified Menstrual Distress Questionnaire

Two major difficulties in the present study are: the influence of menstrual stereotypes, and the recall bias on retrospective symptom reports, which may cause over-reporting on the MDQ (Woods et al 1982d), and lead to an overestimation of the prevalence of PMS.

Moos (1968) and Rouse (1978) support the use of self-reports as a means of assessing PMS symptomatology, showing that neither memory nor phase effect had a significant influence on reports of symptom severity. Coppen and Kessel (1963b) remarked "... only the patient experiences her symptoms. Who else can be competent to assess them? ..."

In contrast, May (1976) found that there was no correspondence between one-time retrospective reports of menstrual mood variations and actual reports at different times of the cycle. However, May had a very small sample (n=30), and examined mood only. One study found that in only 60% of cycles did daily self-rating and retrospective rating of symptoms agree (Sampson and Prescott 1981). Mc Cance et al (1937), Abplanalp et al (1979) and Woods et al (1982c) showed that retrospective reports overestimate symptoms rather than validate them. In

a prospective study of menstrually-related mood changes, it was shown that only 40% of women's retrospectively self-diagnosed PMS was confirmed (Rubinow et al 1984). Halbreich and Endicott (1982) showed that in women with moderate to severe symptoms of PMS, retrospective reports are reasonably accurate, while mild symptoms are overestimated.

In spite of the criticism of retrospective rating (Woods et al 1982d), prospective studies have been limited to small highly selected groups of women (May 1976, Beaumont et al 1975 Rubinow et al 1984).

The MDQ has drawn criticism from Parlee (1974) for its questionable reliability and external validity, and unreported characteristics of the normative sample (over half the women Moos used were pregnant or taking oral contraceptives). Parlee administered the MDQ to 34 men and 25 women asking what they thought women experience during the menstrual cycle. Both groups reported very similar patterns of symptoms and symptom changes when asked to indicate what women experience during the menstrual cycle. Parlee suggested that the MDQ measures cultural or stereotypic beliefs about the psychological concommitants of PMS, rather than PMS symptoms. This aspect must not be discounted when the results of this study are evaluated, particularly because of the multi-cultural, multi-ethnic composition of the sample population.

Markum (1976) showed that the MDQ is internally consistent and has a test-retest reliability. In addition she showed that knowledge of the purpose of the survey by participants did not significantly alter symptom ratings.

As mentioned earlier, many authors have criticized the use of retrospective ratings. This target population was much larger than those in earlier prospective studies, which criticized retrospective symptom rating.

This work should be seen as a preliminary study on PMS, and had as attempt been made to obtain prospective data, numerous problems would have had to be overcome: firstly, motivation of subjects to faithfully and accurately record daily symptoms for at least one menstrual cycle; secondly the reliable returning of documentation of symptomatology by each subject; thirdly, if a financial incentive had been given, it would have been costly, and possibly resulted in token form-filling in simply for the reward at the end. In addition, there would be no way of cross-checking data which may appear questionable, unlike an interview situation where a subject could clarify answers if they seemed ambiguous (or query questions she may be unsure about).

The questioning of subjects about specific symptoms may well elicit greater (symptom) prevalence rates than by asking subjects to list their own individual symptoms (Woods et al 1982c). For this reason, each subject was given the opportunity to state (with no prompting) what her three worst symptoms were (this was early on in the interview well before the MDQ), and these symptoms were compared with those rated on the MDQ. Symptoms of minimal to mild intensity have been shown to be the ones respondents do not recall accurately (Woods et al 1982 c, Halbreich et al 1982), and for this reason, the criteria for a diagnosis of PMS, included only symptoms rated as severe or disabling by the respondent. For example, if a subject rated 4 (ie moderate) or less than 4 for all the items on the MDQ, she was NOT diagnosed a PMS sufferer.

In addition, when comparing the frequency of specific symptoms between groups, the ratings of 5-6 were specified, and were probably a more accurate evaluation of complaints than any rating from 2-6, which encompasses extremely mild symptoms which are not problematic. Even if there was some over-estimation of symptoms, there is value in comparing the prevalence and symptomatology in different sub-groups of subjects, as there has been no work published on PMS prevalence and symptomatology in South Africa.

Chapter 3

DEMOGRAPHIC DETAILS OF SAMPLE

This chapter describes the demographic features of the four hundred and nine cases which were analysed in this study. The universe from which the women were randomly selected was that of two Cape Town universities.

A total of 412 interviews were conducted, all by the author, and for the purposes of the analysis, 409 cases were analysed. Two of these cases were excluded, because they did not comply with the age criteria, and the third case was one in which the subject appeared to be very distracted during the interview. It was felt that this individual's responses would not be suitable for analysis. The percentage realization of the sample was 77.02% ie 409 out of a possible 531 subjects. There were 24 women who refused to participate.

The interviews were conducted over a three month period from January to April 1990. Each interview lasted about 20 minutes, and no more than 12 interviews were carried out in one day, to allow the interviewer to remain consistent, in both the explanation of what was required from each participant, and to ensure maximum concentration when completing the answer sheets.

NUMERICAL BREAKDOWN OF THE SAMPLE POPULATION

Four hundred and nine cases were analysed, and the ratio of students to staff for the sample was 248:161 (approximately 60%:40%).

Table 3.1

UCT STAFF	98	24%
UCT STUDENTS	135	33%
UWC STAFF	63	15.6%
UWC STUDENTS	113	27.4%

When the subjects were coded into their respective social class groups the following numbers constituted each category:

Table 3.2

SOCIAL CLASS	GROUP TOTAL	I/II	III	IV/V
TOTAL N	409	267	42	100
COLOURED	152	71	31	50
BLACK	133	80	7	46
WHITE	124	116	4	4

Because of the small numbers in the Black and White social class III groups, and the White social class IV/V group, these women were not included in the analysis beyond the stage of comparing each ethnic group, ie they were excluded from comparisons based upon social class.

As mentioned in the chapter on Subjects and Methods, for the purposes of this analysis, social classes I and II were combined, and IV and V combined.

The ratio of students to staff in each group is tabulated below.

Table 3.3

TOTAL N=409	STUDENTS		STAFF	
C n=152	57	37.5%	95	62.5%
B n=133	117	88.0%	16	12.0%
W n= 124	74	59.7%	50	40.3%

AGE

The mean age of the total sample population was 26.0 years and the Standard Deviation (SD) was 7.2 years. The Median age for the group was 23 years and the 25th and 75th percentiles 20 and 30 years respectively.

The age differences between the three ethnic groups are tabulated below. In the column labelled "Median Age", the 25th and 75th percentiles are stated in brackets next to the median age.

Table 3.4

GROUP	MEAN AGE (years)	MEDIAN AGE (years)
COLOURED n=152	28.0 SD 7.7	26 (21.3;33)
BLACK n=124	23.4 SD 4.8	22 (20;25)
WHITE n=124	26.4 SD 8.0	23 (23;32.8)

There was a significant age difference between the 3 groups of women (Kruskall-Wallis X^2=26.08 df=2 p=0.0001). The Coloured subjects were significantly older than the other two groups of women. If one considers the median ages of the three ethnic groups, the range of White and Coloured subjects are fairly similar. ie the range within which 50% of each group's subjects fall, is similar viz. between 21.3 and 33 years for the Coloured women, and between 23 and 32.8 years for the White subjects. The Black women are clearly younger than this with 50% of their numbers aged between 20 and 25 years.

When the three ethnic groups were compared the following differences were revealed:

- Coloured women were significantly older than the White women (Kruskall-Wallis X^2=7.47 df=1 p=0.0063)
- Coloured women significantly older than the Black women (Kruskall-Wallis X^2=27.53 df=1 p=0.0001)

The age difference between the Black and the White women was not significant.

MARITAL STATUS

Three hundred and eleven of the 409 subjects (76%) were single. This included 9 divorcees, and 3 widows. There were proportionally more single Black women than White or Coloured women. This is probably a feature of age, as the Black group of women were very young compared to particularly the Coloured group.

Table 3.5

GROUP	SINGLE WOMEN (including divorcees/widows)
COLOURED n=152	97 (63.8%)
BLACK n=133	123 (92.5%)
WHITE n=124	91 (73.4%)

RELIGION

The majority of subjects were Protestant 237 (57.9%) and Roman Catholic 64 (15.6%). The remaining religions accounted for very small numbers of the sample as indicated below. It is of interest that **no** Black women reported having **no** religion, compared to quite a large number of White women (18). In the Coloured group, 17 (11.2%) subjects were Moslem.

Table 3.6

RELIGION	N=409	C n=152	B n=133	W n=124
PROTESTANT OR ROM. CATHOLIC	301	93	122	86
OTHER	95	54	11	20
NIL	23	5	0	18

ACCOMMODATION

One hundred and eighty nine (46.2%) of the total sample lived in university residences. Ninety six subjects (23.5%) owned their own homes, and 61 (14.9%) lived with their parents. The remaining 63 (15.4%) rented accommodation. Seventeen (4.2%) women in the sample lived alone.

EDUCATIONAL ATTAINMENT

There were 347 (84.8%) women in the total sample who had passed Std 9 or more. Eighty one (19.8%) of that number had completed a tertiary education, and 266 (65%) were in possession of a Std 9 or Std 10 certificate). In the questionnaire, no differentiation was made between subjects who had a Std.9 or a Std.10 pass, and the students in the sample were classified in this category as they had not yet achieved a university degree. However, by deduction, it was possible to calculate that at least 248 of the 266 women in the Std 9-10 category had matriculated (ie all the university students). Therefore, of the 409 subjects, there were at least 329 (80.4%) with a Std 10 qualification.

Fifty one (12.5%) of the sample had achieved between a Std 6 and Std 8 pass, and 11 (2.7%)of the subjects had less than a Std 6 education. The latter group consisted solely of Coloured subjects.

The table below demonstrates the educational qualifications of the three groups of women.

Table 3.7

EDUCATION	COLOURED n=152	BLACK n=133	WHITE n=124
Std 2-5	11 (7.2%)	0	0
Std 6-8	47 (30.9%)	3 (2.3%)	1 (0.81%)
Std 9-10	74 (48.7%)	121 (91.0%)	71 (57.3%)
Tertiary	20 (13.2%)	9 (6.7%)	52 (41.9%)

INCOME

The total sample of 409 was split into two sections for the data on income, namely students, and working women. Respondents were asked what their "family income" was.

STUDENTS

The students were categorized as either under parental support, or in possession of a bursary, loan, or grant. If a student was obtaining financial assistance from both sources, the larger source of income was coded. 13 of the 248 students were part-time, and earning a salary, so these 13 were included with the rest of the working women. 38% (91) of the remaining 235 students were receiving parental support, and 61.3% (144) were receiving bursaries, loans or grants.

Percentages were calculated for n=235, not N=409.

Table 3.8

FULL-TIME STUDENTS (n=235)	PARENTAL SUPPORT	BURSARY/LOAN/ GRANT
TOTAL n=235	91 (38.7%)	144 (61.3%)
COLOURED n=52	16 (30.8%)	36 (69.2%)
BLACK n=117	39 (33.3%)	78 (66.6%)
WHITE n=66	36 (54.5%)	30 (45.5%)

WORKING WOMEN

The table below illustrates the distribution of "family income" for the three groups of subjects. Percentages were calculated for n=187, ie. 174 working women plus 13 students earning a salary, and not N=409. It was not possible to draw conclusions about the Black group of women earning an income, as the numbers were too small.

Table 3.9

WORKING WOMEN (n=187)	<R1000 p.m	<R2500 p.m	>R2500 p.m
COLOURED n=100	24 (24%)	47 (47%)	29 (29%)
BLACK n=16	5 (31.3%)	7 (43.8%)	4 (25%)
WHITE n=58	2 (3.4%)	17 (29.3%)	39 (67.2%)

GRAVIDITY AND PARITY

The sample population consisted largely of nulliparous women (68.9%) and the following table gives the breakdown into ethnic groups for Gravidity and Parity. There were ten subjects who had had miscarriages.

Table 3.10

GRAVIDITY/ PARITY	N=409	C n=152	B n=133	W n=124
NEVER PREGNANT	272 66.5%	81 53.3%	99 74.4%	92 74.2%
NO SUCESS-FUL PREG.	282 68.9%	85 55.9%	101 75.9%	96 77.4%
ANY SUCES-SFUL PREG.	127 31.1%	67 44%	32 24.1%	28 22.6%

DISCUSSION OF SAMPLE POPULATION

The sample was randomly selected from the universe of two Cape Town university populations. The sample contained roughly equal numbers of women from three ethnic groups, all with access to medical education and care.

Approximately 60% of the sample were university students, and 46.2% of the total sample lived in university residences. Most of the respondents were Protestant or Roman Catholic 301 (73.6%), and 311 (76%) were single women.

The mean age of the sample was 26.0 years, and the median age 23 years. The Coloured subjects were significantly older than both the White and the Black women. However, the difference between the Coloured and Black women in terms of age was greater than the difference between the Coloured and White subjects. This was illustrated by the median distribution ages of the women in Table 3.4. The age difference between the White and Black subjects was not significant.

Proportionately more Coloured women (than Black or White women) had been pregnant, which is probably related to the fact that the Coloured group is older than the other two groups of women, and contains more married women, and fewer students than the other groups.

The sample was divided into groups based on social class, and as mentioned earlier, social class I and II were combined, as well as social class IV and V. The social class of each student was a direct reflection of her father's occupational status. 65.3% of the sample were social class I/II. 10.3% of the sample was social class III, and 24.4% social class IV or V. The distribution of social classes within ethnic groups was

uneven, with very small numbers of White women falling into social class III, IV and V. In addition, there were very few Black women in social class III. The Coloured group was the only group with large enough numbers to be adequately represented in all the categories of social classes.

The reason for this is probably linked to the fact that traditionally, the Coloured group has provided most of the Artisans (social class III) in the Cape Peninsula , as well as part of the manual labour force (social class IV and V) (South Africa 1987/88, South African Statistics 1988). Historically, White people in South Africa have had the privilege of a superior educational system, and subsequently better employment opportunities, resulting in only a few White women in this sample, belonging in social class III, IV or V.

The Black group was interesting in that it consisted largely of students (117/133) who were either from well-educated social class I backgrounds (ie the father was a professional person) or the opposite extreme, namely social class IV/V ie. father was a manual labourer. It was worth noting that relatively many, 41 (35%), of the Black students, were from social class IV/V backgrounds and these are upwardly mobile women, as their social class will change to social class I or II on graduating. 69 of the Black students (59%) were from social class I/II.

In contrast, most of the White students 64 (95%) in the sample already have well-educated parents (specifically fathers, as they were categorized according to their father's occupation), who are professional people, and they are therefore already social class I or II women. This is reflected by the lower proportion of White students receiving financial support from the universities.

Three hundred and forty seven (84.8%) of the sample had an education of Std 9 or better. The White and Black women were better educated than the Coloured group, which had proportionally more subjects with a Std 8 pass or less. The Coloured group, contained fewer students (52 37%) than the Black or White groups, and had the largest numbers of social class III, IV and V subjects.

The Coloured group had far more subjects earning lower family incomes than the White group. Since only 16 of the Black women were earning the numbers were too small to draw valid conclusions. The White group had the largest proportion of family incomes exceeding R2500 per month, which is consistent with the phenomenon of White affluence, and poorer Coloured and Black groups in South Africa. There were more Coloured (69.2%) and Black (66.6%) students who were recipients of financial assistance at university level, which is consistent with the universities' policies (based on need) as well as some funds for which only certain groups are eligible. Numerous White students (45%) did report that they were receiving either a grant, bursary or loan as the major part of their support.

The subjects were randomly selected from two university populations in Cape Town. In this study, it was hoped that the three groups of women studied would be demographically similar. There are clearly some differences between the three groups of women studied, from social class distribution, age, and income to educational attainment. As a result of information available prior to randomization, it was impossible to control for all these variables. However, the women in the sample were all non-pregnant, aged between 18 and 45 years, and having menstrual cycles.

The information obtained from each subject helped to provide a picture of PMS in this group of South African women, and as the first prevalence study on PMS in South Africa, this information is of value.

However, the demographic differences in this sample mean that findings from this study should be interpreted with circumspection, as the sample is not representative of the general population.

Chapter 4

RESULTS

Part I. MENSTRUAL HISTORY

Data will be presented giving ethnic group, and social class breakdown in this chapter.

There were 81.2% (332/409) of women in the sample who reported having regular menstrual periods, with the ethnic and social class details as follows:

Table 4.1

GROUP	C n=152	B n=133	W n=124
REGULAR MENSES	127 83.6%	102 76.7%	103 83.1%

The breakdown into social classes of subjects having regular menstrual periods is as follows:

Table 4.2

CLASS	C I/II	B I/II	W I/II	C III	C IV/V	B IV\V
n =	71	80	116	31	50	46
REG. MENSES	60 84.5%	63 78.8%	99 85.3%	28 90.3%	39 78%	32 69.6%

Of the 18.8% (77/409) of women who said they did **not** have regular menstrual periods, only half, 9.5% (39/409), quoted irregular periods as a problem when asked to state what sort (if any) of problems they had with their menstrual cycle.

When the respondents were asked whether they had any problems with their menstrual periods, 41.8% (171/409) said "yes". Significantly more Coloured women than White women reported having problems with their menstrual periods (Pairwise comparison $X^2=19.12$ $p<0.001$), and significantly more Black women than White women had problems with their menstrual periods (Pairwise comparison $X^2=8.105$ $p=0.004$). The difference between the Coloured and Black women was not significant.

Table 4.3

GROUP	C n=152	B n=133	W n=124
MENSTRUAL PROBLEMS	80 52.6%	58 43.6%	33 26.6%

The previous question was followed by an open-ended question in which the subjects could mention what their problem/s were. Answers were not prompted and the following table illustrates the breakdown of problems quoted by the sample.

Table 4.4

PROBLEM	N=409	C n=152	B n=133	W n=124
Dysmenorrhoea	106 25.9%	52 34.2%	34 25.6%	20 16.1%
Irregular m.	39 9.5%	16 10.5%	14 10.5%	9 7.3%
Menorrhagia	29 7.1%	10 6.6%	10 7.5%	9 7.3%
PMS/symptoms	60 14.7%	33 21.7%	19 14.3%	8 6.5%
Gyn.Surgery	2 0.5%	0	1 0.8%	1 0.8%
Infertility	2 0.5%	0	1 0.8%	1 0.8%

Dysmenorrhoea, followed by PMS or symptoms of PMS were the two most frequently reported problems. It is of interest that so many Black and Coloured women mentioned PMS/symptoms as a problem, particularly in the light of how few Black and Coloured women had ever heard of PMS (this will be dealt with later in this chapter). Pairwise comparisons revealed that significantly more Coloured than White women cited PMS/symptoms as a problem (X^2=12.571 p=0.001); and significantly more Black than White women mentioned PMS/symptoms as a problem (X^2=4.189 p=0.041). The difference between the Coloured and Black subjects for this response was not significant.

CONTRACEPTION

The use of contraception was established, and a full breakdown is given below.

Table 4.5

AGENT	N=409	C n=152	B n=133	W n=124
Mono O.C	32 7.8%	8 5.3%	9 6.8%	15 12.1%
Tri O.C	57 13.9%	15 9.9%	24 18.1%	18 14.5%
Prog.O.C	1 0.2%	0	0	1 0.8%
Bi O.C	2 0.5%	1 0.7%	0	1 0.8%
Depo Inj	6 1.5%	2 1.3%	2 1.5%	2 1.6%
Nur Ist.	47 11.5%	4 2.6%	41 30.8%	2 1.6%
IUCD	24 5.9%	5 3.3%	9 6.8%	10 8.1%
Condoms	7 1.7%	2 1.3%	0	5 4.0%
Diaphragm	1 0.2%	0	0	1 0.8%
Sterilized	25 6.1%	21 13.8%	0	4 3.2%
[1] NIL	198 48.4%	93 61.2%	45 33.8%	60 48.4%
[2] >1 method	9 2.2%	1 0.7%	3 2.3%	5 4.0%

In reviewing the data on contraception, some interesting facts emerge. Firstly, that the Black and White women, who were significantly younger than the Coloured group, make more use of the oral contraceptive pill (than the Coloured women). In addition, a large proportion of the Black women use Nur-Isterate as contraception. A far greater proportion of Coloured women had been sterilized than the other two groups,

[1] no contraception used in the past three months

[2] subject changed contraception within the past three months, including to no contraception

which is probably related to the fact that they are an older group of women. A strikingly high proportion of Coloured women reported using **no** contraception, compared to the Black and

White women. Considering the low frequency of condom use, and the high frequency of "no contraception", there may be a number of women in the sample whose partners use condoms, yet they did not consider it as contraception, because it used by their partner.

Due to the sensitive nature of this question, further probing about contraception was inappropriate.

CYCLE LENGTH

The majority of subjects, 300 (73.3%), had menstrual cycles of between 26 and 30 days. 324 (79.2%) of the sample had 22-35 day cycles). Only 3 women had menstrual cycles shorter than 21 days, and there were 7 subjects with cycles of between 21 and 25 days. 79 women reported having irregular menstrual periods, and 20 had cycles longer than 30 days duration.

KNOWLEDGE ABOUT PMS

There were 67.7% (277/409) of the respondents who had heard of PMS. This did not necessarily mean that they knew what PMS is, as some women asked the author what Premenstrual Syndrome is. Some of the subjects who had heard of PMS, qualified their answer by saying for example "... but I don't really know what it is."

The ethnic breakdown revealed that while 100% of the White women had heard of PMS, 61.8% (94.152) of the Coloured women

had heard of it, and only 44.4% (59/133) of the Black women had heard of PMS. Pairwise comparisons revealed significant differences between the White and Coloured women (X^2=59.904 p<0.001) and the White and Black women (X^2=96.891 p<0.001) for this question. In addition, the difference between the Coloured and Black women was also significant (X^2=8.718 p=0.003). These differences possibly reflect different socialization with regard to menstruation in the three ethnic groups.

The social class breakdown showed a trend towards fewer women from the disadvantaged social classes having heard of PMS, as illustrated in the table below:

RESPONDENTS WHO HAD HEARD OF PMS

Table 4.6

GROUP	C I/II n=71	B I/II n=80	W I/II n=116	C III n=31	C IV/V n=46	B IV/V n=46
n	54	44	116	18	22	13
%	76.1	55	100	58.1	44	28.3

Another question about the subjects' knowledge or awareness of PMS was asked, in which each participant (who had heard of PMS) was questioned whether she knew if her mother, sisters, or friends had ever had PMS. Only 277 of the sample could answer this as the reminder had never heard of PMS. Of the 277 women who had heard of PMS, 250 (90.3%) knew of at least one person who has/had PMS. 72 said that their mothers had had PMS, 103 said their sisters had PMS, and 224 said they knew a friend or acquaintance who suffered from PMS.

SUMMARY

The majority of the subjects, 332 (81.2%) reported having regular menstrual periods. The lowest occurrence of regular periods was in the Black social class IV/V group of women (69.6%), the highest in the Coloured grade III group of subjects (90.3%).

There were 171 women (41.8%) who reported having problems with their menstrual periods, and when asked what sort of problems they had, without prompting, the most frequently mentioned complaint was dysmenorrhoea (106), followed by premenstrual

symptoms or Premenstrual Syndrome (60). In both cases, more Coloured subjects than White or Black subjects complained of these two problems.

Significantly more White women had heard of PMS than Black or Coloured women, and significantly more Coloured than Black women had heard of PMS. There were relatively large numbers of Coloured and Black subjects who had never heard of PMS. The enquiry showed that fewer of the disadvantaged Coloured and Black subjects, had heard of PMS, than the social class I/II women. A startlingly high proportion (90.3%) of women who had heard of PMS, knew or had known someone with PMS.

DISCUSSION

The reason why more Coloured women mentioned having problems with their menstrual periods, and described dysmenorrhoea and PMS or symptoms of PMS, may be related to age - as an older group of women, many were working women, married, and had probably had had children already. The literature mentions that slightly older women are more prone to PMS (Hargrove and Abraham 1982), and Steege et al (1985) found dysmenorrhoea to be associated with PMS.

It is accepted that when a subject said she had heard of PMS, it did not necessarily mean that she knew what PMS meant. To a certain extent the responses of the subjects in this survey, were based upon their own perceptions, which may be incorrect. The clinician in medicine relies heavily on what he is told by a patient, and regarding PMS, if a women describes symptoms as problematic a Doctor or Nurse cannot refute her claims.

The obvious differences between the groups for contraceptive use were interesting, and while there appeared to be a trend towards more oral contraceptive pill use in younger (Black and White) women, there were more Coloured women who had been sterilized, and a very large number who reported using no contraception. The markedly higher number of coloured women using **no** contraception, than Black or White counterparts, is not easily explained, particularly as they are an older group, containing more married women.

The Black women (76/133 57.1%) relied more on hormonal methods of contraception than the White group (39/124 31.5%) and particularly the Coloured women (30/152 19.7%).

Once the prevalence of PMS was established, the possible association between PMS and menstrual history factors was investigated. This will be dealt with in Part III of Results.

Chapter 4

Part II. PREVALENCE OF PMS

The criteria which were used for a diagnosis of PMS, were the presence of at least three premenstrual symptoms rated (by the subject) as strong to disabling (ie. a score of 5 or 6), in each of the previous three months. Using this formula, the overall prevalence of PMS for the sample was 25.4% (104 subjects fitted these criteria for PMS).

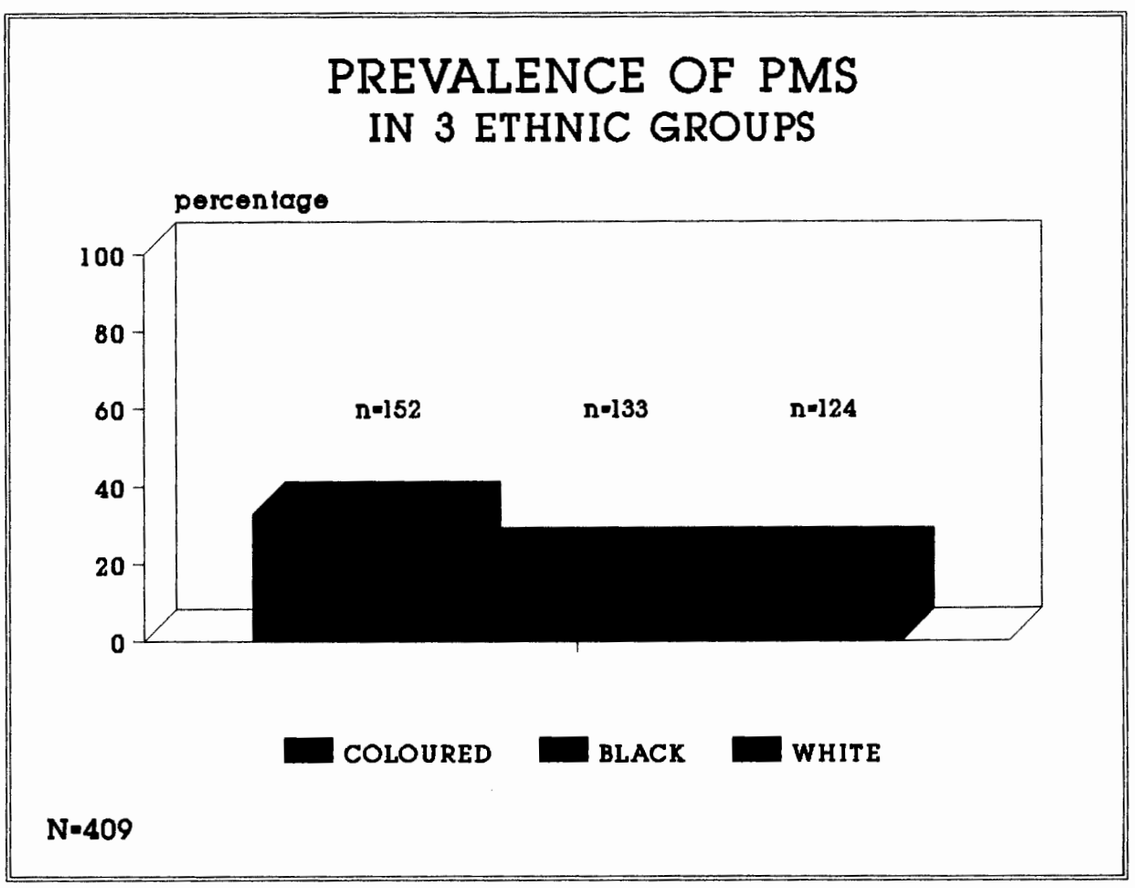
The prevalence of PMS in the three ethnic groups involved in the study, is tabulated below.

Table 4.7

GROUPS N=409	PREVALENCE OF PMS n	%
COLOURED n=152	50	32.9%
BLACK n=133	28	21.1%
WHITE n=124	26	21.0%

There were a significantly larger number of Coloured women with PMS than White or Black women (Chi-Square $X^2=7.11$, df=2, p=0.029). The difference in the prevalence of PMS between the White and Black subjects was not significant.

Figure 1



PMS PREVALENCE IN SOCIAL CLASS SUBGROUPS

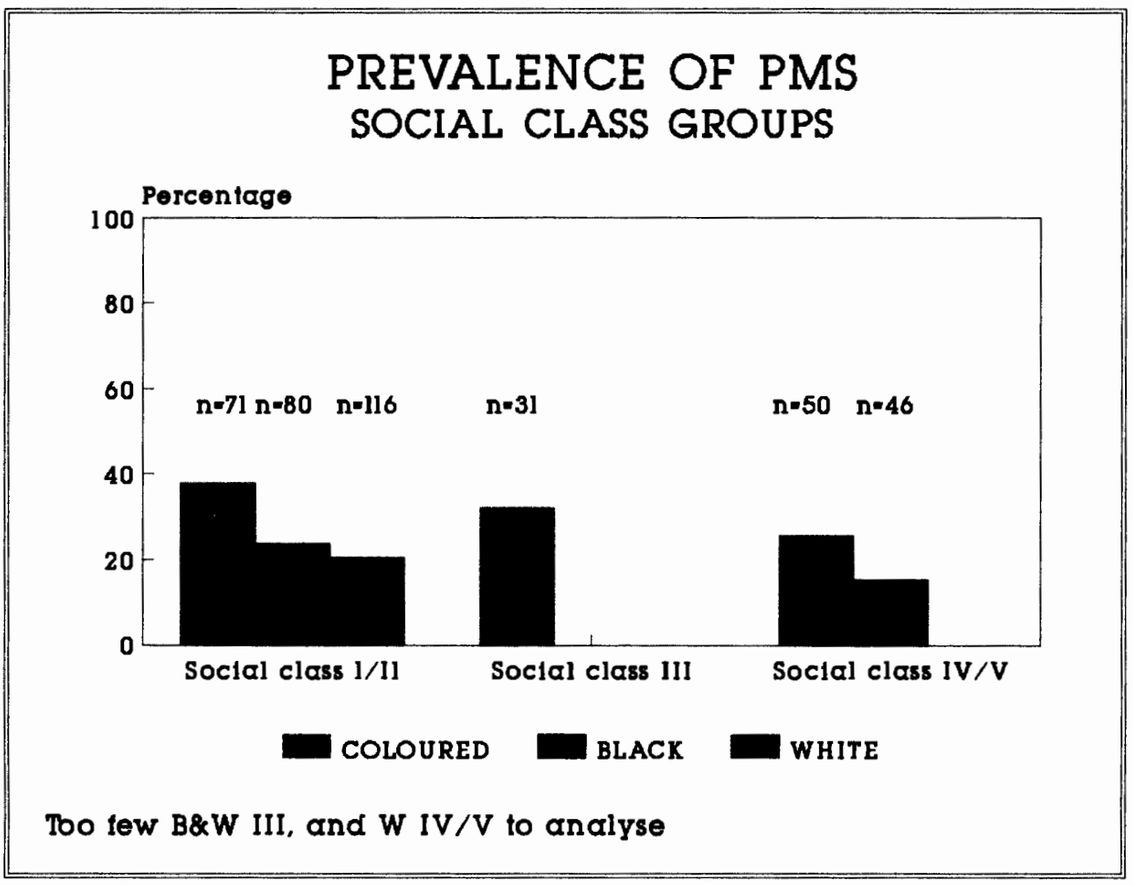
The ethnic groups were further divided into social classes and prevalence figures compared. The results are shown in the table below. There were insufficient subjects for analysis in the group of social class III Black and White subjects, and social class IV/V White subjects.

Table 4.8

GROUP	I/II	III	IV/V	CHI-SQ.
COLOURED	27/70 38.0%	10/31 32.3%	13/50 26.0%	X^2=1.93 df=2 p=0.381
BLACK	19/80 23.8%		7/46 15.2%	X^2=2.98 df=1 p=0.255
WHITE	24/116 20.7%			
CHI-SQUARE	X^2=7.20 df=2 p=0.027		X^2=3.126 df=1 p=0.077	

Figure 2 overleaf graphically illustrates the above results.

Figure 2



PMS PREVALENCE IN SOCIAL CLASS SUBGROUPS

In social class I/II there were significantly more Coloured women than White or Black women with PMS. Comparing the social class IV/V subjects, there was no significant difference in the prevalence of PMS between the Coloured and Black women although proportionally fewer Black women have PMS than Coloured women.

In the Coloured group of women, social class did not significantly alter the prevalence of PMS, although there was a downward trend in the prevalence from social class I/II to social class IV/V.

Similarly, in the Black group of subjects, there was a trend towards a lower prevalence of PMS in the social class IV/V Black women, which was not statistically significant.

SUMMARY

The prevalence of PMS in a group of UCT and UWC staff and students was 25.4%. When comparing ethnic groups for prevalence, the Coloured group of women had a significantly higher prevalence of the Premenstrual Syndrome than the White or Black women. There were no significant differences in prevalence within ethnic groups when social class was taken into account, although there was a trend towards women in social classes III and IV/V having a progressively lower prevalence of PMS. When the three groups of social class I/II women were compared, the Coloured women had a significantly higher prevalence of PMS than the Black or White women. There was no significant difference in PMS prevalence between the two groups of social class IV/V women. Comparisons of prevalence rates could not be made between subgroups of social class III women, as the Black and White groups were too small to analyse meaningfully.

DISCUSSION

PREVALENCE

While in this study, the diagnosis of PMS rested on retrospective symptom ratings, it is acknowledged that a diagnosis of PMS should be confirmed by prospectively rated symptoms (Magos and Studd 1986, Steege Halbreich et al 1982). However, other workers have supported the use of retrospective symptom ratings (Moos 1968, Rouse 1978).

In Moos' work, the cycle phase each woman was in when she completed the MDQ was coded, and correlations between this phase and symptom-scale scores were calculated. Analysis revealed that none of the correlations between cycle phase and premenstrual symptoms were significant.

The present study was preliminary work on PMS prevalence in a group of south african women and it was felt that the distribution and retrieval of correctly completed prospective symptom reports, was not feasible from either a financial or a time point of view. This may be more suitable for a future study.

It is acknowledged that the results of this study are not generalizable, as the population studied, namely university employees and students, was not representative of the general population. In addition, although the subjects were all drawn from one universe, there are differences between subgroups of women (eg the Coloured group was significantly older) which may have affected results.

From the literature, it is evident that different authors have shown varying prevalence figures for PMS, most of them higher than the 25.4% prevalence shown in this group of women. A French study in 1979 (van Keep and Lehert), showed that 38% of women regularly experienced premenstrual symptoms (ie **not** PMS), and less than 10% had "very much trouble" with their symptoms. These authors assessed 25 premenstrual symptoms.

In contrast, Hargrove and Abraham (1982) in a prevalence study on women attending a Gynaecological clinic in the USA, found that 50% of women met their criteria for PMS. These authors used a 4-point scale of severity for symptom rating, and assessed 19 symptoms. The criteria for a diagnosis were mild or absent symptoms in the follicular phase, and moderate to severe symptoms in the luteal phase of the cycle, with the luteal phase score greater than the follicular phase score by at least 4 points. The definition used in this study, implies that PMS occurs only in ovulatory cycles, which, as mentioned earlier is not the case, as women with anovulatory cycles can experience profound premenstrual changes.

Johnson (1988), in a mail survey on a selected population of Iowa nursing graduates, showed that 16.6% of women experienced moderately severe to severe premenstrual symptoms. These figures were based upon the type of medical care a subject had sought, and the effect of the symptoms on the sufferer's ability to work. Moderately severe symptoms were those for which a prescription drug had been taken, or a subject reporting that she had not worked as well as usual. Severe symptoms were defined as those which resulted in a change of employment or the frequent inability of the respondent to work. Both Johnson's and Abraham's criteria illustrate the variation in diagnostic criteria and symptom assessment in the evaluation of PMS.

In a Finnish study by Widholm and Kantero (1971), 68% of women reported premenstrual irritability, swelling, fatigue and dysmenorrhoea. However, no scale of severity was used in assessing the symptoms, so this figure is probably rather high, and would include women with premenstrual **symptoms** as well as Premenstrual **Syndrome**. In the U.K., Sampson and Jenner (1977) reported a prevalence of 71%. However, the sample was very small (n=19), and included women with "very slight" symptoms so it is probably not a comparable assessment.

A survey was done in Australia by Wood et al (1979) on the menstrual cycle characteristics of 2343 women attending the Shepherd Foundation. Wood reported that 75% of women have premenstrual tension. A closer look at this study revealed that this figure was obtained from asking one question only, and the figure of 75% included almost 30% of women who "... occasionally experienced being nervous or tense before a menstrual period..." The response to this question was a reflection of the subjects' perceptions, and probably included women who attributed symptoms to being premenstrual, which may have been related to other factors.

As mentioned earlier, premenstrual tension is just one aspect of Premenstrual Syndrome, and more than one question ought to be asked of patients in order to evaluate the prevalence of PMS. While many women may have premenstrual **tension**, it may only become a problem if it is accompanied by a multitude of other symptoms, so although 75% of women perceived themselves to have "premenstrual nervousness or tension", there was probably a far smaller number of women in this group with PMS.

The only African study which specifically dealt with the prevalence of PMS, was the work by Cenac et al, in Niger, who showed that 31% of women (including rural and urban, literate and illiterate women), described socially debilitating severe premenstrual symptoms. The questionnaire which was employed

had to be suitable for both literate and illiterate subjects, and this may have been too broad a target population. A scale of 1-4 for severity was used.

Many of the prevalence studies do not specify their exact criteria for a PMS diagnosis, and report prevalence figures for **symptoms** of PMS rather than for the Syndrome (Woods et al 1982a, Sutherland and Stewart). Janiger (1972), was one author who stated that he would rather assess a premenstrual distress symptom score than assign a PMS prevalence figure in his cross-cultural study, because of the arbitrary nature of a definition for PMS.

Instead, he described individual premenstrual symptoms, and compared them between various groups of women, as he felt this was more meaningful.

Although a PMS diagnosis rests largely on the description of symptoms and their severity, by describing **symptom** prevalence and not PMS prevalence, the issue of criteria for a PMS diagnosis is side-stepped. This is a flaw in the design of many studies, because the cyclical occurrence of premenstrual symptom/s, is by no means equivalent to, or comparable with, a diagnosis of Premenstrual Syndrome. In addition, whilst one or two premenstrual symptoms may not constitute a problem to a woman, if she suffers from a host of symptoms, they may well become disruptive in her life.

While the present study **has** established a prevalence figure for PMS, it is obviously difficult to compare this figure with results of other workers who have used different diagnostic criteria. One study with similar diagnostic criteria for PMS, was the work of Martin et al (1983) who evaluated PMS in four European countries. The criteria used in their study were the presence of at least three symptoms occurring in the post-ovulatory phase of the cycle, and relieved after menstruation

started (the present study included women who did not **necessarily** have a luteal phase of their menstrual cycle eg there were 94 oral contraceptive pill users in this study). However, in his study, the PMS diagnosis was the starting point, and these authors studied symptomatology of women who met the criteria for a PMS diagnosis as opposed to establishing prevalence of PMS. The present study included women who may not have ovulatory cycles.

A comparison of the symptomatology from this study with findings of other workers will be dealt with in Part V.

ETHNIC VARIATIONS

In the university population studied, ethnicity does play a role in PMS prevalence, and there is a trend towards a lower prevalence of PMS in social classes III and IV/V. Unfortunately, the data available for the social class III and IV/V women was limited, as there were too few Black women in social class III and too few White women in social class III and IV/V for comparisons to be made.

According to the literature, other cross-ethnic studies have failed to show a difference in prevalence of PMS between ethnic groups (Stout 1986, Ferguson and Vermillion, 1957), while symptomatology has shown some cross-ethnic (Woods et al 1982, Boyle 1987) and cross-cultural differences (Janiger 1972). Details of these differences will be elaborated upon in the section on Symptomatology (Part V).

In one study (Ferguson and Vermillion 1957), the authors seemed to use the term "Premenstrual Tension" synonymously with "Premenstrual Syndrome", listing a variety of symptoms, including somatic changes, under the heading of Premenstrual

Tension. They did not use a scale of severity for symptom-rating, and found remarkably similar numbers of Black and White women suffering from symptoms of the syndrome (91% and 92% respectively). Once again, this was a study which merely established **symptom** prevalence, and not prevalence of the syndrome.

SOCIAL CLASS

Although social class has been mentioned as a demographic detail in studies on PMS (Sampson and Prescott 1977, Woods et al 1982a), or as a variable affecting premenstrual symptomatology (Boyle 1987), there is apparently no study which has attempted to link PMS prevalence with social class. Martin et al (1983) suggested that there was a need for a study to explore the possible link between PMS and social class.

In this study, the trend towards a lower prevalence of PMS in social classes III and IV/V, may be related to the fact that these women may have different health expectations and demands than the social class I/II women who are often better educated and have greater social and financial resources.

Although not of great importance in the present study on this group of South African women, as 272 or 66.5% of participants had **never** been pregnant before, patterns of reproduction in different groups of women, may be significant in PMS research. For example, in Africa (particularly rural areas), fertility is equated with wealth and potency (Charlewood 1972), and many women live under the influence of repeated pregnancy/breast-feeding/ weaning/new pregnancy cycles. This results in long periods of amenorrhoea (Cenac 1987), and hence far fewer opportunities for women to become aware of premenstrual changes which may occur. Cenac et al suggested that this

factor accounted for some of the differences between the rural illiterate women, and urban literate women, in his their study in Niger.

In contrast, the more educated women are more likely to have smaller families and practise contraception in order to space pregnancies. This results in these women having far more menstrual cycles in their reproductive years, and subsequently more opportunities to become aware of cyclical premenstrual changes.

In this group of women the effect of education on family planning and career ambitions may override the cultural expectations that she needs to prove her fertility.

That many women in the present study had never heard of PMS highlights the need for a diagnosis based upon symptom reporting, as opposed to asking a women whether she experiences PMS - even though a woman may not have heard of PMS she would still be able to articulate descriptions of symptoms. Although the perceptions of each women are important (when asking whether she experiences a condition or not), specific symptom reports provide useful information about PMS symptomatology.

There was a trend towards a decreasing prevalence of PMS from social class I to V, as well as a trend in the social class III and IV/V subgroups towards fewer women having heard of PMS (than the social class I/II subjects). This is probably a reflection of social background, and social learning, and may have resulted in the reporting of fewer and less severe symptoms (by the subjects in these subgroups), which may ultimately have affected the prevalence of PMS.

These and other factors possibly associated with PMS will be dealt with in Part III which follows.

Chapter 4

Part III. POSSIBLE FACTORS ASSOCIATED WITH PMS

DEMOGRAPHIC, MEDICAL, OBSTETRICAL, AND GYNAECOLOGICAL FACTORS

As mentioned earlier, other studies have shown various factors to be associated with the prevalence of PMS. In this study some of these factors were assessed in an attempt to link them with the prevalence of PMS.

The risk factors selected and analysed were: social class, age, educational status, income, stress (financial work/study, relationship, political-social, and health-related stress), job and relationship satisfaction, the existence of a confidant, having sought Psychiatric help (through consultation of a Psychiatrist or a Psychologist), contraceptive use, gravidity and parity, menstrual cycle variables, duration of premenstrual symptoms, and knowledge/perceptions about PMS.

The association between each of these factors and the diagnosis of having PMS, was calculated using Odds ratios with 95% confidence limits. The sample was stratified (into ethnic groups and social classes), and a Common Odds Ratio calculated for each variable. If the factor did increase the risk of PMS, it applied across all three ethnic groups.

Interspersed throughout the questionnaire, were 6 "guideline" questions" (including 2 paired questions), aimed at pointing to a PMS diagnosis. These questions were "hidden" throughout the questionnaire to elicit a spontaneous response from participants. The answers to these questions were analysed for Odds ratios to see how strongly they were associated with the prevalence of PMS.

The following three Tables, contain the Odds ratios for the risk factors assessed. The association of the five selected stresses to PMS is dealt with in Part IV of results. Significant associations between each variable and the prevalence of PMS are demarcated by an asterisk ("*").

DEMOGRAPHIC FACTORS AND THE PREVALENCE OF PMS

When Odds Ratios are used it is convention to select one parameter against which each of the other options is compared; for example, when attempting to associate age with PMS prevalence, the 25-29 year group (this group had the highest prevalence of PMS) was chosen as the parameter against which other age groups would be compared for an association with PMS.

As demonstrated below, only 2 demographic factors were significantly associated with an increased prevalence of PMS. Firstly, in this sample, women aged 25-29 years compared to 18-24 years, had a greater chance of being diagnosed as having PMS. Secondly, women earning in excess of R2500 per month (compared to less than R1000 per month), had a greater chance of being diagnosed as PMS sufferers. Social class and educational status were not significantly associated with PMS prevalence.

Table 4.9

RISK FACTOR ASSESSED (Q)	ODDS RATIO	95% CONFIDENCE LIMIT
Social Class: III cf I/II (Q5)	0.80	0.37;1.7
IV/V cf I/II	0.64	0.36;1.2
Age: 25-29 yrs cf 18-24 yrs (Q12)	2.3	1.2;4.3 *
25-29 yrs cf 30-45 yrs	1.4	0.84;2.4
Educational Status: (Q10)		
Std 9/10 cf Std 8 or less	1.1	0.56;2.2
Tertiary cf Std 8 or less	1.2	0.50;2.7
Tertiary + Std 9/10 cf <Std 8	1.1	0.57;2.2
Income: R1000-R2500 cf <R1000 (Q11)	2.0	0.71;5.7
>R2500 cf <R1000	3.3	1.1;9.9 *

PREVALENCE OF PMS AND AGE

The relationship between age and PMS was further explored, because the Coloured group of women was significantly older than the other two groups of subjects. The sample was stratified into 3 age categories, and prevalence rates compared for each age-group of the three ethnic groups.

Considering the fact that many of the respondents were students, the first group included all the subjects under 25 years of age, the second consisted of women between 25 and 29 years of age, and the older group comprised women aged over 30 years. These groups can broadly be seen as a student group (18-24 years), a post-graduate/working group (25 - 29 years), and an older group of mainly working women (30 - 44 years).

The prevalence of PMS in the three age categories demonstrated a peak in the subjects aged 25-29 years (see Table 4.10). The Coloured subjects had the highest prevalence of PMS in **all** three age groups (see Table 4.10), and this was most marked in the 25-29 year group. However, this difference was not statistically significant (Chi-square X^2=5.280 df=2 p=0.071).

For each ethnic group comparisons were made between age categories. The prevalence of PMS differed significantly between the three categories of Coloured women (X^2=7.653 df=2 p=0.022), while there were not significant differences in prevalence between the three age-groups of Black or White women.

When considering these results, it should be remembered that the sub-groups of women in some age categories, contained rather small numbers eg there were only 13 Black women aged from 25 - 29 years, and this may have biased these results.

PREVALENCE RATES OF PMS AT DIFFERENT AGES

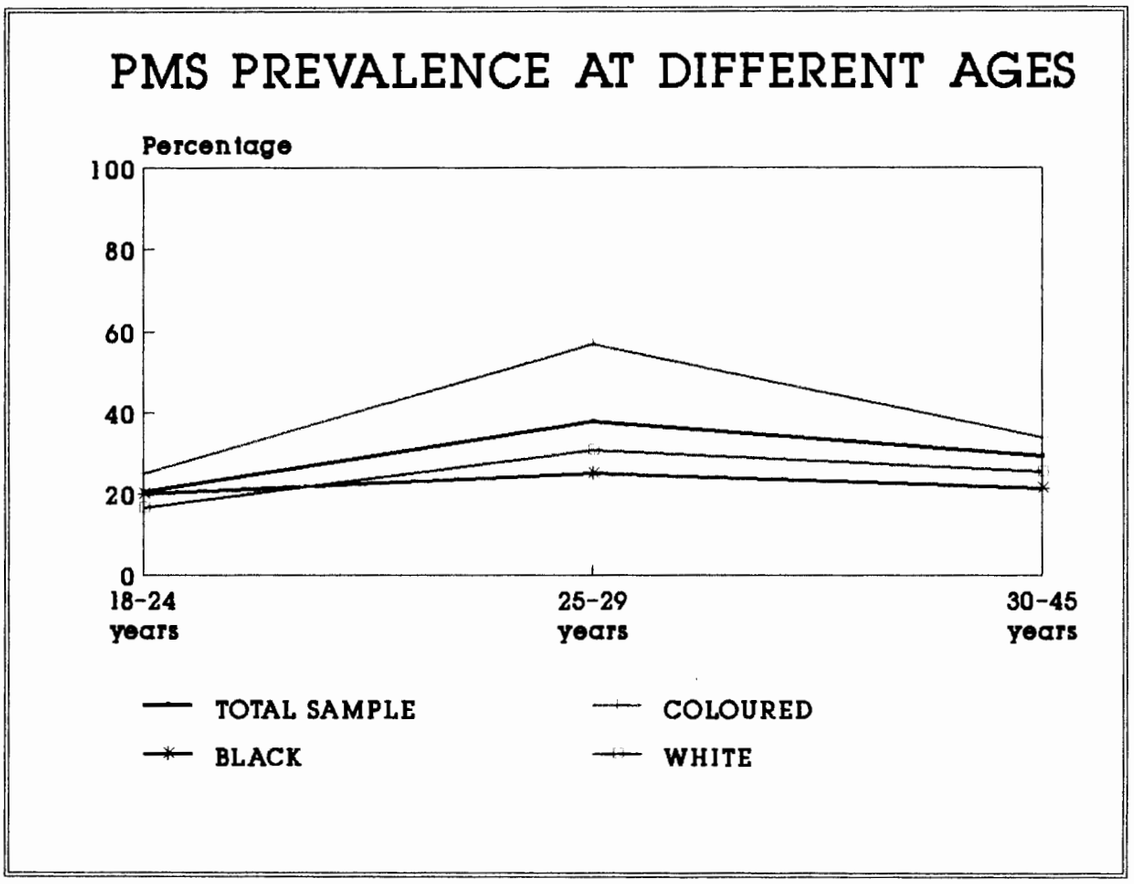
The table below demonstrates the variation in the prevalence of PMS for the three ethnic groups at different ages.

Table 4.10

AGE (yrs)	TOTAL N=409	C n=152	B n=133	W n=124	CHI-SQ df=2
18-24	20.5% (40/239)	25% (18/72)	20% (19/95)	16.7% (12/72)	X^2=1.55 p=0.459
25-29	37.9% (22/58)	57.1% (12/21)	25% (6/24)	30.8% (4/13)	X^2=5.28 p=0.071
>30	29.5% (33/112)	33.9% (20/59)	21.4% (3/14)	25.6% (10/39)	

Figure 3 graphically illustrates the prevalence of PMS at different ages.

Figure 3



MENSTRUAL CYCLE VARIABLES WHICH MAY BE ASSOCIATED WITH PMS

The effect of the menstrual cycle phase of each women at the time of the interview, was assessed as a factor possibly associated with the prevalence of PMS (ie if a woman was actually premenstrual at the time of the interview, was she more likely to rate symptoms as strong or disabling, than a woman **not** in the premenstrual phase of the cycle). In other words, did menstrual cycle phase bias results in this prevalence study?

The menstrual cycle phase of each subject was calculated, by subtracting 14 (days) from the length of her menstrual cycle (she was asked how long her last menstrual cycle had been). Broadly speaking, 14 days is considered to be the length of the second half of the menstrual cycle, and if a subject was within 14 days of her next menstrual period she could be considered to be in the premenstrual phase of her cycle. An Odds Ratio was calculated for cycle phase versus having Premenstrual Syndrome. Odds ratios showed that if a subject was in the premenstrual phase of her menstrual cycle at the time of the interview, it was **not** associated with an increased prevalence of PMS (Odds Ratio 0.68, 95% confidence interval (041;1.1)) ie results of this study would not be biased by menstrual cycle phase.

The only menstrual cycle parameter which increased the chance of having PMS, was the reporting by subjects, of Menorrhagia ("heavy menstrual periods" - this was purely based upon each subject's subjective experience). In addition, if a woman said that she had problems with her menstrual cycle, she also had a greater chance of having PMS. Using no contraception (compared to **any** contraception) was associated with a lower prevalence of PMS.

Neither Gravidity and Parity was linked to PMS prevalence (comparisons were limited to three categories, namely G0 or "never pregnant", P0 or "no successful pregnancies", and >P0 meaning a "one or more successful pregnancies").

The table below demonstrates the association between menstrual cycle factors and the risk for PMS.

Table 4.11

RISK FACTOR ASSESSED (Q)	ODDS RATIO	95% CONFIDENCE LIMITS
Regular menses: If regular is subject more likely to have PMS ? (Q15)	1.2	0.66;2.1
Having problems with menses (cf NOT having problems) (Q16)	3.2	2.0;5.1 *
Dysmenorrhoea (cf NO dysmenorrhoea) (Q17)	1.5	0.94;2.5
Irregular menses (cf regular) (Q18)	1.1	0.54;2.4
Menorrhagia (cf NO menorrhagia) (Q19)	2.7	1.2;5.8 *
Gynaecological Surgery (Q21) Infertility (Q22)	small	numbers too to analyze
Gravidity (>G0 cf G0) (Q32) Parity (>P0 cf P0) (Q33)	1.05 0.96	0.65;1.7 0.59;1.6
Contraception within last 3 months a)hormonal cf non-hormonal (Q40) b)pills cf no pills c)triphasic cf all other pills d)no contraception cf all forms	 1.4 1.6 0.76 0.59	 0.87;2.4 0.94;2.7 0.30;1.9 0.36;0.94 *

PMS PREVALENCE IN OC VERSUS NON-OC USERS

The prevalence of PMS in subjects using the oral contraceptive pill (OC) was slightly higher than in the subjects not on OC: there were 92 subjects using OC in this study, and 28 (30.4%) of them were diagnosed as having PMS. Of the remaining 317 women **not** using OC, the prevalence for 308 was calculated (9 women had used more than 1 method of contraception in the

previous three months so were excluded), and was found to be 23.7% (ie 73/308). The difference in prevalence between OC and non-OC users was however, not significant (see Odds ratio in above table).

GUIDELINES TOWARDS A PMS DIAGNOSIS CALCULATED AS RISK FACTORS

A "positive" answer to each of the "guideline" questions, as listed in the chapter on Subjects and Methods, showed a strong association with the prevalence of PMS.

Table 4.12

GUIDELINE QUESTIONS ASSESSED AS RISK FACTORS FOR PMS (Q)	ODDS RATIO	95% CONFIDENCE LIMITS
What sort of problems (unprompted) Premenstrual Tension/ Syndrome/ Symptoms (Q20)	4.1	2.3;7.4 *
How do you know a period is about to begin:PMS/symptoms (Q23) Do you symptoms worry you (Q24)	3.2	2.0;5.1 *
Do you feel physically/emotionally unwell before a period (Q42) (yes cf no)	6.7	4.1;11.2 *
Do you know you are about to start a period before it begins (Q56) Do you feel better once it has started (Q57)	4.1	2.5;6.8 *
Perceive symptoms as problem (Q18B)	9.0	5.2;15.5 *
Have you had PMS in the last 3 months (yes cf no n=275) (Q23B)	9.8	5.6;17.0 *
Answered 4 or more guidelines for a PMS diagnosis (yes cf no)	8.8	5.1;15.2 *

In spite of Table 4.12 showing strong associations between the guideline questions and PMS prevalence, these questions were not a guaranteed method of establishing a PMS diagnosis in all women.

The majority of women diagnosed as having PMS, 90.4% (94/104), responded positively to one or more of the guideline questions. Of the women with PMS, 49% (51/104) gave positive responses to four or more of the guideline questions towards a PMS diagnosis.

Conversely, many "non-PMS" subjects, 43.6% (133/305), did not answer **any** guidelines positively for a PMS diagnosis, and only 10.2% (31/305) of "non-PMS" subjects answered four or more guideline questions positively for a PMS diagnosis. These guideline questions were used as an indicator in this study, and cannot be the sole method for diagnosing PMS, as many women who did not meet the criteria for PMS, matched the guidelines aimed at pointing to a PMS diagnosis.

In addition, the guidelines are not of practical use in the clinical setting, where a woman will present with specific complaints, and the clinician will assess the severity of her condition by taking a thorough history. Ultimately, she will be managed according to the symptoms she has described.

A measure of agreement between each guideline and the PMS diagnosis was calculated, using Kappa, in which agreement between two properties is measured (Fleiss 1981). If there is complete agreement Kappa =+1, and values greater than 0.75 represent excellent agreement, values below 0.40 represent poor agreement. Fair to good agreement beyond chance is represented by values between 0.40 and 0.75.

The first four guidelines showed poor agreement between their responses and being diagnosed as PMS (0.25, 0.24, 0.35, and 0.25 respectively). The fifth and sixth guidelines (Q18B, Q23B) showed the strongest agreement (0.47 and 0.43). The agreement between the PMS diagnosis and having "correctly" answered 4 guidelines was reasonable (0.42) but not strong enough to rely upon for a diagnosis of PMS.

KNOWLEDGE ABOUT PMS AS A RISK FACTOR FOR PREVALENCE

As demonstrated below, having never heard of PMS was not associated with a lower prevalence of PMS (according to the criteria used in this study). In addition, if a subject knew someone with PMS, it was not associated with an increased risk of PMS.

The duration of symptoms was strongly associated with PMS, as was having ever sought medical help for PMS.

Table 4.13

KNOWLEDGE OF PMS ASSESSED AS RISK FACTOR FOR PMS (Q)	ODDS RATIO	95% CONFIDENCE LIMITS
Ever heard of PMS (yes cf no) (Q58)	1.5	0.89;2.6
How long before menses do symptoms start: 3-7 days cf 1-2 days	4.5	2.5;8.1 *
8-14 days cf 1-2 days (Q19B)	19.4	6.9;54.2 *
Know anyone who has PMS (Q20-22B) n=275 (ie 132 **not** heard of PMS + 2 subjects answered "don't know)	2.2	0.73;6.6
Ever sought Medical Advice for PMS (Q27B)	7.7	4.0;14.8 *

PERCEPTIONS ABOUT PMS

From the analysis of the questionnaire some other facts emerge which are worth considering :

There were 74 women from the total sample who perceived their premenstrual symptoms as a problem (compared to 104 women diagnosed as having PMS). Fifty two of those 74 were actually diagnosed as having PMS. Conversely, some women who were **not** diagnosed as PMS **did** see their symptoms as a problem (22 out of 305 non-PMS cases).

It is interesting to note that 51 (49.04%) of the women diagnosed as PMS, did **not** perceive their symptoms as problematic. One PMS subject perceived her symptoms as a mild problem.

Not everyone perceiving their symptoms as a problem had been for medical help. This probably has to do with severity of symptoms experienced (Friedman and Jaffe 1985, Johnson et al 1988), and possibly cultural factors which may influence whether or not symptoms are perceived as pathological (Zola 1966).

Finally, four other factors were assessed for their association with PMS: having ever consulted a Psychologist of Psychiatrist, job satisfaction, the satisfaction derived from a very close relationship, and the presence of a confidant.

CONSULTATION OF A PSYCHOLOGIST OR PSYCHIATRIST

Forty nine of the total sample (12%) reported having at least once consulted either a Psychologist or a Psychiatrist. The peak incidence of this occurrence was in the White group with 27 of the 124 (21.8%) subjects having seen a Psychologist or Psychiatrist, followed by the Black subjects 11 of 133 (8.3%) and the Coloured subjects, 11 out of 152 (7.2%).

There was a trend towards more of the social class I/II women having consulted a Psychologist or Psychiatrist. The majority of women 35/49, 71.4% had had counselling by way of therapy, and 30/49 (61.2%) felt their treatment had been beneficial.

There was no association between having PMS and having Consulted a Psychologist or Psychiatrist. (Odds Ratio 1.06 with 95% Confidence Interval 0.46;1.9)

JOB-SATISFACTION

Odds Ratios were calculated for having PMS, and describing job-satisfaction above or below the median. There was no association between PMS and a description of job-satisfaction above the median (compared to below the median) ie if a woman described above-median job-satisfaction it did not increase her chance of having PMS. (Odds Ratio 0.74 with 95% Confidence Interval 0.47;1.2)

RELATIONSHIP-SATISFACTION

The association between relationship-satisfaction (description of ...) and PMS was dependant upon ethnicity. While there was not an association between PMS and descriptions of relationship-satisfaction in the Coloured and Black women, this relationship in the White subjects almost achieved significance (Odds ratio 0.43, with 95% Confidence Interval 0.16;1.1)

CONFIDANT

Only 19 women (4.6%) of the total sample, when asked with whom they discussed their problems, said they had no confidant. The lack of a confidant was not associated with the prevalence of PMS (Odds Ratio 1.5 with 95% Confidence Interval (0.55;3.9).

SUMMARY

Certain variables were assessed as possible risk factors which could increase an woman's chance of suffering from PMS. While the Coloured subjects had a significantly higher prevalence of PMS, the variables assessed here do not account for their significantly higher prevalence of PMS. Social class comparisons revealed a trend towards less PMS in women from social classes III and IV/V, than women from social class I/II.

There was a peak prevalence of PMS in the 25-29 year age group, and women in that age group had a significantly greater chance of being diagnosed PMS, than women aged 18-24 years. Educational attainment was not associated with an increased risk of PMS, but women earning in excess of R2500 per month (compared to <R1000), were at greater risk of suffering from PMS. Having ever heard of PMS, or knowing someone with PMS was not associated with an increased risk of PMS.

Mentioning that one had problems with one's menstrual cycle, and subjective reports of menorrhagia, were associated with an increased risk of PMS, and the use of any form of contraception (as opposed to no contraception) increased the risk of PMS. Regularity of menses, and gravidity and parity were not associated with an increased prevalence of PMS.

The duration of premenstrual symptoms was strongly associated with PMS prevalence. The longer before a menstrual period symptoms appeared, the greater were the chances of an individual being diagnosed as having PMS. If an individual had sought Medical advice for her symptoms, or had "positively answered" four or more guidelines towards a PMS diagnosis she was more likely suffer from PMS. There was also a very strong association between **perceiving** symptoms as a problem and being diagnosed as having PMS.

DISCUSSION

PREVALENCE OF PMS BETWEEN ETHNIC GROUPS

The reason why Coloured women had a higher overall prevalence of PMS than the Black and White women is not evident from this analysis. The tendency of this group towards a higher prevalence of PMS, was demonstrated from some of the responses to other questions in the interview. Significantly more Coloured than White women mentioned PMS (or described symptoms consistent with PMS) as one of the problems they had with their menstrual cycle. In addition, significantly more Coloured than White women said that they had problems with their menstrual periods.

However, no single factor assessed in this study explains the difference in PMS prevalence between the Coloured subjects and the rest of the sample, as all Odds Ratios calculated applied to the total sample of 409 (with the exception of two factors, which are specified). The prevalence of PMS was higher in the Coloured group of women at any age.

The higher prevalence of PMS in the Coloured women may be linked to cultural factors not assessed in this study. Studies have shown that patterns of symptoms may vary systematically between different cultures (Zola 1966). It has been shown that Italians are more likely to complain of pain than Irish people, who are more stoic, and will not complain unless suffering serious discomfort (Zola 1966). The possibility exists that as a group, Coloured women are more sensitive to premenstrual changes that occur, or verbalize them more readily, resulting in a higher prevalence of PMS. It is uncertain whether there is a greater complaining tendency in the Coloured subjects, as they should then have complained of greater stress, which (as will be discussed later), the Black

women described more frequently as strong or disabling, rather than the Coloured women.

One could speculate as to the impact of attribution, social learning, and expectations on the prevalence of PMS. These variables cannot be disregarded in the light of findings by Ruble (1977) and Parlee (1974), as mentioned earlier, and there may also be different patterns of responses in different ethnic groups, as mentioned earlier. Zola concluded "...that there are at least two ways in which signs normally defined as indicative of a problem in one group, may be ignored in another: the first is related to the actual prevalence of the sign, and the second to its congruence with dominant or major value-orientations."

If in one group for example, premenstrual crying or irritability was very common, it may be seen as a norm, and therefore not something to consult a doctor about.

It is impossible to measure the extent to which the group of women studied, rated symptoms which they **thought** they had experienced (or **ought** to experience).

Koeske and Koeske (1975) found that women are likely to ascribe negative changes premenstrually to the fact that they are premenstrual, while positive changes which occur in the premenstruum, are more likely to be attributed to environmental or other causes.

What remains unclear however, is to what degree, beliefs and cultural factors transmitted in a women's youth affect her reports of symptoms (Brooks Gunn and Ruble 1982, Paige 1973). There may be a fundamentally different response to the questionnaire by the Coloured women in this sample, compared to the Black and White women, resulting in the significantly higher prevalence of PMS in the Coloured women.

SOCIAL CLASS

Although a few authors have briefly suggested social class to be associated with the prevalence of PMS (Martin et al 1983, Boyle et al 1987), the precise definitions of social class, and a description of comparisons made, are lacking. In a Finnish study on 8000 Finnish girls and their mothers, Widholm and Kantero could not find an association between social class and Premenstrual Syndrome (1971). These authors were vague about the definition of social class, and as Finland is a highly socialized egalitarian society, the issue of social class may not be as evident as in, for example, the South African setting, where there is a very marked difference between social classes. There appears to be no published work with which to compare the findings from this study, on social class differences in PMS.

In the present study, there was a trend towards a lower prevalence of PMS in social classes III and IV/V. Unfortunately, there was too little data on White women of social class III and IV/V, and Black women of social class III for meaningful analysis to be done.

As mentioned earlier, all of the students in the study were coded into their respective social class by virtue of their father's occupation (or mother's if they did not know their father). There may be some factors relating to the social environment in which a child is raised, which affect the prevalence of PMS, either directly or indirectly. For example, a young woman in the home of a labourer, compared to a school-teacher, is probably not taught the same things about menstruation, because the respective parents have very different educational backgrounds (not to mention social and financial resources, and health expectations).

As the Black group of women in this study, were younger, and comprised proportionally more students (88%) than the other two ethnic groups (Coloured 37.5%, White 59.7%), the educational background of parents was probably most pertinent to that group, as they were until relatively recently, still under parental influence.

It is interesting to note that in the Black group of women, 98% of the 133 women had a minimum education of Standard nine (usually a matric, as 87.2% of the sample were university students), yet the prevalence of PMS dropped from 23.8% (social class I/II) to 15.2% (social class IV/V) between the two groups of Black women, who had achieved a similar standard of education. This highlights the possibility that social background may be influential in premenstrual symptom expression, and hence PMS prevalence.

While the definition of different social classes in this study was given earlier on, it should be remembered that as result of statutory discrimination in South Africa, Coloured, Black and White women belonging to the same social class may have very different resources and environmental stresses to contend with. For example, a White schoolteacher and a Black schoolteacher, are both classified as social class I subjects, but may differ with regard to various environmental factors like, housing, daily stresses and neighbourhood security. So, although there were large numbers of social class I/II women from all three ethnic groups, the peculiarities of the South African situation should be taken into account when evaluating results based on social class comparisons.

DEMOGRAPHIC FACTORS

The peak prevalence of PMS was in the 25-29 year age group, which is slightly different from the findings of Hargrove and Abraham (1982) who showed a peak prevalence in the third decade of life. Keye et al (1986) and Steege et al (1985), also showed a peak prevalence of PMS in women in their early thirties. In this study, the group of women under 25 years of age had the lowest prevalence of PMS, which is in accordance with work by other researchers (Timonen and Procope, 1971, Hargrove and Abraham, 1982) who found more premenstrual complaints in older women.

This study showed that women earning a family income in excess if R2500 per month have a greater chance of suffering from PMS, than women earning less than R1000 per month. The effect of income on PMS prevalence has not been shown before although it has been associated with certain symptom variations (Woods et al 1982a, Boyle et al 1987).

As income is one of the underlying dimensions in determining social class (Stopforth and Schlemmer 1978), this may account for the trend towards a higher PMS prevalence in social class I/II women (compared to social class III and IV/V women), because this group of women would contain far more subjects earning R2500 or more per month, than the other grades of social class.

Although formal education was not linked to an increased prevalence of PMS, there may be factors associated with upbringing, or social learning which may shape a women's perceptions about the menstrual cycle (Woods et al 1982b, Brooks et al 1977, Paige 1975) and affect symptom reports and PMS prevalence. In addition, aspirations are nurtured from a young age, and are largely dependant upon the stimuli provided in a girls home.

OBSTETRIC AND GYNECOLOGICAL FACTORS AND PMS

Various studies have attempted to link menstrual problems with PMS. In this study, reports of menorrhagia were linked to an increased risk of PMS, which was also shown by Woods et al (1982a) and Brooks-Gunn (1985). Steege et al (1985), found no relationship between menorrhagia and PMS.

Dysmenorrhoea was not related to the risk of PMS in the study presented here. Greene and Dalton's (1953) finding was similar. In contrast, Steege et al (1985), found that severity of PMS correlated positively with dysmenorrhoea (see also Coppen and Kessel 1963, Paulson 1961, Herzberg and Coppen 1970).

As in the Cape Town study by Gunston (1986a and 1986b), and the USA study by Woods et al (1982a), this study showed no link between PMS and parity. Parity has however, been reported by other workers (Moos 1968) to be a factor associated with the prevalence of PMS. It should be noted that relationship between gravidity and parity and PMS, was only explored for two broad categories of women, those who were had ever been pregnant, and those who had never been pregnant. Parity was assessed only in terms of whether or not a subject had ever had a successful pregnancy.

Further analysis may have revealed significant associations between gravidity, parity and PMS, but this level of differentiation was felt to be appropriate for this study.

This study has shown that use of the oral contraceptive pill is not associated with an increased risk for PMS. The use of hormonal compared to non-hormonal contraceptives was also not associated with an increased risk of PMS, but using no contraception (as opposed to any form) was associated with a lower risk of having PMS.

The role of oral contraceptives in PMS has been the subject of numerous studies (Widholm and Kantero 1971, Paige 1971, Silbergeld and Brast 1971, Morris and Udry 1972, Stevenson et al 1983, Andersch 1985), but there is not conclusive evidence to link PMS with oral contraceptive pill use. Kutner and Brown (1972) found a significantly lower percentage of severe Premenstrual depression in pill-users compared to women who had never used the pill. Goldzieher et al (1971) found that most of the nervousness, depression and weight gain noted premenstrually , was either co-incidental, or else associated with the psychological impact of taking oral contraceptives, rather than any pharmacological effect.

"GUIDELINE" QUESTIONS AND PMS

The "guideline" questions are of limited value in assessing PMS. The possibility does exist, that if one had used different criteria for diagnosing PMS, the level of agreement between the diagnosis and guideline questions, could have been better. The obvious difficulty underlying this is that there is **no** absolute measure with which one can diagnose PMS.

As mentioned earlier, not all the subjects diagnosed as having PMS, perceived their symptoms as a problem. Ultimately, however, the knowledge and perceptions of each woman are very important, more so than a diagnosis, because if a woman perceives her symptoms as a problem, the opinion of the researcher is not actually what matters, as the PMS-sufferer has to live with the symptoms which she sees as problematic.

The attempts to link PMS with having consulted a Psychologist or Psychiatrist, the absence of a confidant, and job-satisfaction, showed that there was not a significant association between these variables and PMS. In the White subjects, the association between relationship-satisfaction and PMS was almost significant, while in the other two groups the association was not significant.

The possible role of stress factors in PMS prevalence will be discussed in Part IV of Results.

Chapter 4

Part IV. STRESS AND PMS

The subjects were asked to describe how stressful (if at all) various factors had been in their lives over the previous three months. According to the description, a value was assigned (by the author) for each variable, and these scores were compared for inter and intra-group differences. The values assigned were between 1-6 ie. from no stress at all (1) to overwhelming stress which the individual cannot cope with (6). In addition, Odds Ratios with a 95% Confidence Interval were calculated to assess the association between each stress described as strong or disabling (rated 5 or 6 by the author), and the prevalence of PMS.

The reason for analysing scores of 5-6 was because all women live under some degree of stress, and while a certain amount of stress is beneficial, if stress becomes excessive, it is thought to possibly affect a women's expression of symptomatology, and her chance of suffering from PMS.

DESCRIPTIONS OF STRESS AS STRONG TO OVERWHELMING

The table below demonstrates clearly that for all five stress factors assessed, more of the Black women described stress as strong or disabling than their Coloured and White counterparts. These differences were significant for 3 of the 5 stresses. The asterisk ("*") indicates significant differences between ethnic groups.

Table 4.14

STRESS	N=409	C n=152	B n=133	W n=124
FINANCE	125 30.6%	37 24.3%	* 68 51.1%	20 16.1%
WORK	110 26.9%	34 22.4%	40 30.0%	36 29.0%
R-SHIPS	69 16.9%	24 15.8%	24 18.0%	21 16.9%
POL/SOC	42 10.2%	11 7.2%	* 22 16.5%	9 7.3%
HEALTH	41 10.0%	12 7.9%	* 23 17.3%	6 4.8%

* FINANCE: In Pairwise comparisons, significantly more Black women than White women (X^2=34.909 p<0.001) reported severe to overwhelming financial stress. Significantly more Black subjects than Coloured subjects described severe to overwhelming stress (X^2= 21.80 p<0.001), from financial matters.

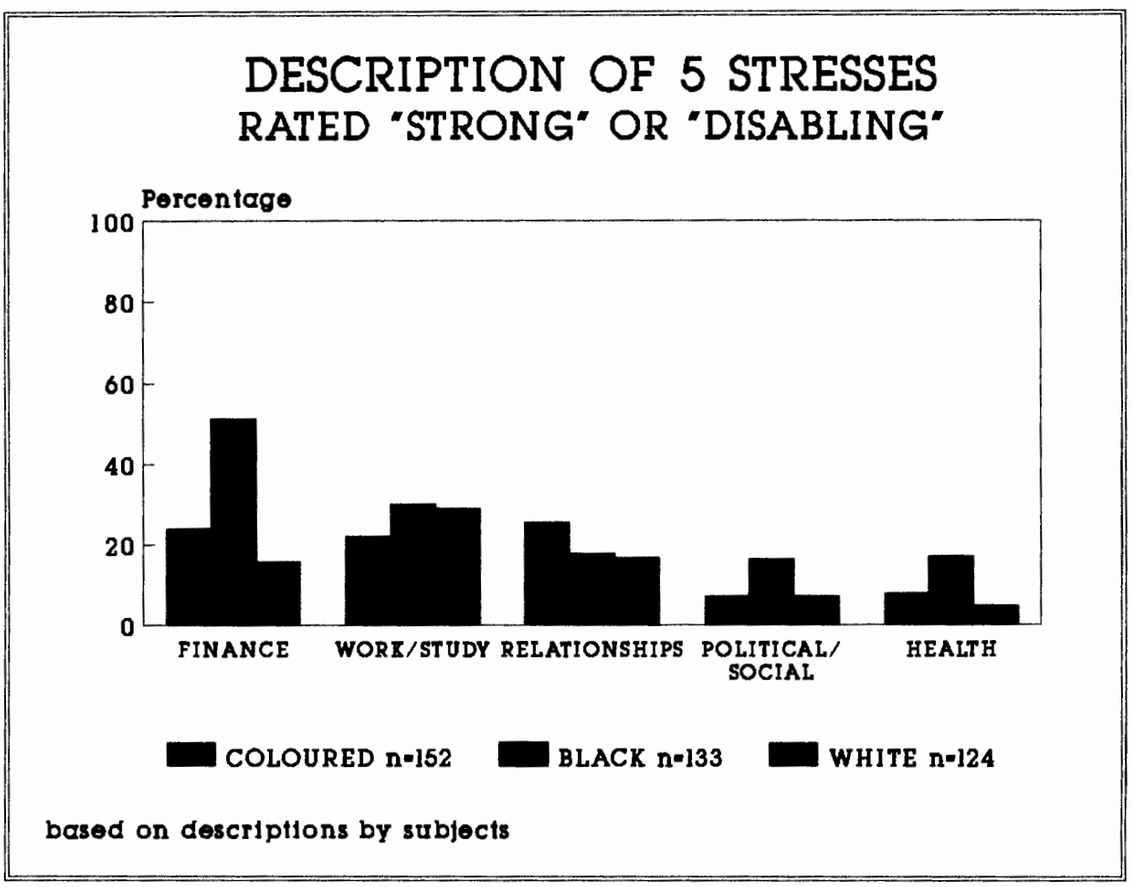
* POLITICAL/SOCIAL STRESS: In Pairwise comparisons, significantly more Black women than White women reported severe to overwhelming stress (X^2=5.214 p=0.022);significantly more Black women than Coloured women reported severe to overwhelming stress (X^2=5.998 p=0.014).

* HEALTH: In Pairwise Comparisons, significantly more Black than White women (X^2=9.943 p=0.002) and significantly more Black than Coloured women (X^2=5.816 p=0.016) reported severe to overwhelming stress.

No significant differences were demonstrated between the three groups of women for work/study stress or relationship stress. There were also no significant differences between the White and Coloured subjects for any of the stress factors assessed.

The illustration below demonstrates the percentage of women in each ethnic group who described stresses as strong or disabling.

Figure 4



TOTAL STRESS SCORES

The scores for all five stress factors were added together, and a total score for stress obtained, for each subject. When the three ethnic groups were compared, there were significant differences in total stress scores between the groups (Median Test X^2=26.14 df=2, p=0.0001).

Further Pairwise Comparisons revealed where the differences lay: the Black subjects had significantly higher total stress scores than both the White subjects (X^2=23.68 df=1, p=0.0001), and the Coloured subjects (X^2=13.69 df=1, p=0.0002). The difference between the Coloured and White women for total stress scores was not significant (X^2=0.54 df=1, p=0.4617).

TOTAL STRESS SCORES FOR EACH ETHNIC GROUP

Table 4.15

TOTAL SCORE	COLOURED n=152	BLACK n=133	WHITE n=124
25%	10	13	11
MEDIAN	12.5	16	13
75%	16	18	15

DESCRIPTIONS OF STRONG TO OVERWHELMING STRESS BY SOCIAL CLASS

STRESSES RATED AS 5-6 IN SOCIAL CLASS I/II

Significantly more Black women in social class I/II described financial and health-related stress as strong or disabling, than their Coloured or White counterparts.

Table 4.16 **n=267**

STRESS FACTOR	C I/II n=71	B I/II n=80	W I/II n=116	SIGNIFICANT DIFFERENCE (df=1)	p-value
FINANCE	21.1% 15	42.5% 34	14.7% 17	[1]B>W X^2=19.70 B>C X^2=7.839	0.001 0.005
WORK/STUDY	28.2% 20	27.5% 22	31.0% 36		
RELATION-SHIPS	18.3% 13	17.5% 14	17.2% 20		
POLITICAL/ SOCIAL	14.1% 10	16.3% 13	6.9% 8		
HEALTH	5.6% 4	16.3% 13	5.2% 6	[2]B>W X^2=6.637 B>C X^2=4.243	0.010 0.039

[1] Pairwise Comparison

[2] Fisher's Exact

STRESSES RATED AS 5-6 IN SOCIAL CLASS IV/V

Significantly more Black social class IV/V women than Coloured women of that group, described finance and political/social stressors as strong or disabling. In addition, there was also a trend for more Black women to describe the remaining 3 stressors as strong or disabling, even though these differences did not achieve significance.

Table 4.17 **n=96**

STRESS	COL IV/V n=50	BLACK IV/V n=46	SIGNIFICANT DIFFERENCE
FINANCE	32% 16	63% 29	Chi-Square X^2=9.272 df=1 p=0.002
WORK/STUDY	20% 10	32.6% 15	
RELATION-SHIPS	16% 8	21.7% 10	
POLITICAL/ SOCIAL	2% 1	19.6% 9	Fisher's Exact p=0.005
HEALTH	10% 5	17.4% 8	

STRESSES RATED 5-6 WITHIN THE COLOURED GROUP OF SUBJECTS

The only difference within the Coloured group of women, when stressors were described, was that significantly more of the social class I/II than the social class III or IV/V women described political/social stress as severe or disabling.

Table 4.18 **n=152**

STRESS	CI/II n=71	C III N=31	C IV/V n=50	SIGNIFICANT DIFFERENCE
FINANCE	21.1% 15	19.4% 6	32% 16	
WORK/STUDY	28.2% 20	12.9% 4	20% 10	
RELATION-SHIP	18.3% 13	9.7% 3	16% 8	
POLITICAL/ SOCIAL	14.1% 10	0	2% 1	Fishers's Exact I/II > III p=0.030 I/II > IV/V p=0.026
HEALTH	5.6% 4	9.7% 3	10% 5	

STRESSES RATED 5-6 WITHIN THE BLACK GROUP OF SUBJECTS

There was a trend for more social class IV/V Blacks to describe each one of the stressors as strong or disabling, than their social class I/II counterparts. However, the difference between the two groups was only significant for one stressor, namely finance.

Table 4.19 **n=126**

STRESSOR	B I/II n=80	B IV/V n=46	SIGNIFICANT DIFFERENCE
FINANCE	42.5% 34	63% 29	Chi-Sq X^2=4.93 df=1 p=0.026
WORK/STUDY	27.5% 22	32.6% 15	
RELATION-SHIPS	17.5% 14	21.7% 10	
POLITICAL/ SOCIAL	16.3% 13	19.6% 9	
HEALTH	16.3% 13	17.4% 8	

THE ASSOCIATION BETWEEN PMS AND STRESSES RATED 5 OR 6

Odds ratios were calculated, and adjusted for ethnic group, in an attempt to link descriptions of strong or disabling stress with the risk of PMS. Two stresses, namely Finances and Work (or Study) showed a significant association with PMS. In addition the association between strong or disabling Health stress and PMS was almost significant. There was no association between Political/Social stress and PMS, and the association between Relationship stress and PMS was dependant on ethnic group and social class, and these groups were too small to analyse as Odds Ratios. The results are tabulated in Table 4.19 with significant relationships marked by an "*".

Table 4.20 **n=409**

STRESS	ODDS RATIO	95% CONFIDENCE INTERVAL
FINANCE	2.3	1.4;3.8 *
WORK/STUDY	1.9	1.2;3.1 *
RELATIONSHIPS	depends on	ethnic gp & class
POLITICAL/SOCIAL	1.1	0.54;2.3
HEALTH	2.0	0.98;4.0

Finally subjects were asked whether they felt that they had been under more stress than usual in the previous three months. Between 46.6% and 55.% of the women felt that they had been more stressed than usual in the previous three months, with the White subjects having the highest percentage of women feeling that they had been more stressed than usual (55%). There was apparently no trend towards any particular social class of women reporting having been more stressed (in the past three months) than any other social class. In addition, as the survey was conducted between January and April 1990, the students had not had exam pressures to contend with.

It is interesting to note that more of the Black women, who had consistently rated individual stresses significantly higher than the other two groups, did **not** consider themselves to have been under any more stress than usual in the previous three months. These women presumably **always** have fairly high levels of stress and the previous three months were not perceived as any worse than usual. This in itself may have a bearing on the symptom-ratings, and will be dealt with in Part V of results.

SUBJECTS PERCEIVING THEMSELVES AS MORE STRESSED THAN USUAL

Table 4.21

GROUP	N=409	I/II	III	IV/V
COLOURED	77 50.7%	43 60.6%	14 45.2%	20 40.0%
BLACK	62 46.6%	36 45.0%		23 50.0%
WHITE	69 55.6%	64 55.2%		

SUMMARY OF STRESS

When reviewing the sample of 409 women, the total stress scores of the Black women were significantly higher than those of the Coloured and the White women. The Black women described significantly more strong or disabling stress than the White and the Coloured women, for three of the five factors assessed: Finance, Political/Social, and Health stress. Considering stresses described as strong or disabling, there were no significant differences between the White and Coloured women for any of the five stress factors assessed.

Significantly more Black social class I/II women than White or Coloured women of social class I/II described Financial and Health stress as strong or disabling. There were no significant differences between the White and Coloured social class I/II women for any of the stress factors described as strong or disabling.

Social class IV/V Black women complained significantly more of strong or disabling Financial, and Political/Social stress than the Coloured women in that social class.

The only social class distinction in the Coloured group was in Political/Social stress when more social class I/II subjects rated Political/Social factors as strong or disabling than social class IV/V Coloured women.

Significantly more social class IV/V Black women rated Financial stress as strong or disabling than social class I/II Black women. In addition, there was a trend towards more class IV/V Blacks describing the other four stressors as strong or disabling. As mentioned earlier, there were insufficient numbers in the White group of subjects for comparisons across social classes.

Finally, two stresses, namely financial and work/study stress, were significantly associated with the prevalence of PMS in this study.

DISCUSSION

While some authors have suggested the possible role of stress in PMS (Freeman et al 1988, Most et al 1982), no findings have as yet supported this theory. This study has demonstrated a significant association between two of five selected stresses, when described as strong or disabling, and the prevalence of PMS: financial stress, and work/study stress. In addition, a third stress, namely Health, was almost significantly associated with PMS.

Significantly more Black women than White or Coloured women described three stress factors as severe or disabling.

It should be considered that while significantly more Black women than Coloured and White women complained of severe or disabling financial stress, the Black group comprised largely students, who were more heavily subsidized in terms of bursaries, loans etc, than the other 2 groups. The descriptions of strong or overwhelming financial stress by significantly more of the Black women, may in part be, because there were so many more Black than White and Coloured students, and students are almost invariably financially stressed.

Health-related stress appeared to be a major concern in the Black women studied. The health-related stress scores revealed that significantly more social class I/II Black women described health stress as severe or disabling, than their Coloured and White counterparts.

One would not have expected so many social class I/II Black women to describe health as a severe or disabling stress, as they supposedly would have access to more medical facilities than the women from social class IV/V. The social class IV/V Black women also described proportionally more severe or disabling health stress than their Coloured counterparts, however, the difference was not statistically significant.

Considering that the Black group as a whole was significantly younger than the Coloured group, and that it was a fairly homogenous group of women, with regard to student status (but not social class), the possibility exists that these Black women are more conscious of health, and perceive it as a major stress, because they have been exposed to an environment (eg. there is inadequate housing, and a social class I/II family may be forced to live in similar conditions to a social class IV/V family) in which the birth rate and infant mortality rate is higher, and death from disease and trauma is much higher, than in for example, the White community.[3]

It is not surprising that Black women had significantly higher total stress scores than the Coloured or White women in the sample. Black women have probably been more affected than most other women in South Africa (including Cape Town) by the inequalities in this society ranging from inferior schooling, living and working conditions to low family incomes.

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3 Birth rate per 1000 in South Africa in 1985:
Black 40 Coloured 28.6 White 16.3
Infant Mortality rate per 1000 in 1985:
Black 80 Coloured 40.7 White 9.3 (RSA Yearbook 1987/88)

Figures for the Western Cape for 1982:
Total of 15 653 live births, 455 infant deaths -
Infant Mortality rate per 1000 in W. Cape in 1982:
Black 39.7 Coloured 32.2 White 7.4 (Rip 1984)

It is more likely that a woman who has grown up under conditions like this, will describe at least some stress in her life as strong or disabling, than someone who has not experienced this degree of deprivation. This is underlined by the fact that there was a trend for the social class IV/V Black women to describe even more stress for each of the stress factors than their social class I/II counterparts, who were by definition, from a background of greater social resources. In addition, this group consistently described more severe or disabling stress than their social class IV/V Coloured counterparts.

While acknowledging the high stress of the women from particularly social classes IV and V, and apparently all Black women in this sample, one should not disregard the stress experienced by other women in the sample, even though their stresses may not all be as fundamental to survival. While the aspirations of women from say, social class I, may differ from those of women in disadvantaged social classes, the meeting of those aspirations may be just as stressful for a woman from social class I as they are for a woman from social class V. In addition, there is less social support for the woman from social class I/II compared to social class IV/V, eg a student from a social class I background may not be eligible for grants to fund her university education.

The effects of the stress under which the Black women in this sample have been living may well account for their relatively low premenstrual distress scores. It is possible that the Black women and women from disadvantaged social classes have been so severely stressed, that recognizing, and acting upon adverse premenstrual changes is not a priority like it might be for someone who does not have the stress of such basic needs to cope with.

Alternatively, Black women may be more likely to accept their premenstrual symptoms as a relatively normal occurence (see discussion in Part III) ie. there may be a cultural basis for lower total premenstrual symptom scores (Zola 1966). In the Israeli study by Most et al (1982), the author commented that stress may play a role in the prevalence of PMS, and suggested that the excessive stress Israeli women have lived under for the past 20 year, may contribute to the relatively few complaints of premenstrual symptoms (less than 30% complained of **any** symptoms). In addition, there is no Hebrew word for Premenstrual Syndrome.

The prevalence of PMS showed a downward trend towards social classes IV/V. It is unfortunate that there were insufficient White women from this social class group, to facilitate further comparisons. The stresses experienced by women from this social group may override the cyclical physical and psychological changes which occur. They are possibly philosophically accepted as the sufferer knows that they are only temporary, unlike many other discomforts she has to contend with.

Chapter 4

Part V. SYMPTOMATOLOGY

In this chapter, the analysis of premenstrual symptom-reports, appears in the following sequence:

1. RANKED ORDER OF REPORTED SYMPTOMS
   - i) modified Menstrual Distress Questionnaire symptoms
   - ii) unprompted premenstrual symptoms - these were elicited early on in the interview, before the MDQ symptomatology was rated

2. SYMPTOM SCORING
   - i) Ethnic comparisons
     - a) total MDQ scores
     - b) cluster scores
     - c) individual symptoms
   - ii) Social class comparisons
     - a) total MDQ scores
     - b) cluster scores
     - c) individual symptoms

3. COMPARISON BETWEEN PMS AND "NON-PMS" GROUPS

1. RANKED ORDER OF SYMPTOMS DESCRIBED BY SUBJECTS

Symptomatology was assessed by using the modified Menstrual Distress Questionnaire (MDQ), containing 35 specific symptoms of PMS. Each participant was asked to rate each symptom as she had experienced it, over the previous three menstrual cycles. The rating-scale, as described in the chapter on Subjects and Methods, was from 1 (no experience of the symptom) to 6 (a disabling degree of severity, the subject being unable to function normally).

In addition, earlier in the questionnaire, each participant had been asked without prompting, what her three worst (if any) premenstrual symptoms were. These symptoms were encoded and the frequency of each volunteered symptom was calculated, for the total sample of 409 subjects.

a) MENSTRUAL DISTRESS QUESTIONNAIRE SYMPTOMS

When the symptoms from the MDQ were analysed, and scores from 2-6 included as evidence of a symptom (ie this included some women with the mildest expression of symptoms), the most frequently reported symptoms for the total sample were:

* irritability (64.8%)
* painful breasts (60.6%)
* skin disorders (57.9%)
* cramps (51.8%)
* tension (48.9%)
* swelling (60.9%)
* mood swings (60.1%)
* weight gain (57.7%)
* fatigue (50.1%)
* depression (47.4%)

When scores of 5-6 (ie. severe or disabling) were considered, the ranked order of symptoms changed slightly, with one "new" symptom, "change in eating habits", appearing from the MDQ, which was not in the top ten scoring symptoms when scores of 2-6 were analysed.

The order of frequency of severe or disabling symptoms as reported by 409 women:

* irritability (15.4%)
* change in eating habits (12%)
* depression (11.5%)
* swelling (10.8%)
* skin disorders (9%)
* mood swings (14.9%)
* painful breasts (11.5%)
* weight gain (11.2%)
* tension (9%)
* cramps (9%)

Although "change in eating habits", was not in the top ten most frequent symptoms scoring 2-6, it was still high in the rankings of that list, in twelfth place. In addition, fatigue which was not in the top ten of the severe or disabling list, was twelfth on that list. The rankings for **any** experience of a symptom, as opposed to strong or disabling experience of a symptom, were therefore very similar. Premenstrual irritability was clearly the commonest symptom reported by the sample, at the top of both lists of ranked symptoms.

A full table of the ranked MDQ symptoms, including the ethnic and social class symptoms frequencies, appears in Appendix 2 together with the reports of unprompted symptoms.

b) UNPROMPTED SYMPTOMS

All the un-prompted or volunteered symptoms co-incided with items from the MDQ. Ten symptoms from the MDQ were not mentioned by any of the participants when asked to volunteer their three worst premenstrual symptoms. The MDQ symptoms which were never mentioned in the un-prompted section were:

- insomnia
- confusion
- distractibility
- anxiety
- cold sweats
- forgetfulness
- lowered judgement
- accidents
- lowered work performance
- lowered motor co-ordination

These were all minor complaints when rated on the MDQ, and were rated by less than 2.5% of subjects as severe or disabling. The only exception was anxiety which was scored as severe or disabling by 5.9% of the sample.

When the subjects were asked to name their three worst symptoms, no scale of severity was used, and therefore very mild symptoms may have been mentioned by some of the respondents, as their worst symptoms. If a women had severe PMS, she would have only mentioned her three worst symptoms, although she may have had **more** than three very bad symptoms.

In the unprompted section on symptoms, 106 subjects said they had **no** premenstrual symptoms. Of the remaining 303 women in the sample, there were only 101 who spontaneously named three premenstrual symptoms, 110 could name 2 symptoms and the remaining 92 named only one premenstrual symptom without prompting.

Although in, 106 women said they had no premenstrual symptoms, later on in the interview it was revealed that just 13 subjects did not rate any symptoms from the MDQ above "1" (ie 13 women had experienced no symptoms at all in the previous three months).

In addition, while 101 women mentioned 3 premenstrual symptoms without prompting, there were 104 women in the sample classified as having PMS, on the grounds of 3 or more MDQ symptom scores of 5 or 6. Not all 104 "PMS diagnosed" subjects spontaneously named three premenstrual symptoms[1], so there was a subset of women who had named three symptoms without prompting, but were **not** diagnosed as having PMS.

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[1] Of those diagnosed **PMS**,
50 (48.1%) named 3 symptoms
31 (29.8%) named 2 symptoms
14 (13.5%) named 1 symptom
9 (8.7%) could not name any symptoms spontaneously
Conversely, of those diagnosed **not PMS**,
97 (31.8%) named no symptoms
79 (25.9%) named 1 symptom
78 (25.6%) named 2 symptoms
51 (16.7%) named 3 symptoms spontaneously

2. SYMPTOM SCORING

i) ETHNIC COMPARISONS

a) TOTAL MDQ SYMPTOM SCORING

The minimum possible score on the MDQ is 35 and the maximum 210. The total symptom scores for each subject were calculated and ethnic groups compared.

The groups of White and Coloured women had total symptom scores which were similar (Kruskall-Wallis $X^2<0.001$ df=1, p=0.9909), but the total score for the Black women was significantly lower than that of the White group (Kruskall-Wallis $X^2=5.14$, df=1 p=0.0234). The difference between the Black and the Coloured group (Kruskall-Wallis $X^2=5.09$, df=1 p=0.0240), was statistically significant. These difference will be further explored to establish which clusters and individual symptoms differed between the groups. Tabulated below are the median scores of the three groups.

TOTAL MDQ SCORES - COMPARISONS BETWEEN ETHNIC GROUPS

Table 4.22

PERCENTILE	TOTAL n=409	COLOURED n=152	BLACK n=133	WHITE n=124
25%	44	44	42.5	47
MEDIAN	56	60	52	58.5
75%	74	78.75	67.75	74.5

b) SYMPTOM CLUSTER SCORES

The 35 items from the MDQ constituted 6 symptom clusters. These clusters were derived by Moos (1968). One symptom "change in eating habits" did not fall into any cluster, and was therefore analysed under "individual symptoms". Details of cluster scoring were dealt with in chapter 2, Subjects and Methods. The six clusters with their symptoms were also.

Each subject had 6 cluster scores and these were compared between ethnic groups, and later between social classes.

The Ethnic breakdown of cluster scores tabulated overleaf, shows that there are no significant difference among the three ethnic groups for the Pain cluster or the two clusters named Behavioral change and Autonomic reaction. The latter two clusters approached, but did not achieve significance. The statistical values for each comparison are given in the table.

In the table below, the "*" denotes significant differences and the groups involved in that difference are mentioned below the table next to the appropriate number of "*".

COMPARISON OF SYMPTOM CLUSTER SCORES BETWEEN ETHNIC GROUPS

Table 4.23

CLUSTER	PERC-ENTILE	C n=152	B n=133	W n=124	MEDIAN TEST
PAIN	25% MD 75%	7 10 13.75	7 9 12	8 10 13	X^2=2.99 df=2 p=0.2239
CONCEN-TRATION	25% MD 75%	7 9 11	7 * 8 10	7 8 10.75	X^2=6.20 df=2 p=0.0451
BEHAVIOUR CHANGE	25% MD 75%	5 8 13	5 8 11	5 7 11	X^2=4.96 df=2 p=0.0836
AUTONOMIC REACTION	25% MD 75%	4 4 6	4 4 5.7	4 4 5	X^2=4.76 df=2 p=0.0926
WATER RETENTION	25% MD 75%	6 9 12	5 ** 7 10	7.25 10 14	X^2=16.6 df=2 p=0.0002
NEGATIVE AFFECT	25% MD 75%	10 15 27	10.5 ***14 20	12 16 26	X^2=7.26 df=2 p=0.0265

The Median test revealed:

* Black subjects scored significantly lower than Coloured subjects ($^{X}2$=5.81, df=1, p=0.0160)

** Black women scored significantly lower than White women ($^{X}2$=16.38, df=1, p=0.0001); Black subjects scored significantly lower than Coloured subjects (X^2=6.44,df=1, p=0.0111)

*** Black subjects scored significantly lower than White subjects (X^2=6.99, df=1, p=0.0082)

As illustrated in Table 4.23, there were only significant differences in three of the six clusters, and even then, the differences were not amongst all three groups of women. In the Concentration cluster, the Black women scored significantly lower than the Coloured women, (Median Test X^2=5.81 df=1 P=0.0160), but did not differ significantly from the White women. The White and Coloured subjects did not differ significantly for this cluster.

For Water Retention, while there was no significant difference between the White and Coloured groups, while the Black women scored significantly lower than both the White (Median Test X^2=16.38, df=1 P=0.0001), and the Coloured women (Median Test X^2=6.44, df=1 P=0.0111).

The White subjects scored significantly higher than the Black subjects for Negative Affect (Median Test X^2=6.99, df=1 p=0.0082) but not significantly differently from the Coloured group. There was no significant difference in scores between the Coloured and Black groups for Negative Affect (Median test X^2=3.25, df=1 p=0.0714).

SUMMARY OF CLUSTER SCORES

Three facts emerge from the comparison of symptom cluster scores: firstly, that there are **no** significant differences for **any** of the six clusters between the Coloured and White subjects; secondly, of 18 possible differences (6 clusters X3), among the three ethnic groups, there are 4 which are significant, so the similarities between the three groups far outweigh the differences for symptom cluster scores.
Thirdly, the Black subjects scored consistently lower than the White and Coloured subjects on retrospective symptom ratings.

c) **INDIVIDUAL SYMPTOMS**

Each of the 35 MDQ symptoms was compared with respect to ethnic group, and any rating between 2-6 was included as evidence of a symptom (in the preceding section where cluster scores were compared, median scores were used). Of the 35 MDQ symptoms, 25 showed no difference between ethnic groups. Of these 25, there were 5 symptoms[2] which approached, but did not quite achieve significance.

The ten symptoms which differed significantly among the three ethnic groups are tabulated overleaf in Table 4.24. The cluster in which the symptom belongs appears in brackets below each symptom. The ">" (greater than) sign represents "significantly higher than".

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2 Nausea and Vomiting (Chi-square X^2=5.249 p=0.072)
Take naps (Chi-square X^2=5.639 p=0.060)
Accidents (Chi-square X^2=5.400 p=0.067)
Painful Breasts (Chi-square X^2=5.543 p=0.063)
Loneliness (Chi-square X^2=5.781 p=0.056)

COMPARISON OF INDIVIDUAL SYMPTOMS BETWEEN ETHNIC GROUPS

Table 4.24 **N=409**

SYMPTOM	PAIRWISE COMPARISON	df=2	PROBABILITY
HEADACHE (Pain)	W > B C > B	X^2=4.714 X^2=7.251	p=0.030 p=0.007
BACKACHE (Pain)	W > B C > B	X^2=6.263 X^2=9.882	p=0.012 p=0.002
GENERAL ACHES PAINS (Pain)	B > C	X^2=10.359	p=0.001
WEIGHT GAIN (Water Ret.)	W > B C > B	X^2=13.457 X^2=5.072	p<0.001 p=0.024
SKIN DISORDERS (Water Ret.)	W > B	X^2=10.116	p=0.001
SWELLING (Water Ret.)	W > B C > B	X^2=18.772 X^2=12.316	p<0.001 p<0.001
CRYING (Neg. Affect)	W > B W > C C > B	X^2=60.395 X^2=17.541 X^2=17.353	p<0.001 p<0.001 p<0.001
RESTLESSNESS (Neg. Affect)	B > W	X^2=7.078	p=0.008
IRRITABILITY (Neg. Affect)	W > B C > B	X^2=21.277 X^2=9.670	p<0.001 p=0.002
TENSION (Neg. Affect)	W > B	X^2=6.496	p=0.011

As shown in Table 4.24, the symptoms differing among the ethnic groups, were from 3 clusters. For pain, and negative Affect, each ethnic group had at least **one** symptom (from the cluster) rated significantly higher than the other two groups, balanced by one rated significantly lower than the other two groups of women. For the third cluster, water retention, the Coloured and White subjects consistently scored significantly higher than the Black women.

ii) SOCIAL CLASS COMPARISONS

a) TOTAL MDQ SYMPTOM SCORES BETWEEN SOCIAL CLASSES

There were insufficient social class III Black (n=7) and White (n=4) women for a meaningful analysis to be done. In addition there were only 4 White social class IV/V subjects. These small numbers made comparisons across the social class III groups impossible, and limited the comparison between social class IV/V women to the Coloured and Black subjects. In addition, social class comparisons could not be made in the White group of subjects.

When total MDQ scores were compared between social classes, no significant differences were found within the three subgroups of Coloured subjects (Kruskall-Wallis X^2=2.89 df=2 p=0.2355), or between the 2 subgroups of Black women (Kruskall-Wallis X^2=0.24 df=1 p=0.6211). In addition, the total scores between the class IV/V Black and Coloured women were not significantly different (Kruskall-Wallis X^2=0.10 df=1 p=0.7552).

However, there were differences in total symptom scores, between the three social class I/II groups of women. The Kruskall-Wallis Test showed that the Black social class I/II women had total symptom scores significantly lower than both the White social class I/II women (X2=5.71 df=1 p=0.0169), and the Coloured social class I/II women (X^2=8.27 df=1 P=0.0040).

TOTAL MDQ SCORES - COMPARISONS BETWEEN SOCIAL CLASSES

The table below depicts the differences between the groups.

Table 4.25 **N=409**

SOCIAL CLASS	PER-CENT.	COLOURED n=152	BLACK n=133	WHITE n=124	KRUSKALL-WALLIS
I/II	25% MED 75%	48 61 81	41.25 51 66.75	47 58 74.5	X^2=9.47 df=2 p=0.0088
III	25% MED 75%	43 65 93			
IV/V	25% MED 75%	42.5 53.5 72.75	42.5 55.5 64.25		X^2=0.10 df=1 p=0.7552
KRUSKALL-WALLIS		X^2=2.89 df=2 p=0.2355	X^2=0.24 df=1 p=0.6211		

b) SOCIAL CLASS COMPARISONS FOR CLUSTER SCORES

There were no significant differences in symptom cluster scores, among the different social classes of Coloured women (Median Test X^2=2.89 df=2 p=0.02355), or Black women (Median test X^2=0.24 df=1 p=0.6211). No comparisons could be made within the White group, as there were too few White women in social class III and IV/V to analyse meaningfully.

There were also no significant cluster score differences between the Black and Coloured social class IV/V women.

There were no significant differences between the social class I/II women for Pain' Behaviour Change, or for Autonomic Reactions. The only significant cluster score differences in **any** of the social class comparisons, were

found between social class I/II subjects. The three clusters differing significantly are tabulated below.

SIGNIFICANT CLUSTER SCORE DIFFERENCES BETWEEN SOCIAL CLASS I/II SUBJECTS

Table 4.26 **n=267**

CLUSTER	SIGNIFICANCE	MEDIAN TEST	PROBABILITY
CONCENTRATION	C > B	X^2=13.05	df=1 p=0.0003
WATER RETENTION	W > B	X^2=12.14	df=1 p=0.0005
	C > B	X^2=8.77	df=1 p=0.0031
NEGATIVE AFFECT	W > B	X^2=6.46	df=1 p=0.0111
	C > B	X^2=4.82	df=1 p=0.0282

The cluster differences demonstrated above are consistent with those found in cluster comparisons of the whole sample of 409 women. This is probably because the social class I/II subjects formed a large proportion of the total sample.

c) SOCIAL CLASS COMPARISONS OF INDIVIDUAL SYMPTOMS

Symptoms were compared firstly between social classes of one ethnic group, and secondly within each social class (eg social class I/II Coloured, White and Black women compared) where numbers were large enough. As mentioned above, certain comparisons were not possible because of insufficient numbers in the Black and White groups. Individual symptom comparisons within the White group were not possible, and within the Black group, limited to social class I/II versus IV/V women.

When the three groups of Coloured women were compared for individual symptomatology, 8 symptoms differed significantly among the social classes. The trend was for social class I/II women to report significantly higher scores than III and for social class III to report significantly higher scores than social class IV/V women. In no cases did social class III or IV/V Coloured women report significantly higher scores than social class I/II Coloured women.

The significant differences between the groups of Coloured women are tabulated below.

DIFFERENCES IN SYMPTOMS WITHIN THE COLOURED GROUP COMPARING SOCIAL CLASSES

Table 4.27 **n=152**

SYMPTOM	PAIRWISE COMPARISON	df=2	PROBABILITY
LOWERED JUDGEMENT	I/II > III I/II > IV/V	X^2=5.846 X^2=10.910	p=0.016 p=0.001
ACCIDENTS	III > IV/V	X^2=6.364	p=0.012
WEIGHT GAIN	I/II > IV/V III > IV/V	X^2=4.459 X^2=7.065	p=0.035 p=0.008
ANXIETY	I/II > IV/V	X^2=5.836	p=0.016
IRRITABILITY	I/II > IV/V	X^2=8.597	p=0.003
MOOD SWINGS	I/II > IV/V	X^2=14.716	p<0.001
DEPRESSION	I/II > IV/V III > IV/V	X^2=11.007 X^2=7.918	p=0.001 p=0.005
TENSION	I/II > IV/V	X^2=9.581	p=0.002

Additional symptoms approaching statistical significance between the groups of coloured women were:

Forgetfulness (Chi-Square X^2=5.258, df=2 p=0.072)

Cold sweats (Fisher's Exact p=0.054)

Painful Breasts (Chi-Square X^2=5.579, df=2 p=0.061)

Crying (Chi-Square X^2=5.715,df=2 p=0.057)

SYMPTOM DIFFERENCES BETWEEN SOCIAL CLASS I/II AND IV/V BLACK WOMEN

In comparing the two subgroups of Black women, only two symptoms differed significantly different between social class I/II and IV/V Black women. (Fisher's Exact Test)

Table 4.28 **n=126**

SYMPTOM	COMPARISON	PROBABILITY
ACCIDENTS	IV/V > I/II	p=0.001
CRYING	I/II > IV/V	p=0.012

INDIVIDUAL SYMPTOM SCORES WITHIN SOCIAL CLASSES

Symptom scores between 2-6 were compared for the three groups of social class I/II women (n=267).

Twelve symptom scores differed between the social class I/II women, and the trend was for the White and Coloured class I/II women to score significantly higher than their Black counterparts, except for restlessness, where the Blacks rated significantly higher than the White and Coloured women.

SYMPTOM DIFFERENCES BETWEEN SOCIAL CLASS I/II SUBJECTS

Table 4.29 below demonstrates the differences between the social class I/II subjects. The ">" denotes "significantly more".

Table 4.29 **n=267**

SYMPTOM	PAIRWISE COMPARISON	df=2	PROBABILITY
BACKACHE	W > B	X^2=4.96	p=0.026
	C > B	X^2=5.851	p=0.016
ACCIDENTS	W > B	X^2=14.781	p<0.001
	C > B	X^2=13.349	p<0.001
AVOID SOCIAL ACTIVITIES	W > C	X^2=6.546	p=0.011
WEIGHT GAIN	W > B	X^2=13.941	p<0.001
	C > B	X^2=7.377	p=0.007
SKIN DISORDERS	W > B	X^2=7.884	p=0.005
PAINFUL BREASTS	W > B	X^2=6.316	p=0.012
	C > B	X^2=7.130	p=0.008
SWELLING	W > B	X^2=10.725	p=0.001
	C > B	X^2=8.129	p=0.004
CRYING	W > B	X^2=31.279	p<0.001
	C > B	X^2=12.488	p<0.001
RESTLESSNESS	B > W	X^2=6.316	p=0.012
IRRITABILITY	W > B	X^2=16.353	p<0.001
	C > B	X^2=13.99	p<0.001
MOOD SWINGS	C > B	X^2=6.321	p=0.012
TENSION	W > B	X^2=5.925	p=0.015
	C > B	X^2=8.012	p=0.005

SYMPTOM DIFFERENCES BETWEEN SOCIAL CLASS IV/V SUBJECTS

Only four symptoms differed significantly between the Black and Coloured women of social class IV/V.

Table 4.30 **n=96**

SYMPTOM		CHI-SQUARED TEST	df=1	PROBABILITY
HEADACHE	C > B	X^2=3.941		p=0.047
BACKACHE	C > B	X^2=3.941		p=0.047
GENERAL ACHES AND PAINS	B > C	X^2=5.680		p=0.017
CRYING	C > B	X^2=8.610		p=0.003

3. COMPARISONS BETWEEN PMS AND "NON-PMS" GROUPS

A comparison was made between the PMS and "non-PMS" groups, for the total symptom scores obtained from the modified MDQ. The scores are tabulated below.

Table 4.31

DIAGNOSIS	PERCENTILE	SYMPTOM SCORE
PMS GROUP (n=104)	25% MED 75%	77 87.5 104.75
NON-PMS GROUP (n=305)	25% MED 75%	42 50 61

The range of total scores for the PMS group was 51 to 146, and for the non-PMS group 35 to 114.

ETHNIC COMPARISONS BETWEEN PMS AND "NON-PMS" GROUPS

Table 4.32

GROUP	RANGE	PMS (n)	NON-PMS (n)
COLOURED (n=152)	25% MED 75%	73.75 85.5 (50) 103.5	41 48 (102) 61
BLACK (n=133)	25% MED 75%	70.75 83 (28) 99.75	40.5 49 (105) 58
WHITE (n=124)	25% MED 75%	86.5 99.5 (26) 113.25	44 53.5 (98) 64

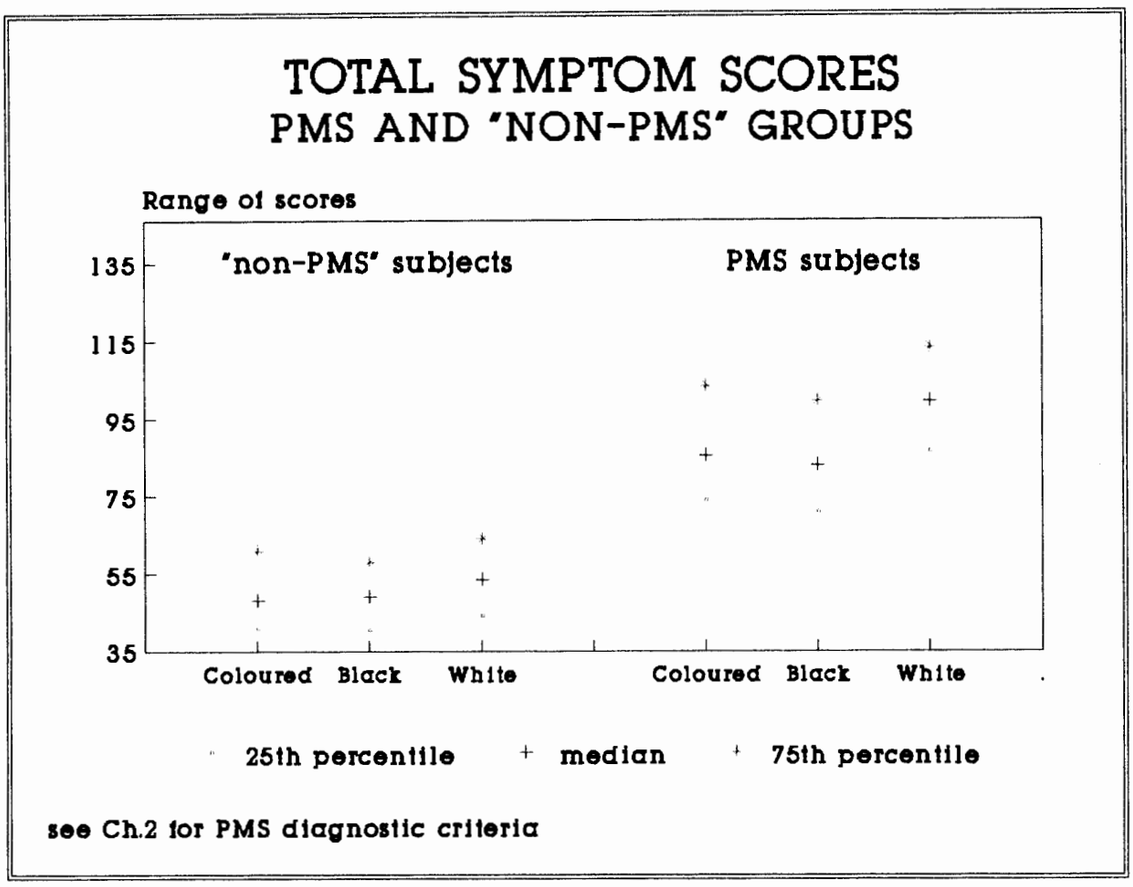
There was a downward trend in total symptom scores, from White to Coloured and from Coloured to Black women in the sample, with the Black and Coloured women scoring lower than the White women in both the PMS and non-PMS categories.

In the PMS category, the total scores of the White subjects were significantly higher than those of the Black subjects (Kruskall-Wallis X^2=5.31 df=1 p=0.0213). The difference between the White and Coloured women approached significance (Kruskall-Wallis X^2=3.82 df=1 p=0.0505), while the difference between the Black and Coloured subjects was not significant (Kruskall-Wallis X^2=0.53 df=1 p=0.4657).

In the "non-PMS" category the total scores between the White and Black subjects were significantly different (Kruskall-Wallis X^2=6.23 df=1 p=0.0890), between the White and Coloured subjects the difference approached significance (Kruskall-Wallis X^2=2.89 df=1 p=0.0890), and between the Coloured and Black women the difference was not significant (Kruskall-Wallis X^2=0.53 df=1 p=0.4652).

The illustration below graphically demonstrates the range of scores for PMS and "non-PMS" women, and shows that the White women's median scores were higher than the other two groups, in both the PMS and "non-PMS" groups.

Figure 5



SUMMARY OF SYMPTOMATOLOGY

There was a different response to the two methods of assessing symptomatology, with a far higher degree of complaining shown in the MDQ self-rating, than when subjects had to spontaneously name their three worst premenstrual symptoms. The MDQ symptoms most frequently endorsed as severe/disabling by the 409 subjects, were irritability, mood swings, a change in eating habits, painful breasts, depression, weight gain and swelling. Each ethnic group had a slightly different order of ranking for the commonest symptoms.

Symptom scores were compared between ethnic groups and between social classes, for a) total symptom scores (35 MDQ symptoms), b) 6 cluster scores, and c) individual symptoms.

ETHNIC COMPARISONS

Total MDQ symptom scores

The total symptom scores of the Black women were significantly lower than those of both the White and the Coloured women. The difference between the White and Coloured groups was not statistically significant.

Cluster scores

The three ethnic groups were not significantly different in their scores for three clusters, namely Pain, Autonomic Reaction, and Behavioral Changes. The three clusters which revealed significant differences were Concentration, Water Retention and Negative Affect.

Individual symptoms

Reviewing the sample of 409 women, there were 10 symptoms which were rated differently between the three ethnic groups. The White and Coloured women scored consistently higher than their Black counterparts, except for two symptoms, where the Black women scored higher. This was consistent with the earlier finding of the Black women having total symptom scores which were significantly lower than those of the White or Coloured respondents.

SOCIAL CLASS COMPARISONS

Total MDQ scores

When comparing total MDQ symptom scores between social classes, there were no differences within the Black or Coloured groups, but there were significant differences among the three sub-groups of social class I/II subjects. Here the social class I/II Black women's scores were significantly lower than their White or Coloured counterparts.

Cluster scores

Comparing social classes within ethnic groups, there were no differences within the Coloured or Black groups for any of the symptom clusters. However, there were significant cluster score differences between the social class I/II women for three clusters: Concentration, Water Retention and Negative Affect.

Individual symptoms

Within the Coloured group, eight symptoms differed between social classes, the grade I/II women generally scoring higher than the IV/V subjects, and for some symptoms the class III Coloured women rated higher than their social class IV/V counterparts. For no symptom did social class IV/V women rate higher than social class I/II or III Coloured women.

There were no significant differences between the Black social class I/II and IV/V womens' individual symptoms except for 2 symptoms: Accidents and Crying.

When comparing all class I/II women, the White and Coloured women, consistently scored higher than the Black women in eleven out of twelve symptoms. The exception was restlessness,in which the Black subjects scored higher.

When comparing social class IV/V women, there were 4 symptoms differing between the two groups. The Coloured women rated higher in three out of the four symptoms.

COMPARISON BETWEEN PMS AND "NON-PMS" GROUPS

Firstly, the total sample was split into PMS and "non-PMS" groups and secondly, ethnic groups compared for total scores. In both the PMS and "non-PMS" categories the White subjects had significantly higher total scores than the Black subjects. In both categories the differences between the White and Coloured subjects approached, but did not achieve significance, and there were no significant differences between the Coloured and Black women's scores for either of the categories.

Although the Coloured subjects had a significantly higher prevalence of PMS than the Black and White subjects, it was interesting that the White women had the highest total symptom scores.

DISCUSSION

MDQ VERSUS UNPROMPTED SYMPTOM REPORTS

There was a different response by subjects to the two methods of establishing symptomatology, with a much higher rate of complaints when subjects were actually given symptoms to rate, as opposed to having to volunteer symptoms with no prompting. This may be because a structured list focuses a woman's attention more clearly on the symptoms which may otherwise be disregarded or not remembered.

The apparent discrepancies between unprompted reports of symptoms, and self-rating of symptoms from a structured list, demonstrates one of the difficulties in obtaining accurate information on PMS symptomatology. The results for the unprompted symptoms, were generally closer to the results for the MDQ ratings of 5-6, than to the overall MDQ ratings of 2-6 (see Appendix 2). There were two exceptions, namely cramps (29.8% versus 9.0%), and painful breasts (24.9% versus 11.5%) which did not correlate to the MDQ scores of 5-6. These two symptoms were probably mentioned spontaneously by so many more women because they are two very well-known premenstrual symptoms, and although may not be strong or disabling, are presumably experienced by many women to some degree and possibly accepted by some women as "normal" changes.

The different results obtained from two methods of symptom assessment, were well-demonstrated by Woods et al (1982c) who showed that a structured list of symptoms will elicit a greater response than a totally unstructured question about premenstrual symptomatology. Halbreich and Endicott (1982) commented that the likelihood of agreement between retrospective and prospective ratings of symptoms was linked to symptom severity with the greatest agreement limited to women with severe premenstrual symptoms.

For this reason, the MDQ symptoms were analysed looking at scores of 5 or 6, to avoid the possible overestimation of mild to moderate symptoms, by participants. The scores from 2 to 6 were also analysed, to obtain an overall ranking of symptom occurrence, and to enable comparison of results with those of other workers (who included **any** occurrence of a symptom). The diagnosis of PMS was based on at least three symptoms rated as strong or disabling (ie scores 5 or 6).

While rating symptoms from the MDQ may result in an overestimation of symptoms, because of women's stereotypic beliefs about what they should experience premenstrually (Parlee 1974), totally unstructured questions about symptomatology may under-estimate symptoms (Woods et al 1982c). Women may be may not realize that some of the more nebulous symptoms they experience are related to PMS and there may be reticence on the part of some individuals to mention psychological changes which may occur premenstrually, because they may be afraid of being labelled as "unstable".Women may be inclined to mention mainly physical changes which they experience. There may also be some women who perceive premenstrual changes as "normal" or physiological.

The fact that a large number of women in this study had never heard of PMS would have exacerbated the problem of underestimation of unprompted symptoms, and may even have affected MDQ symptom scoring. If it did affect MDQ scoring, it would not necessarily have affected the prevalence figure obtained in this study, because presumably women (regardless of whether or not they had heard of PMS) with strong or disabling premenstrual symptoms would have reported them as such, regardless of whether or not they had heard of PMS.

The reason why there were ten symptoms from the MDQ which none of the 409 subjects volunteered in the unprompted section on symptoms, may have been because women do not commonly associate these symptoms with being premenstrual, or else they may be minor in terms of other symptoms experienced. This was highlighted by the fact that those ten symptoms featured low down in the order of rankings of the 35 MDQ symptoms (all below the 21st position out of 35 symptoms, except for anxiety which was in the 17th position).

Although 104 women were diagnosed as having PMS, only 101 women from the total sample could mention three premenstrual symptoms spontaneously (and **not** all of those 101 were diagnosed as having PMS). This is interesting as it underlines the fact that unstructured attempts to evaluate premenstrual symptoms, will not elicit some symptoms which are reported later in the questionnaire as strong or disabling (for a diagnosis of PMS, a subject **had** to rate three symptoms as at least 5 or 6). It is inadequate to rely solely upon unprompted symptom reporting for a PMS diagnosis, but this should be weighed up against the possible over-estimation of symptoms, from a structured list like the MDQ.

MDQ SYMPTOMATOLOGY

Total MDQ Symptom Scores

Although the Black and White women have almost the same prevalence of PMS, the Black womens' symptom scores were significantly lower than those of both the White and the Coloured womens'. In addition, although there was not a significant difference in MDQ scores between the White and Coloured women, there was a significantly higher PMS prevalence in the Coloured women. A possible explanation for this was given in the section on prevalence.

The Black women were significantly younger than the other two groups of women, which may have resulted in lower symptom scoring, as younger women have been shown to have less severe premenstrual symptoms (Hargrove and Abraham, 1982) than older women.

Considering that more of the Black women (95/133 or 71.4%) were aged between 18 and 24, compared to the White women (72/124 or 58.1%), and the prevalence of PMS in that age group for the total sample was only 20.4% (compared to 37.5% between 25-29 years, and 29.5% in women over 30 years), there may well be justification for the lower symptom scoring in the Black women.

Although having heard of PMS was not associated with an increased risk for being diagnosed as having PMS, the Black group as a whole was the least aware of PMS, with only 44.4% of women having ever heard of it. When faced with questions about premenstrual symptomatology, a women who has never heard of PMS is likely to rate fewer and less severe symptoms than a counterpart who knows about PMS, and would possibly be more likely to attribute cyclical changes to PMS (Koeske and Koeske 1975, Wilcoxon et al 1976, Hart and Russell 1986, Abplanalp et al 1979a and 1979b). This factor could have influenced symptom scores, without actually changing the prevalence of PMS, as these women may have been more likely to discount symptoms unless they were quite severe. The woman who only complains when symptoms are causing moderate or severe discomfort possibly has a healthier attitude towards menstruation and premenstrual changes than the woman who notices and complains of even the slightest changes.

Another factor which may have influenced the Black womens' symptom ratings, was their stress scores, which were significantly higher than the other two groups of women. It is possible that these women are, and have been, so stressed by their living conditions, that they do not perceive the events surrounding menstruation as unduly problematic, whereas the woman who has grown up with less stress may have a slightly different perspective on her menstrual cycle.

In addition, it is possible that differing health education, and socialization may alter a woman's perceptions about premenstrual changes, and account for the differing symptom scores between the groups in this study. In other words, symptoms which justify seeking medical care in one group, may be seen differently in another (and not taken for treatment) group (Zola 1966).

Differing health education may also make some women more aware of their bodies, and the cyclical changes which occur, consequently resulting in greater reporting of symptoms.

The possible relationship between learned responses and premenstrual symptoms has been demonstrated previously (Widholm and Kantero 1971, Paulson 1961). Widholm and Kantero's study found a highly significant correlation between certain premenstrual symptoms in Finnish mothers and their daughters. They found that 63% of the daughters of symptom-free mothers were also symptom-free, and that 70% of the daughters of women who complained of premenstrual fatigue and irritability, also complained of those two symptoms. They concluded that acquired, unrecognized mimicking does play a role in PMS. Zola (1966) also commented on the phenomenon of learned behaviour, affecting symptom reporting.

Cluster scores

There were three clusters which were significantly different between the three ethnic groups: concentration, water retention, and negative affect. The cluster labelled water retention showed the greatest differences between the three groups of women, with both the White and Coloured groups of women scoring significantly higher for this cluster than their Black counterparts. Although the difference between the White and Coloured women was not significant, consistently more White women complained of each of the four water retention symptoms than the Coloured women.

For the other two clusters, the inter-ethnic differences were not as clear-cut. The cluster labelled negative affect, showed that the White women had significantly higher cluster totals than Black women, while the difference between the Coloured and Black women approached, but did not reach significance (more of the Coloured women complained than Black women). As with all the cluster score comparisons, there was no significant difference between the Coloured and White women for the negative affect cluster. The findings of this study showing the Black women reporting significantly lower scores of negative affect changes premenstrually are similar to those found by Woods et al (1982a), and in contrast with findings by Stout et al (1986).

The cluster scores for concentration did not differ significantly between the White women and either of the other two groups, while the Coloured women scored significantly higher than the Black women for that cluster. This cluster's individual Symptoms will be further discussed under "Individual Symptoms".

Individual Symptoms

The relationship between cluster totals, and individual symptoms may appear confusing ie. the 10 **individual** symptoms which differed significantly between the three ethnic groups, were **not** from the same three **clusters** which differed significantly. The ten symptoms which differed were from the Pain, Water Retention, and Negative Affect clusters. (ie. symptoms from the Concentration cluster were no longer represented, while symptoms under Pain were represented.)

While the Coloured and White women scored significantly higher than the Black women for the pain cluster items "headache" and "backache", the Black women scored significantly higher than the other two groups for "general aches and pains", also a symptom from the pain cluster. The "balancing" effect of individual symptom scores from the pain cluster, effectively resulted in there being no significant difference between the ethnic groups for the **cluster** labelled pain.

For the **cluster** labelled concentration, the Black women scored significantly lower than the Coloured women. However, when the **individual** symptoms under "concentration" were considered, there were **no** significant differences between the Coloured and Black women. This apparent inconsistency was because the Coloured women had scored slightly higher for the each individual item under concentration, but not significantly so, and only when the cluster totals were compared, (ie. the sum of the individual symptoms), was the difference sufficient for the cluster total of the Coloured women to be significantly higher than that of the Black women.

In developing the MDQ, Moos derived symptom clusters which originated from symptoms which had been intercorrelated and factor analysed in 4 analyses. Each cluster represented empirically correlated factors (symptoms) which were essentially linked, with the rest of the symptoms in a particular cluster.

In this study, in the individual symptom comparisons, where the White and Coloured women reported significantly more premenstrual crying and irritability than the Black women, while the Black women complained of significantly more restlessness than the White women. All three are symptoms of negative affect and the possibility exists that the three groups of women are expressing symptoms which are essentially similar ie. there may be a different expression of the same symptoms, in different groups of women.

The reports of individual symptoms were dependant upon interpretation of symptoms. For example the symptom labelled "general aches and pains" (which the Black women reported significantly more of than the Coloured women) could have been interpreted by a subject as meaning many things. The Coloured (and White) women may have labelled what the Black women reported as "aches and pains", as "headaches" or "backache".

This study has demonstrated that there are more **similarities** in premenstrual symptomatology than there are differences between the three groups of women studied. Of a possible 105 differences (35 X 3), there were only 17 differences between the three groups of women, which covered 10 of the 35 MDQ symptoms. For practical purposes, the symptomatology between the White and Coloured subjects was the same (only one symptom, "crying", differed significantly between the two groups).

The inter-ethnic symptom differences (Table 4.24), showed the White and Coloured subjects complained more of premenstrual symptoms (any rating from 2-6) than the Black subjects did. For only two symptoms did the Black women rate significantly higher than the Coloured or the White group, namely "general aches and Pains" (greater than Coloured women), and restlessness (greater than the White women). These two symptoms have not been previously reported as more frequent in Black women.

All of the studies comparing symptomatology between ethnic groups have been in the U.S.A with the exception of Janiger's cross-cultural study, which included some European countries, Nigeria, and Japan. Other work on premenstrual symptomatology in African populations, has been done in Niger (Cenac et al 1987), Nigeria (Kashiwagi 1976), and Egypt (El-Kholi et al 1971). The study on menstrual patterns in Upper Egypt (El-Kholi et al 1971), reported on premenstrual symptomatology, but included only ten symptoms in the evaluation, and did not differentiate between grades of severity for symptoms.

The White and Coloured women in this sample reported more premenstrual headaches than their Black counterparts. This is in direct contrast with findings by Ferguson and Vermillion (1957), and Janiger et al (1972). Janiger et al found that Nigerian women had a very high frequency of premenstrual headaches. In addition, when comparing Miami Caucasian women with Negro women, he found a higher frequency of headaches in the Negro women. The Black women in the present study women also reported significantly less premenstrual backache than the other two groups of women.

In this study on two Cape Town university populations, the Black women in the sample reported significantly less premenstrual weight gain and swelling than the White subjects. This is in agreement with Boyle's findings (1987). The White women in the present study mentioned more premenstrual skin disorders than the Black women, which has not been shown previously.

The White and Coloured women in this study reported more premenstrual crying than the Black subjects. Woods et al (1982a) also showed this. In addition, the White women complained of significantly more premenstrual crying than the Coloured subjects, this being the **only** symptom which differed significantly between these two ethnic groups.

This study showed that the White and Coloured subjects reported significantly more premenstrual irritability than the Black subjects. This finding is supported by Boyle's work. In addition the White subjects reported more premenstrual tension than the Black women, which has not been shown by other workers.

Some of the inter-ethnic differences in premenstrual symptom reporting found by other workers, were not shown in the three groups of women studied here. Unlike the findings of Ferguson and Vermillion, this study found no ethnic differences for premenstrual depression or breast tenderness. It has been reported that Black women suffer from more premenstrual appetite changes (or "food cravings") than White women (Stout et al 1986, Ferguson and Vermillion 1957), however, the present study did not show this. This study did not demonstrate significant differences between the three groups' reports of premenstrual mood changes, like those found by Boyle et al (1987). Unlike Woods et al (1982a), this study did not find any significant differences between the three groups' reports of premenstrual anxiety.

In the present study, the commonest symptoms (scored from 2-6) were irritability, swelling, painful breasts and mood swings, and skin disorders, while the commonest symptoms reported in the women from Niger (Cenac et al 1987) were breast symptoms, pelvic pain, nervousness and insomnia.
The commonest premenstrual symptoms in women from Upper Egypt were backache, breast-tenderness and lower abdominal pain (El-Kholi et al 1971).

Social class differences in symptomatology

The reason for more of the social class I/II Coloured women complaining of symptoms than their grade III and particularly grade IV/V counterparts, is probably related to health expectations and educational factors. There was no significant difference in stress ratings between these three groups, except for 1 factor namely Political/Social (which was not linked to prevalence of PMS anyhow), so stress was probably not a major factor in these differences (see Table 4.18).

While this study has shown that formal education was not associated with the risk of being diagnosed as having PMS, it is thought that social learning may play a role in symptom expression. As mentioned earlier, health education may vary from one social group to another, and this may affect expectations, and alter a woman's response to cyclical changes she may notice - if she has been educated into the knowledge that premenstrual breast-tenderness and irritability are legitimate complaints which can be treated, she may more readily verbalize that they are affecting her life, and seek treatment for them.

The reports of premenstrual symptoms by the two groups of Black women were very similar with just two symptoms differing significantly. One may have expected the symptomatology to differ more, as significantly more of the social class IV/V (than I/II) Black women described financial stress as severe or disabling, as this factor was associated with an increased risk for PMS. The similarity between the two groups of women may be ascribed to the fact that the Black group was fairly homogenous with respect to age, and student status (in contrast with the Coloured group which was a far more mixed group of women, with respect to age distribution, number of pregnancies, and number of working women).

The reports of individual symptoms within social class I/II women highlighted the fact that the White and Coloured women reported more symptoms than their Black counterparts. As mentioned earlier, this is probably related to differing health expectations and socialization in different groups of women, and the fact that significantly more Black women described stresses as strong or disabling.

The symptoms reported by social class IV/V women (ie Coloured women reported significantly more than Black women for 3 out of 4 symptoms) may be linked to the descriptions of strong or disabling stress. Significantly more Black social class IV/V women described strong or disabling financial stress than their Coloured counterparts. In addition, proportionally more of these Black women described strong or disabling work/study stress than the Coloured women. Both of these stresses were significantly associated with the prevalence of PMS and it is possible that the effects of the stresses on the Black women resulted in fewer and lower symptom-scores, than their Coloured counterparts (Most et al 1981).

This is probably also why the prevalence of PMS in the Black social class IV/V women was proportionally lower than their Coloured counterparts. As mentioned earlier, the relative youth of the Black women probably also accounted for the differences, as younger women have been shown to experience less premenstrual symptoms than older women.
(Moos 1968, Woods et al 1982a).

Comparison of total scores between PMS and "non-PMS" groups

The White women had higher total symptom scores (in both PMS and "non-PMS" categories) than the other two groups of women. This may be linked to health-education, and socialization factors, which have been discussed previously. As mentioned earlier, the effect of unconscious mimicking of a mother's behaviour, may also have affected the symptom-scoring, and the possibility exists that the White women are copying behaviour learned from their mothers, resulting in higher scores than the other two groups, where most of those womens' mothers have not had the benefit of the same quality education, and health facilities that the White womens' mothers have.

It is interesting that while the Coloured women had the highest MDQ total scores (ie not separated into PMS and "non-PMS" categories), when reviewing the PMS and "non-PMS" categories, the White women then had the highest scores, and that they were statistically significantly higher than the other two ethnic groups. This shows that although more Coloured than White (and Black) women have PMS, the smaller group of White women with PMS, actually report more severe symptoms.

It is felt that cultural beliefs or norms, peculiar to a particular group, as well as social learning and health education may consciously or subconsciously affect the reports of premenstrual symptomatology (and consequently PMS prevalence). These variables could account for some of the contrasting findings in the prevalence and symptomatology of Premenstrual Syndrome, in this group of Cape Town women.

Chapter 4

Part VI. HELP-SEEKING BEHAVIOUR AND PMS

The final questions in the interview dealt with what women had or had not done about their PMS, and was intended to provide further information regarding help-seeking (or otherwise) behaviour. In this section, reference to having PMS (or seeking advice for PMS) is reference to women **perceiving** themselves as having PMS, ie a self-diagnosis. These women may not necessarily have fitted the criteria of this study for a PMS diagnosis.

Of the sample of 409, 101 women said that they had had PMS in the previous three months. A further 39 women said that they had PMS in the past 5 years but not the previous three months, and there were 10 women who said they had had PMS more than 5 years ago. One hundred and twenty two women said that they had never had PMS. There were 137 women who did not know whether they had ever had PMS, comprising 132 who had never heard of PMS, and 5 who, having heard of PMS, were unsure as to whether or not they had had the condition.

Of the 101 women who reported having PMS in the previous three months, the responses of 97 subjects were analysed. The remaining 4 subjects had data missing so could not be analysed. Percentages were calculated for n=97 which was considered to be 100% of this subgroup. Women in the sample who did not know whether they had had PMS (ie 132+5 =137) were excluded from this section of the analysis.

The question dealing with age of onset of premenstrual symptoms, as expected, yielded a wide distribution of ages. 81 (83.5%) of the women said their symptoms had started before the age of 25, and of that number, 53 (54.6%) reported symptoms which first appeared before the age of 18 years. It should be noted that a large proportion of the sample were younger than 25 years (239/409 or 58.4%), so their PMS would obviously have started at a young age.

Of the 97 women who said they had had PMS in the previous three months, only 40 (41.2%) had ever sought medical advice for their PMS. The 40 women comprised 17 Coloured, 7 Black and 16 White women. By far the commonest treatment used for relief from PMS was medication, as 25 (62.5%) of the 40 women who had sought help had tried this option. There were 4 (10%) women who had tried more than one treatment for PMS. No-one had tried meditation or traditional healing alone, as a form of therapy (it **may** have been one of the treatments tried by the 4 women who had used more then one mode of therapy, but the subjects were not asked to specify this). The remaining 11 subjects had tried exercise, dietary changes, homeopathy, or "other" forms of treatment for their PMS.

Very similar proportions of Coloured, White and Black women, perceiving themselves as having PMS, had sought medical advice for it: Coloured: 42.5% (17); White 40% (16); Black 41.18% (7), but the numbers are small, so conclusions cannot be drawn about this.

The 57 women who had not ever been for medical advice for their PMS, gave a variety of reasons for this and only fifty six cases were analysed as one subject's data was missing. This subgroup comprised 23 Coloured, 23 White, and 10 Black women.

The two commonest reasons for not going for treatment were:
a) that it was not severe enough to seek help (18 or 32.1% of subjects said this), or
b) that it was "normal" to feel like that before a menstrual period, and something she (the subject) had to learn to live with (17 or 30.4% of subjects said this).

Proportionally more of the White women (11/23 or 47.8%), compared to the Coloured (5/23 or 21%), and the Black women (2/10 or 20%) said that they did not consider their PMS serious enough to seek medical advice about it.

When the ethnic groups were reviewed in terms of why they did not seek medical advice, it appeared that proportionally more Black (5/10 or 50%) women thought that it was "normal" to have PMS, compared to Coloured (7/23 or 30.4%) and White women (5/23 or 21.7%). These numbers are small, but it would appear that there may be an important attitudinal difference between particularly the Black and White women - possibly the notion of what is "normal" differs between the three groups of women in this study. This may have further implications as far a symptom-reporting goes, but it is unwise to speculate based on such small numbers.

Between one and five subjects named each of the remaining responses as their reason for having never sought medical advice for their PMS. There was nobody who said that lack of finances had deterred them from seeking medical help for their PMS. Presumably this is because of the large state-run hospitals which are accessible to people with limited financial resources, who would not otherwise be able to afford consulting a private doctor.

Table 4.33 below demonstrates what (if anything) the group of women who had heard of PMS, had done about their PMS.

Table 4.33

PMS-RELATED ACTION (n=272 women who have heard of PMS) [1]	COLOURED (n=91)	BLACK (n=59)	WHITE (n=122)
HAD PMS IN PAST 3/12	41 45.1%	17 28.8%	43 35.2%
GONE FOR TREATMENT (n=40) AS A % OF THOSE WITH PMS	17 41.5%	7 41.1%	16 37.2%
NOT SOUGHT TREATMENT n=56	n=23	n=10	n=23
- thought it "normal"	7	5	5
- not severe enough	5	2	11
- any other response	11	3	7

[1] n=272 **excludes** 5 women who, although they had heard of PMS, did not know whether or not they had ever suffered from the condition

The table below illustrates that there was approximately 80% agreement between the diagnosis of PMS (or "non-PMS") and the perceptions of the participants in this study. In other words, 80% of the women who said they had had PMS in the past three months, were actually diagnosed as having PMS in this study.

Table 4.34

WOMEN HAD HEARD OF PMS (n=272)	SAID THEY HAD HAD PMS IN PAST 3M. n = 101		NO PMS IN PAST 3 MONTHS n = 171	
DIAGNOSED PMS (n=72)	59	81.9%	13	18.1%
"NON-PMS" (n=200)	42	21.0%	158	79.0%

When considering the 104 women diagnosed as having PMS, 59 (56.7%) actually said they had had PMS in the past three months; there were 32 diagnosed as having PMS who had not heard of it (and therefore could not answer whether or not they had had it), 12 said that they had never suffered from PMS (maybe they did not really know what it was), and 1 subject said that she had has PMS in the past 5 years, but not in the previous three months.

There were 137 women in the total sample who could not say whether they had had PMS previously (including 5 who had heard of it), as they had never heard of Premenstrual Syndrome before. As mentioned in Part III of chapter 4, there was not an increased risk of being diagnosed as having PMS in women who had heard of PMS.

DISCUSSION

It appears that PMS (self-diagnosed) can start at any age; however this finding should be regarded with caution, as it pertains to this particular population, which consisted predominantly of women under the age of 25 years; in addition, this was based upon the individual's perception of her symptoms.

Many women (approximately 60% in this study) who perceive themselves as having PMS do **not** go for help. The fact that only 41.2% (40/97) of women who said they had PMS, had ever been for medical help regarding their PMS, may linked to the severity of their self-diagnosed PMS, and to cultural factors which were mentioned earlier. Previous studies have shown that the likelihood of seeking medical care for PMS, is a function of the severity of the symptoms experienced (Johnson 1988, Friedman and Jaffe 1985). Some women may have moderate symptoms of PMS, but are probably able to function fairly normally despite their symptoms.

The remainder of the women who had not been for help, consisted mostly of women who either felt their symptoms were not severe enough for treatment, or that their symptoms were "normal" ie physiological. A potentially important attitudinal difference to symptoms may exist, as more Black women felt their PMS was a "normal" event. However, this should be tested on a larger group of women to establish whether it is a factor in PMS prevalence and symptom-reporting.

In this study, not all women who said they had had PMS in the previous three months were diagnosed as such: 11.5% (12/104) of the diagnosed PMS cases said that they had never had PMS before - while 59 (81.9%) of the diagnosed cases of PMS (who had heard of PMS) **did** say they had had PMS in the previous three months.

Thirty two women who had never heard of PMS were diagnosed as such. One women who was diagnosed as PMS, said she had not had PMS in the past three months, but she had had it more than 5 years previously - her PMS then may simply have been far worse than at the time of the interview.

It appears that when considering women who have heard of PMS, the majority of womens' perceptions about whether they have PMS or not are in agreement with the diagnosis of PMS (as used in this study).

Chapter 5

CONCLUSIONS

There is no published work on the prevalence of Premenstrual Syndrome in South African women. In view of South Africa's multi-ethnic society, and the fact that it has been suggested that social class may play a role in PMS prevalence, a study was undertaken on a group of women which was mixed with regard to ethnicity and social class.

The aim of the study was to establish the prevalence and symptomatology of PMS in a broad spectrum of women. The operational hypothesis was that, when controlling for social class, ethnicity would not affect the prevalence of PMS. It was postulated that while PMS prevalence was not expected to vary between ethnic groups, there may be differences in symptom-expression for different groups of women, which may be secondary to social learning.

The sample was drawn from two universities in Cape Town, namely UCT and UWC. The sample was stratified, and subjects randomly selected. It was hoped that the sample population would contain the spectrum of social classes, in all three ethnic groups studied. The three ethnic groups were not the same with respect to social class distribution, age (the Coloured group was significantly older), and contraceptive use, in spite of coming from the same universe.

When results of this study are interpreted, it should be considered that while the aim was to have women representing the spectrum of social classes from each ethnic group, this was impossible to achieve with the information available prior to randomization. The results of this study cannot be generalized to the rest of Cape Town.

The data was collected using a questionnaire and a confidential, one-to-one interview with each participant.

The prevalence of PMS in a group of South African women was established. While the Coloured women studied had a significantly higher prevalence of PMS than the other 2 groups, this work demonstrated a very similar prevalence of the condition in White and Black women, despite their differences with regard to social class distribution and background, and the fact that significantly fewer Black women than White women had ever heard of PMS. The trend towards less PMS in social classes III and IV/V, supports the theory of social background affecting PMS prevalence.

In addition, it appears as though certain stresses, when described as strong or disabling, may affect PMS symptom-scoring, and result in lower symptom-scores, although this will not necessarily affect PMS prevalence. The Black women in the sample had significantly higher total stress scores than the other two groups of women. Other factors which were significantly associated with being diagnosed as having PMS were being aged 25-29 as opposed to 18-24 years, earning a family income in excess of R2500 per month, and complaining of menorrhagia ("heavy menstrual periods").

Guideline questions used to point towards a PMS diagnosis were not very reliable, and should not be used alone when attempting to diagnose PMS.

The assessment of retrospectively-rated premenstrual symptomatology highlighted more similarities between the three groups studied, than differences. This was particularly true for the White and Coloured women. The White subjects had the highest total symptom scores, despite the Coloured subjects having a significantly higher prevalence of PMS.

Difficulties in PMS research were discussed with reference to divergent opinions about PMS definitions and varying diagnostic criteria employed by other researchers. The difficulties associated with retrospective symptom reporting were discussed and reasons for not employing a prospective symptom-rating were given.

Womens' perceptions of their symptoms are important, and not all women who perceive themselves as having PMS seek medical care. Some women perceiving themselves as having PMS, felt it was "normal" to have PMS - proportionally more Black women gave this response, suggesting a possible attitudinal difference towards premenstrual symptoms, which may be related to cultural background.

As the first prevalence study on PMS in South African women, one which has incorporated cross-ethnic and social-class comparisons, this work may be seen as a starting point for future PMS research in South Africa.

It is clear that PMS is not confined to one social class. It is a condition which cannot be ignored, by virtue of the number of women who described premenstrual symptoms as strong or disabling as this will obviously have economic implications.

Future work in this field could include groups of women from social classes III and IV/V, ensuring a similar representation of ethnic groups, and age distribution. In addition, the role of perceived stress and attitudinal differences towards PMS could be further examined.

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A P P E N D I X 1

PREMENSTRUAL SYNDROME SURVEY
****

CASE NUMBER
OCCUPATION

CONTACT ADDRESS AND TELEPHONE NUMBER:

HOME:_____ WORK:_____

FOR THIS STUDY ,PREMENSTRUAL SYNDROME IS DEFINED AS THE PRESENCE OF SYMPTOMS IN THE PREMENSTRUUM ,WHICH ARE RELIEVED IN THE POST-MENSTRUUM ,WITH AT LEAST ONE WEEK OF THE CYCLE THAT IS SYMPTOM-FREE.

THIS SURVEY IS TO BE UNDERTAKEN BY PREMENOPAUSAL WOMEN, 45 YEARS AND YOUNGER, FROM A SELECTED TARGET POPULATION.

IN THIS SURVEY, RESPONDENTS HAVE BEEN SELECTED AND QUESTIONED REGARDING THEIR PMS SYMPTOMATOLOGY IN THE PAST 3 MONTHS ONLY.

SOCIAL CLASS TO BEEN ASSIGNED ACCORDING TO THE CASS CLASSIFICATION SYSTEM, AND IS SECONDARY TO PARENT'S OCCUPATION, UNLESS RESPONDENT IS SELF-SUPPORTING.

THE INFORMATION OBTAINED FROM RESPONDENTS IS CONFIDENTIAL AND ANONYMITY IS GUARANTEED.

CHECKLIST: a) PREGNANT
b) HYSTERECTOMY
c) AMENORRHOEA (EXCLUDE IF YES TO a,b or c)

THE CODE FOR N/A IN THE QUESTIONNAIRE IS " . . "

1. CASE NO:_____

4. RACE :1.WHITE 2.COLOURED 3.BLACK 4.ASIAN

5. SOCIAL CLASS : 1=I 2=II 3=III 4=IV 5=V
SINGLE:FATHER'S PRESENT OR PREVIOUS HIGHEST OCCUPATION UNLESS SELF-SUPPORTING, THEN CODE OWN.
MARRIED / WIDOWED:HUSBAND'S PRESENT OR PREVIOUS HIGHEST OCCUPATION. WIDOW: TREAT SIMILARLY TO DIVORCEE.
DIVORCED: HUSBAND'S OCCUPATION IF AVAILABLE AND HIGHER THAN HERS, OTHERWISE CODE OWN OCCUPATION.

6 RELIGION :
1.PROTESTANT (include 7th Day adventist) 2.ROMAN CATHOLIC 3.CHRISTIAN 4.MOSLEM 5.JEWISH 6.NIL
7.OTHER (include Jehovah's Witness) 8.HINDU

7. MARITAL STATUS ? 1.S 2.M 3.D 4.W

8. WHERE DO YOU LIVE ?
1.RENTED (council/communal house) 2.OWN 3.LODGING (limited accommodation) 4.RESIDENCE (university or other) 5.PARENTAL HOME 6.INFORMAL (squatter/shack)
7.OTHER

9. WITH WHOM DO YOU LIVE ?
1.PARENT/S AND/OR SIBLINGS /FAMILY MEMBERS
2.HUSBAND/PARTNER (& children if applicable)
3.CHILDREN (IF DIVORCED OR SINGLE) 4.ALONE
5.COMMUNAL HOUSE/FLATMATES
6.RESIDENCE 7.LANDLORD
8.OTHER

10. HIGHEST EDUCATIONAL LEVEL PASSED :
1.NIL 2.SUB-A - STD 1 3.STD 2-5 4.STD 6-8
5.STD 9-10 6.TERTIARY EDUCATION

11. MONTHLY FAMILY INCOME : (HUSBAND'S IF WIFE U/E)
1.<R500 2.PARENTAL SUPPORT 3.<R1000 4.<R2500
5.>R2500 6.STUDENT GRANT/LOAN 7.REFUSES TO ANSWER

12. AGE OF RESPONDENT ? (round off to nearest year, eg if 24 years and 7 months, age is 25)

14. DESCRIBE YOUR JOB/STUDY-SATISFACTION.
(AUTHOR TO RATE FROM 1 TO 6 ACCORDING TO RESPONSE)

GYNECOLOGICAL HISTORY:

15. REGULAR PERIODS ? 1.YES 2.NO 3.DON'T KNOW

16. DO YOU HAVE PROBLEMS WITH YOUR PERIODS ?
1.YES 2.NO 3.DON'T KNOW

WHAT SORT OF PROBLEMS ? (DON'T PROMPT!)
FOR Q17-22, ANSWER 1.YES 2.NO or 3.DON'T KNOW

17. DYSMENORRHOEA
18. IRREGULAR PERIODS
19. HEAVY PERIODS (MENORRHAGIA)
20. PRE-MENSTRUAL TENSION/SYMPTOMS/SYNDROME
21. GYNAECOLOGICAL SURGERY
22. INFERTILITY

23. HOW DO YOU KNOW THAT YOUR PERIOD IS ABOUT TO BEGIN ie. DOES YOUR BODY TELL YOU THAT A PERIOD IS ABOUT TO BEGIN?
1.ALWAYS REGULAR
2.PRE-MENSTRUAL SYMPTOM/S
3.RESPONDENT DOESN'T KNOW

24. IF ANSWER TO NO.23 IS "2", DO THE SYMPTOMS WORRY YOU ?
1.SEVERELY 2.MILDLY 3.SOMETIMES 4.NO N/A = . .

25. WHAT ARE YOUR 3 WORST SYMPTOMS ?
CODE FROM MDQ ITEM NUMBERS (code ".." for N/A)

31. DO YOU EVER TAKE TIME OFF WORK/LECTURES AS A RESULT OF YOUR PREMENSTRUAL SYMPTOMS (... HOW YOU FEEL JUST BEFORE A MENSTRUAL PERIOD)? 1.YES 2.NO 3.DON'T KNOW

OBSTETRIC HISTORY:

32. GRAVIDITY
34. PARITY
36. LMP (DAY OF CYCLE)
38. LENGTH OF CYCLE (52=IRREGULAR)
40. CONTRACEPTION WITHIN THE LAST 3 MONTHS:
1.MONOPHASIC O.C 2.TRIPHASIC O.C 3.PROGESTAGEN ONLY PILL 4.DEPO INJECTABLE 5.NUR-ISTERATE INJECTABLE
6.IUCD 7.CONDOMS 8.DIAPHRAGM 9.T/L 10.NIL
11.OTHER (INCLUDES >1 OF THE ABOVE) 12.BIPHASIC PILL

42. DO YOU FEEL PHYSICALLY OR EMOTIONALLY OUT OF SORTS OR UNWELL BEFORE YOU HAVE YOUR PERIOD ? 1.YES 2.NO
3.DON'T KNOW 4.SOMETIMES

43. HAVE YOU EVER CONSULTED :A PSYCHOLOGIST OR PSYCHIATRIST
1.YES 2. NO 3. DON'T KNOW

44. IF ABOVE ANSWER WAS YES,DID YOU RECEIVE:
1.MEDICATION ONLY
2.HOSPITALIZATION AND MEDICATION
3.THERAPY/COUNSELLING
4.NO TREATMENT (INCLUDE PRESCRIPTION NOT USED)
N/A = . .

45. DID THE TREATMENT HELP YOU ? 1.YES 2.NO 3.DON'T KNOW

DESCRIBE THE FOLLOWING FACTORS IN TERMS OF HOW STRESSFUL THEY HAVE BEEN FOR YOU IN THE PAST 3 MONTHS:

46. FINANCIAL
47. WORK
48. PARTNER/FAMILY RELATIONSHIPS
49. POLITICAL/SOCIAL ISSUES
50. HEALTH

51. TOTAL SCORE FOR STRESS FACTORS

53. DO YOU THINK THAT YOU HAVE BEEN MORE STRESSED THAN USUAL IN THE PAST 3 MONTHS ? 1.YES 2.NO 3.DON'T KNOW

54. IF YOU HAVE A PROBLEM, WITH WHOM DO YOU DISCUSS IT ?
1.MOTHER OR FATHER 2.HUSBAND 3.BOYFRIEND 4.SIBLING
5.FRIEND 6.NO-ONE 7.COLLEAGUE 8.SUPERIOR
(INCLUDES MINISTER/PRIEST) 9.OTHER (include family member)

55. HOW WOULD YOU DESCRIBE YOUR CLOSEST RELATIONSHIP IN TERMS OF SATISFACTION ?

56. DO YOU KNOW THAT YOU ARE ABOUT TO START A PERIOD BEFORE IT ACTUALLY BEGINS ? 1.YES 2.NO 3.DON'T KNOW
4.SOMETIMES

57. IF THE ABOVE ANSWER WAS YES, DO YOU FEEL BETTER ONCE YOUR PERIOD HAS BEGUN ? 1.YES 2.NO 3.DON'T KNOW
4.USUALLY 5.NO DIFFERENT FROM USUAL N/A = . .

58. HAVE YOU EVER HEARD THE TERM 'PREMENSTRUAL SYNDROME' OR 'PREMENSTRUAL TENSION' ? 1.YES 2.NO 3.DON'T KNOW

THE FOLLOWING LIST OF SYMPTOMS APPLIES TO THE LAST 3 MONTHS ONLY. THINK OF HOW YOU HAVE FELT IN THE WEEK TO 2 WEEKS JUST BEFORE YOUR PERIOD HAS BEGUN, OVER THE PAST THREE MENSTRUAL CYCLES.
RATE SYMPTOMS ACCORDING TO THE CHART IN FRONT OF YOU

PAIN:

59. 1.MUSCLE STIFFNESS 1
60. 2.HEADACHE 2
61. 3.CRAMPS 3
62. 4.BACKACHE 4
63. 5.FATIGUE 5
64. 6.GENERAL ACHES & PAINS 6

CONCENTRATION:

65. 1.INSOMNIA 7
66. 2.FORGETFULNESS 8
67. 3.CONFUSION 9
68. 4.LOWERED JUDGEMENT 10
69. 5.DISTRACTABLE 11
70. 6.ACCIDENTS 12
71. 7.LOWERED MOTOR CO-ORDINATION 13

BEHAVIOURAL CHANGE:

72. 1.LOWERED SCHOOL OR WORK PERFORMANCE 14
73. 2.STAY AT HOME 15
74. 3.TAKE NAPS 16
75. 4.AVOID SOCIAL ACTIVITIES 17
76. 5.DECREASED EFFICIENCY 18

AUTONOMIC REACTIONS:

77. 1.DIZZINESS/FAINTNESS 19
78. 3.COLD SWEATS 20
79. 4.NAUSEA AND VOMITING 21
80. 6.HOT FLASHES 22

WATER RETENTION:

1. 1.WEIGHT GAIN 23
2. 2.SKIN DISORDERS 24
3. 3.PAINFUL BREASTS 25
4. 4.SWELLING 26

NEGATIVE AFFECT:

5. 1.CRYING 27
6. 2.LONELINESS 28
7. 3.ANXIETY 29
8. 4.RESTLESSNESS 30
9. 5.IRRITABILITY 31
10. 6.MOOD SWINGS 32
11. 7.DEPRESSION 33
12. 8.TENSION 34

13. A CHANGE IN EATING HABITS 35

14. TOTAL SCORE FOR SYMPTOMS

18. DO YOU PERCEIVE THE ABOVE AS A PROBLEM ,IN THAT YOUR LIFE IS DISRUPTED ? 1.YES 2.NO 3.DON'T KNOW 4.MILDLY

19. AT WHAT STAGE OF YOUR CYCLE DO YOUR SYMPTOMS APPEAR ?
    1. 1- 2 DAYS BEFORE A PERIOD
    2. 3-7 DAYS BEFORE A PERIOD
    3. 7-10 DAYS BEFORE A PERIOD
    4. FOR 10 DAYS TO 2 WEEKS BEFORE A PERIOD
    5. MORE THAN 2 WEEKS (7 or > 7 symptom-free days)
    6. ENTIRE CYCLE ie < 7 symptom-free days

FOR NEXT 4 QUESTIONS ANSWER "DON'T KNOW" IF PERSON HAS NEVER HEARD OF PMS OR PMT.

DO YOU KNOW IF :

20. YOUR MOTHER
21. YOUR SISTERS
22. ANY FRIENDS OR ACQUAINTANCES

SUFFER FROM PMS? ANSWER 1.YES 2.NO 3.DON'T KNOW

23. HAVE YOU EVER SUFFERED FROM PMS ?
    1.YES,IN THE PAST 3 MONTHS
    2.YES IN THE PAST 5 YEARS ,BUT NOT IN THE PAST 3 MONTHS 3.MORE THAN 5 YEARS AGO
    4.NO
    5.DON'T KNOW (ALSO IF HAS NOT HEARD OF PMT)

FILL IN N/A IF PERSON IS NOT A PMT SUFFERER FOR NEXT QUESTIONS.

24. AT WHAT AGE DID YOU FIRST NOTICE THESE SYMPTOMS ?

26. WAS THERE AN EVENT WHICH PRECEDED THE ONSET OF YOUR PMS
    1.A PREGNANCY (SPECIFY WHICH BABY)
    2.THE BIRTH OF A BABY
    3.START OF OR CHANGE IN CONTRACEPTION
    4.FAMILY CRISIS EVENT
    5.OTHER MAJOR STRESSOR
    6.OTHER SPECIFY
    7.DON'T KNOW
    8.N/A

27. HAVE YOU EVER SOUGHT MEDICAL ADVICE FOR THIS ?
    1.YES 2.NO 3.DON'T KNOW N/A = . .

28. IF NOT,WHY NOT ?
    1. N/A BECAUSE HAS SOUGHT ADVICE
    2. DID NOT KNOW THAT THERE WAS HELP AVAILABLE
    3. BAD EXPERIENCE WITH HOSPITAL/DOCTORS ETC
    4. COULD NOT AFFORD IT
    5. THOUGHT IT WAS NORMAL/ PART OF 'BEING A WOMAN'
       AND SOMETHING I HAD TO LEARN TO LIVE WITH
    6. WANTED TO TRY AND COPE WITH IT ALONE
    7. OTHER PROBLEMS,MADE THIS SEEM IRRELEVANT;
       OR OTHER DEMANDS BY FAMILY WHICH CAME FIRST
    8. KEPT PUTTING OFF GOING FOR HELP
    9. FELT THAT IT WAS NOT SEVERE ENOUGH TO SEEK HELP
    10. FELT IT WOULD NOT BE TAKEN SERIOUSLY
    11. MORE THAN ONE OF THE ABOVE
    12. OTHER

30. IF YES,WHAT DID YOU TRY ?
    1. MEDICATION
    2. REGULAR EXERCISE
    3. DIETARY CHANGES
    4. HOMEOPATHY
    5. MEDITATION
    6. TRADITIONAL MEDICINE
    7. HAS NEVER SOUGHT HELP
    8. MEDICATION WHICH SUBJECT DID NOT USE
    9. MORE THAN ONE OF THE ABOVE
    10. OTHER

AT THE END OF THE QUESTIONNAIRE, IF PMS IS DISRUPTING THE SUBJECTS LIFE, ASK RESPONDENT WHETHER SHE WOULD LIKE HELP FOR HER PMS AND NOTE IN BOOK ACCORDINGLY.

APPENDIX 2

OVERALL RANKING OF MDQ SYMPTOMS IN DESCENDING ORDER OF FREQUENCY	MDQ 2-6		MDQ 5-6		FREQUENCY OF SYMPTOMS	
N=409	ANY COMPLAINT		STRONG/DISABLING		UNPROMPTED	
	n	%	n	%	n	%
IRRITABILITY	265	64.8	63	15.4	55	13.5
SWELLING	249	60.9	44	10.8	64	15.7
PAINFUL BREASTS	248	60.6	47	11.5	102	24.9
MOOD SWINGS	246	60.1	61	14.9	28	6.9
SKIN DISORDERS	237	57.9	37	9.0	32	7.8
WEIGHT GAIN	236	57.7	46	11.2	16	3.9
CRAMPS	212	51.8	37	9.0	122	30
FATIGUE	205	50.1	31	7.6	15	3.7
TENSION	200	48.9	37	9.0	10	2.4
DEPRESSION	194	47.4	47	11.5	27	6.6
TAKE NAPS	184	45.0	29	7.1	4	1.0
CHANGE IN EATING	182	44.5	49	12.0	14	3.4
RESTLESSNESS	181	44.3	25	6.1	1	.2
BACKACHE	163	39.9	25	6.1	47	11.5
AVOID SOCIAL ACT.	160	39.1	33	8.1	2	.5
STAY AT HOME	155	37.9	22	5.4	1	.2
DISTRACTABLE	154	37.7	9	2.2	0	
DECR. EFFICIENCY	153	37.4	8	2.0	1	.2
LOWER SCHOOL/WORK	149	36.4	8	2.0	0	
ANXIETY	145	35.5	24	5.9	0	
CRYING	138	33.7	27	6.6	15	3.7
LONLINESS	126	30.8	21	5.1	1	.2
HEADACHE	123	30.1	22	5.4	30	7.3
GEN ACHES & PAINS	116	28.4	7	1.7	8	2.0
LOWERED CO-ORDINA	102	24.9	5	1.2	0	
DIZZY/FAINT	97	23.7	8	2.0	2	1
LOWERED JUDGEMENT	92	22.5	7	1.7	0	
ACCIDENTS	79	19.3	10	2.4	0	
MUSCLE STIFFNESS	65	15.9	12	2.9	5	1.2
FORGETFULNESS	59	14.4	7	1.7	0	
CONFUSION	57	13.9	2	.5	0	
INSOMNIA	51	12.5	10	2.4	0	
NAUSEA & VOMIT	49	12.0	9	2.2	7	2
HOT FLUSHES	38	9.3	6	1.5	1	.3
COLD SWEATS	30	7.3	4	1.0	0	

FREQUENCY OF PREMENSTRUAL SYMPTOMS (RATED 2-6)

COLOURED SUBJECTS n=152

	5/6		2-4	ANY %
IRRITABILITY	34	22.4	69	67.8
SWELLING	19	12.5	81	65.8
BREAST TENDERNESS	19	12.5	77	63.2
MOOD SWINGS	26	17.1	66	60.5
WEIGHT GAIN	17	11.2	73	59.2
SKIN DISORDERS	8	5.3	81	58.6
FATIGUE	15	9.9	64	52.0
CRAMPS	17	11.2	60	50.7
TAKE NAPS	14	9.2	62	50.0
TENSION	19	12.5	55	48.7
BACKACHE	14	9.2	57	46.7
RESTLESSNESS	14	9.2	56	46.1
CHANGE IN EATING	25	16.4	44	45.4
AVOID SOCIAL ACT.	19	12.5	49	44.7
DEPRESSION	22	14.5	45	44.1
DISTRACTABLE	0	.0	63	41.4
STAY AT HOME	10	6.6	52	40.8
DECR.EFFICIENCY	2	1.3	59	40.1
DECR.WORKPERFORMA	4	2.6	53	37.5
HEADACHES	10	6.6	44	35.5
ANXIETY	11	7.2	40	33.6
CRYING	9	5.9	41	32.9
LOWERED CO-ORD	3	2.0	38	27.0
DIZZY/FAINT	4	2.6	37	27.0
LONELINESS	10	6.6	26	23.7
LOWERED JUDGEMENT	2	1.3	33	23.0
ACCIDENTS	3	2.0	31	15.9
GEN ACHES & PAINS	3	2.0	27	19.7
CONFUSION	1	.7	27	18.4
MUSCLE-STIFFNESS	8	5.3	17	16.4
INSOMNIA	6	3.9	17	15.1
FORGETFULNESS	3	2.0	20	15.1
NAUSEA & VOMIT	2	1.3	16	11.8
HOT FLUSHES	3	2.0	12	9.9
COLD SWEATS	3	2.0	11	9.2

KEY TO COLUMN HEADINGS:
5-6: the number of subjects rating 5 or 6 for each symptom; alongside that column, is that number represented as a %
2-4: the number of women who rated the symptom from 2 to 4
ANY %: the number of subjects (expressed as a percentage, who complained AT ALL of the symptom)

FREQUENCY OF PREMENSTRUAL SYMPTOMS

BLACK SUBJECTS n=133

	5/6		2-4	ANY %
CRAMPS	13	9.8	60	54.9
MOOD SWINGS	19	14.3	53	54.1
BREAST	10	7.5	60	52.6
RESTLESSNESS	6	4.5	62	51.1
IRRITABILITY	8	6.0	58	49.6
SKIN DISORDERS	16	12.0	48	48.1
EATING	16	12.0	47	47.4
NAPS	5	3.8	58	47.4
WEIGHT GAIN	10	7.5	51	45.9
SWELLING	7	5.3	53	45.1
DEPRESSION	13	9.8	47	45.1
FATIGUE	7	5.3	51	43.6
TENSION	9	6.8	46	41.4
AVOID SOCIAL ACT.	9	6.8	43	39.1
GEN ACHES & PAINS	3	2.3	46	36.8
ANXIETY	7	5.3	41	36.1
HOME	5	3.8	42	35.3
LONLINESS	6	4.5	40	34.6
WORKPER	3	2.3	40	32.3
DISTRACTABLE	5	3.8	38	32.3
EFFICI	3	2.3	40	32.3
BACKACHE	4	3.0	34	28.6
DIZZY/FAINT	2	1.5	33	26.3
CO-ORD	0	.0	29	21.8
JUDGE	0	.0	28	21.1
HEADACHE	4	3.0	24	21.1
MUSCL	4	3.0	18	16.5
NAUSEA & VOMIT	6	4.5	16	16.5
FORGETFULNESS	1	.8	17	13.5
ACCIDENTS	2	1.5	15	12.8
CRYING	5	3.8	11	12.0
INSOMNIA	3	2.3	13	12.0
CONFUSION	0	.0	16	12.0
HOT FLUSHES	2	1.5	8	7.5
COLD SWEATS	1	.8	8	6.8

FREQUENCY OF PREMENSTRUAL SYMPTOMS

WHITE SUBJECTS n=124

	5-6		2-4	ANY %
IRRITABILITY	21	16.9	75	77.4
SWELLING	18	14.5	71	71.8
WEIGHT GAIN	19	15.3	66	68.5
SKIN DISORDERS	13	10.5	71	67.7
MOOD SWINGS	16	12.9	66	66.1
CRYING	13	10.5	59	58.1
TENSION	9	7.3	62	57.3
FATIGUE	9	7.3	59	54.8
DEPRESSION	12	9.7	54	53.2
BREAST TENDERNESS	18	14.5	44	50.0
CRAMPS	7	5.6	55	50.0
BACKACHE	7	5.6	47	43.5
CHANGE IN EATING	8	6.5	42	40.3
DECR. EFFICIENCY	3	2.4	46	39.5
DECR.WORKPERFORMA	1	.8	48	39.5
DISTRACTABLE	4	3.2	44	38.7
ANXIETY	6	4.8	40	37.1
STAY AT HOME	7	5.6	39	37.1
TAKE NAPS	10	8.1	35	36.3
LONELINESS	5	4.0	39	35.5
RESTLESSNESS	5	4.0	38	34.7
HEADACHE	8	6.5	32	32.3
AVOID SOCIAL ACT.	5	4.0	35	32.3
GEN ACHES & PAINS	1	.8	36	29.8
LOWERED CO-ORD.	2	1.6	30	25.8
LOWERED JUDGEMENT	5	4.0	24	23.4
ACCIDENTS	5	4.0	23	22.6
DIZZY/FAINT	2	1.6	19	16.9
FORGETFULNESS	3	2.4	15	14.5
MUSCLE-STIFFNESS	0	0.0	18	14.5
HOT FLUSHES	1	.8	12	10.5
CONFUSION	1	.8	12	10.5
INSOMNIA	1	.8	11	9.7
NAUSEA & VOMIT	1	.8	8	7.3
COLD SWEATS	0	.0	7	5.6

FREQUENCY OF MDQ SYMPTOMS (SCORE 2-6)

SOCIAL CLASS I/II	COLOURED n=71		BLACK n=80		WHITE n=116		
MUSCLE STIFFNESS	15	21.1	10	12.5	17	14.7	
HEADACHE	21	29.6	15	18.8	38	32.8	
CRAMPS	33	46.5	39	48.8	60	51.7	
BACKACHE	33	46.5	22	27.5	50	43.1	*
FATIGUE	41	57.8	39	48.8	65	56.0	
GEN ACHES & PAINS	17	23.9	29	36.3	34	29.3	
INSOMNIA	8	11.3	9	11.3	11	9.5	
FORGETFULNESS	15	21.1	12	15.0	16	13.8	
CONFUSION	10	14.1	7	8.8	12	10.3	
LOWERED JUDGEMENT	26	36.6	17	21.3	28	24.4	
DISTRACTABLE	34	47.9	24	30.0	44	37.9	
ACCIDENTS	17	23.9	3	3.8	28	24.1	*
LOWERED CO-ORDINA	19	26.8	15	18.8	32	27.6	
LOWER SCHOOL/WORK	31	43.7	28	35.0	47	40.5	
STAY AT HOME	25	35.2	25	31.3	43	37.1	
TAKE NAPS	34	47.9	40	50.0	43	37.1	
AVOID SOCIAL ACT.	26	36.6	34	42.5	37	31.9	*
DECR. EFFICIENCY	28	39.4	27	33.8	45	38.8	
DIZZY/FAINT	20	28.2	21	26.3	19	16.4	
COLD SWEATS	3	4.2	4	5.0	5	4.3	
NAUSEA & VOMIT	7	9.9	14	17.5	9	7.8	
HOT FLUSHES	8	11.3	7	8.9	12	10.3	
WEIGHT GAIN	45	63.4	33	41.3	79	68.1	*
SKIN DISORDERS	43	60.6	37	46.3	77	66.4	*
PAINFUL BREASTS	49	69.0	38	47.5	76	65.5	*
SWELLING	50	70.4	38	47.5	82	70.7	*
CRYING	30	42.3	13	16.3	65	56.0	*
LONELINESS	17	23.9	26	32.5	42	36.2	
ANXIETY	29	40.9	30	37.5	44	37.9	
RESTLESSNESS	33	46.5	42	52.5	40	34.5	*
IRRITABILITY	55	77.5	39	48.8	89	76.7	*
MOOD SWINGS	53	74.7	44	55.0	76	65.5	*
DEPRESSION	38	54.3	38	47.5	61	52.6	
TENSION	43	60.6	30	37.5	64	55.2	*
CHANGE IN EATING	33	46.5	34	42.5	48	41.4	

* denotes statistically significant difference

FREQUENCY OF MDQ SYMPTOMS (SCORE 2-6)

SOCIAL CLASS IV/V	COLOURED n=50		BLACK n=46		
MUSCLE STIFFNESS	5	10.0	10	21.7	
HEADACHE	19	38.0	9	19.6	*
CRAMPS	30	60.0	28	60.9	
BACKACHE	24	48.0	13	28.3	
FATIGUE	23	46.0	16	34.8	
GEN ACHES & PAINS	7	14.0	16	34.8	*
INSOMNIA	9	18.0	5	10.9	
FORGETFULNESS	3	6.0	5	10.9	
CONFUSION	12	24.0	6	13.0	
LOWERED JUDGEMENT	5	10.0	10	21.7	
DISTRACTABLE	19	38.0	16	34.8	
ACCIDENTS	6	12.0	11	23.9	
LOWERED CO-ORDINA	12	24.0	13	28.3	
LOWER SCHOOL/WORK	13	26.0	12	26.1	
STAY AT HOME	20	40.0	17	37.0	
TAKE NAPS	22	44.0	18	39.1	
AVOID SOCIAL ACT.	18	36.0	15	32.6	
DECR. EFFICIENCY	18	36.0	14	30.4	
DIZZY/FAINT	15	30.0	12	26.1	
COLD SWEATS	6	12.0	4	8.7	
NAUSEA & VOMIT	7	14.0	7	15.2	
HOT FLUSHES	3	6.0	3	6.5	
WEIGHT GAIN	22	44.0	24	52.2	
SKIN DISORDERS	26	52.0	22	47.8	
PAINFUL BREASTS	25	50.0	27	58.7	
SWELLING	28	56.0	18	39.1	
CRYING	11	22.0	1	2.2	*
LONLINESS	9	18.0	16	34.8	
ANXIETY	10	20.0	13	28.3	
RESTLESSNESS	21	42.0	22	47.8	
IRRITABILITY	26	52.0	23	50.0	
MOOD SWINGS	20	40.0	23	50.0	
DEPRESSION	12	24.0	18	39.1	
TENSION	16	32.0	21	45.7	
CHANGE IN EATING	20	40.0	23	50.0	

FREQUENCY OF MDQ SYMPTOMS (ANY COMPLAINT FROM 2-6)

COLOURED GROUP n=152	I/II n=71		III n=31		IV/V n=50		
MUSCLE STIFFNESS	15	21.1	5	16.1	5	10.0	
HEADACHE	21	29.6	14	45.2	19	38.0	
CRAMPS	33	46.5	14	45.2	30	60.0	
BACKACHE	33	46.5	14	45.2	24	48.0	
FATIGUE	41	57.8	15	48.4	23	46.0	
GEN ACHES & PAINS	17	23.9	5	16.1	7	14.0	
INSOMNIA	8	11.3	6	19.4	9	18.0	
FORGETFULNESS	15	21.1	5	16.1	3	6.0	
CONFUSION	10	14.1	6	19.4	12	24.0	
LOWERED JUDGEMENT	26	36.6	4	12.9	5	10.0	*
DISTRACTABLE	34	47.9	10	32.3	19	38.0	
ACCIDENTS	17	23.9	11	35.5	6	12.0	*
LOWERED CO-ORDINA	19	26.8	10	32.3	12	24.0	
LOWER SCHOOL/WORK	31	43.7	13	41.9	13	26.0	
STAY AT HOME	25	35.2	17	54.8	20	40.0	
TAKE NAPS	34	47.9	20	64.5	22	44.0	
AVOID SOCIAL ACT.	26	36.6	14	45.2	18	36.0	
DECR. EFFICIENCY	28	39.4	15	48.4	18	36.0	
DIZZY/FAINT	20	28.2	6	19.4	15	30.0	
COLD SWEATS	3	4.2	5	16.1	6	12.0	
NAUSEA & VOMIT	7	9.9	4	12.9	7	14.0	
HOT FLUSHES	8	11.3	4	12.9	3	6.0	
WEIGHT GAIN	45	63.4	23	74.2	22	44.0	*
SKIN DISORDERS	43	60.6	20	64.5	26	52.0	
PAINFUL BREASTS	49	69.0	22	71.0	25	50.0	
SWELLING	50	70.4	22	71.0	28	56.0	
CRYING	30	42.3	9	29.0	11	22.0	
LONLINESS	17	23.9	10	32.3	9	18.0	
ANXIETY	29	40.9	12	38.7	10	20.0	*
RESTLESSNESS	33	46.5	16	51.6	21	42.0	
IRRITABILITY	55	77.5	22	71.0	26	52.0	*
MOOD SWINGS	53	74.7	19	61.3	20	40.0	*
DEPRESSION	38	54.3	17	54.8	12	24.0	*
TENSION	43	60.6	15	48.4	16	32.0	*
CHANGE IN EATING	33	46.5	16	51.6	20	40.0	

FREQUENCY OF MDQ SYMPTOMS (ANY COMPLAINT FROM 2-6)

BLACK GROUP n=126	I/II n=80		IV/V n=46		
MUSCLE STIFFNESS	10	12.5	10	21.7	
HEADACHE	15	18.8	9	19.6	
CRAMPS	39	48.8	28	60.9	
BACKACHE	22	27.5	13	28.3	
FATIGUE	39	48.8	16	34.8	
GEN ACHES & PAINS	29	36.3	16	34.8	
INSOMNIA	9	11.3	5	10.9	
FORGETFULNESS	12	15.0	5	10.9	
CONFUSION	7	8.8	6	13.0	
LOWERED JUDGEMENT	17	21.3	10	21.7	
DISTRACTABLE	24	30.0	16	34.8	
ACCIDENTS	3	3.8	11	23.9	*
LOWERED CO-ORDINA	15	18.8	13	28.3	
LOWER SCHOOL/WORK	28	35.0	12	26.1	
STAY AT HOME	25	31.3	17	37.0	
TAKE NAPS	40	50.0	18	39.1	
AVOID SOCIAL ACT.	34	42.5	15	32.6	
DECR. EFFICIENCY	27	33.8	14	30.4	
DIZZY/FAINT	21	26.3	12	26.1	
COLD SWEATS	4	5.0	4	8.7	
NAUSEA & VOMIT	14	17.5	7	15.2	
HOT FLUSHES	7	8.9	3	6.5	
WEIGHT GAIN	33	41.3	24	52.2	
SKIN DISORDERS	37	46.3	22	47.8	
PAINFUL BREASTS	38	47.5	27	58.7	
SWELLING	38	47.5	18	39.1	
CRYING	13	16.3	1	2.2	*
LONLINESS	26	32.5	16	34.8	
ANXIETY	30	37.5	13	28.3	
RESTLESSNESS	42	52.5	22	47.8	
IRRITABILITY	39	48.8	23	50.0	
MOOD SWINGS	44	55.0	23	50.0	
DEPRESSION	38	47.5	18	39.1	
TENSION	30	37.5	21	45.7	
CHANGE IN EATING	34	42.5	23	50.0	