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STUDIES USING THE MOOS MENSTRUAL DISTRESS QUESTIONNAIRE

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May, 1982

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ABSTRACT

Symptoms usually associated with the menstrual cycle were studied weekly for four weeks in men and women by taking simultaneously measures of mood and personality. These were obtained using a revised Form T of the Moos' Menstrual Distress Questionnaire (MDQ) which elicits information about many possible menstrual distress symptoms; and the Eysenck Personality Questionnaire (EPQ), designed to measure four dimensions of personality, Psychoticism, Extroversion, Neuroticism and Lies.

This pretest revealed that Form T could not be used to measure menstrual cycle related symptomatology, when given weekly. This method did, however, show that males, although they do not endorse symptoms from the water retention scale, do complain more than women and are very similar in their pattern of response. EPQ scores differ with regard to sex and they remain stable over time.

After further modification, the questionnaire was administered daily to observe a small group of males (10) and females (10) over the equivalent of two menstrual cycles (60 days). The EPQ was completed by the subjects once at the beginning of the study and once at the end.

Form T is internally consistent and when given on a daily basis can differentiate between males and females and detect physical, emotional and behavioural changes related to the cyclic pattern of hormonal activity. Daily scale score fluctuations and the phase means for cycle 1 and cycle 2 reveal large within sample differences. However, all females experience some discomfort in connection with their menstrual period and some men do show a similar pattern of response. "Premenstrual" and "menstrual" means were not significantly different from "intermenstrual" means for the males on any of the MDQ symptom scales. For the females, Premenstrual and menstrual means differed significantly from intermenstrual means on several MDQ scales.

Correlations between cycle 1 and 2 do not exhibit discrepancies based on stereotypes or other distortions in processing by female subjects. Rather some evidence is provided for the consistency of women's judgements across the two measurement situations. This pattern is not repeated for men, whose symptom report is less stable.

Menstrual pain is not associated with a high N score on the EPQ. Dysmenorrhoea is significantly correlated with irritability and depression.

Since the subjects' daily scores show large inter-individual differences it might be wise to recommend that future researchers into the menstrual cycle study intensively the individual reactions of a small sample of women rather than draw generalizations from combined data.

INTRODUCTION

My personal introduction into the study of the menstrual cycle began in early 1975. At that time I was an undergraduate searching for a suitable topic for my final year project. Listening to the radio one evening I was fortunate to hear a broadcast in which Dr. Katharina Dalton outlined the problems faced by women suffering from Premenstrual Tension (PMT) and the need for more reasearch to be carried out in this field.

My reading began in earnest and I soon discovered that few topics have been and still are so clothed in tradition and excess modesty as that of menstruation. How strange that a natural process which has been characteristic of women since the beginning of time should be considered "something not to be talked about", a mark of inferiority or contamination.

Since at least 1960 there have been reports that premenstrual and menstrual problems constitute the single most common reason women consult doctors. Yet all medical science can say about this immense amount of suffering is that it is not really understood. What women are beginning to realise is that medical science has not yet taken menstrual-related suffering very seriously, and historically this probably was inevitable. Firstly, women usually recover month after month whether doctors help them or not. Women who are going to commit suicide do so most often in premenstrual states, but very few other women die because of menstrual difficulties.

Secondly, women themselves often are unaware that many of their aches and pains, their migraine headaches and swings of mood, their seemingly hopeless depressions and unreasonable angers in the week before a period are premenstrual problems.

Furthermore, each generation of women seems to be so conditioned to accept menstrual pain as inevitable, that they often suffer in silence, especially if a doctor has told them this pain they "think" they are enduring is, in the absence of any problem the doctor can discover, mostly "in their minds". Finally, most medical scientists have been and are now male - although I do not mean to imply that males have purposefully slighted the subject of menstruation. Indeed, men have made most of the discoveries about the way the menstrual cycle

works. They have catalogued many of the things that can, and often do, go wrong. They have consciensiouly devised remedies for women, and continue to do so.

The problem is more subtle and more difficult. It arises only in part from the fact that men do not experience menstruation, and so perhaps have never felt driven to find answers in the way women probably would have been if they had been in charge of science and society for centuries.

Almost 2,000 years ago in A.D. 77 the Roman author Pliny the Elder recorded in one of the 37 volumes of his celebrated Natural History this infamous observation about Ming women:

> "If they happen to approach a vessel of wine, be it ever so new, it will presently sour.... Let them handle any grasses, they will die... The very bees in the hive will die. Iron and steel presently take rust and brass likewise, with a filthy, strong and poisoned stink if they but lay hand..... Hardly can there be found", Pliny concluded, "a thing more monstrous than is that flux and course of theirs".

Pliny spent his life reading the collected wisdom of his time and long before A.D. 77 men throughout the known world were reacting to menstruation with a mixture of awe and disgust.

Long before Pliny, for example, Zoroaster, founder of the prebiblical, ancient religion of the Persians, the "Wisdom of the Magi" had proclaimed that a menstruating woman was the work of the devil, and must never be allowed to gaze upon the sacred fire or the sun, or talk to a man. Hindu law forbade a Ming woman to look at anyone, even her own children.

The laws of the priests in the Old Testament, Leviticus 15: 19-30, forbade men to touch Ming women. The Koran of the Moslems says: "They ask thee concerning women's courses, say: they are a hurt and a pollution".
In many places and in many times Ming women have been forced to live apart. Special menstrual huts are still common in some parts of the world today, among tribes in Brazil, East Africa, Ceylon and Northern India for example.

Australian Ming women are forbidden under pain of death to touch anything men use.

Yet the creation myth of at least some Australian tribes declares that in the beginning men "stole" this special menstrual magic women possess. The psychologist Bruno Bettelheim (1952) notes that the Australian Kunappi tribe has a myth that tells how originally men "had nothing; no sacred objects, no sacred ceremonies; the women had everything". Among the Dogan tribe in East Africa, H.R. Hays (1972) writes that "the menstrual taboo is so strong that a woman in this condition brings misfortune to everything she touches". Yet there is also a Dogan myth that explains how men came to be masters. This myth, according to Shuttle and Redgrove (1978), declares that: "A certain woman found the fibre skirt of the Earth Mother, and it was stained with the sacred menstrual blood of that goddess. The human woman wore the skirt and became a great queen with rule over men. Eventually, the men stole the skirt and established dominion".

The present day Australian and Dogan myths echo the basic themes of many other world myths, some stretching back into the recesses of time. Primitive men saw as mystery and magic the power which women have to generate life again and again. In this connection, it is enlightening to examine the most direct example of woman envy and one which is most startling because it runs counter to every assumption about the negative meaning of menstruation.

Sub-incision rituals have been documented as part of the ceremonial life of some tribes in New Guinea and Australia, (Bettelheim, 1952; Faergeman, 1955). During these rites surgery is performed on the penis. Men perform sub-incision rituals in order to make the penis the equivalent of the female genitals. Anthropologists have also reported that among the Wogeo of New Guinea men believe that menstruation is a cleansing process and, wishing themselves to be clean, they periodically incise the penis and allow some blood to flow, an operation often called 'man's menstruation' (Ashley-Montagu, 1937).

But what does menstrual distress in our age have to do with unscientific ideas about women and their strange powers to sour wine or ruin crops, to rust iron or put curses on men? It has to do with the seemingly unrelated and innocent fact that many women today still refer to their periods as the "curse".

Knowledge is rarely transmitted today in an exclusively oral tradition. Yet until now, people have only understood this experience - menstruation with a peculaiar blend of wisdom and ignorance handed down through the generations by indirect implications. This tradition is usually guarded by a taboo so deep that in public speech the very existence of the taboo is denied.

The relationship between the mind and the body is here at its most mysterious. The uterus is not an organ like the liver or the bladder. It is finely tuned into the emotions expressing buried and delicate messages of the psyche. In the past it was usually anthropologists who broke this chain of communication from one woman to another of beliefs surrounding menstruation.

The most exhaustive survey is to be found in Robert Briffault's 'The Mothers' (1927). The underlying feeling in many such studies, though not in Briffault, has often been one of self-congratulation: high cultures like our own have no need for menstrual huts in which to confine the magic of the menstruating woman. Yet if anthropologists came to examine us they would probably observe that our society has buried menstruation beyond the reach of language. Doris Lessing was the first author to describe what a woman felt and did during an ordinary period, in her novel The Golden Notebook as late as 1962. The advertisements for sanitary protection still emphasise their product's effectiveness in making menstruation disappear. Internal tampon manufacturers stress that the wearer herslf need hardly know she is menstruating.

Further Miller and Smith, (1975) discovered that it is very likely that many women would choose to eliminate their menses for some interval in their lives between menarche and menopause, 80% of their sample wished to do so. In general, this suggests that a woman's likelihood of elimination represents a resolution of two generally opposing consideration regarding the menstrual cycle: its importance as a source of female identity versus the utility to the woman of not having it.

Using the Moos Menstrual Distress Questionnaire, Miller and Smith hypothesized that women with concentration problems during menstruation want to keep their menstrual cycle because it provides an understanding of themselves and rationalizes

their behaviour. But it seems probable that women with behaviour changes, premenstrually and menstrually, favour elimination of the menstrual cycle because of the very practical effects it has on their school, work and social activities. Many women from this study claimed their period to be a nuisance, messy and embarrassing.

The chief result produced by this form of the universal menstrual taboo has not been belief in external pollution for instance, the souring of wine, as recorded by Pliny. The result now is what doctors call premenstrual tension and/or menstrual distress, and what is felt by many women as sharp and bitter anxiety and pain, not just of the body but of the mind.

The review of the literature to be presented suggests that the menstrual cycle is an important area of study for psychologists and medical personnel alike. The study of the effects of menstruation is one of great significance, as it deals with the changes occurring 13 times yearly, during an average of 30 years in the life of every woman. On the minimun basis of 3 days for each period, these physiological changes take place during a total of 39 days of each year for approximately half of the life span of the average woman, in actual practice it may be a lot more. Actually, more than 3 years of the most active portion of a woman's life is involved in the destructive phase of the menstrual cycle.

Secondly, the menstruating woman experiences a monthly hormonally determined physiological rhythm and many women have parallel fluctuations in mood. Premenstrual increases in depression, irritability and anxiety have been widely reported in normal women with estimates of incidence ranging from 30 to 95% depending on the definition used (Altman et al, 1941; Greene and Dalton, 1953; Paulson, 1956; Fluhman, 1956; Pennington, 1957).

Third, there is some evidence which suggests that the occurrence of premenstrual and menstrual symptoms may be related to personality variables such as general maladjustment or emotional instability, and to other variables of psychological interest (Rose, 1949; Rees, 1953; Coppen and Kessel, 1963; Levitt and Lubin, 1967; May, 1975; Clare, 1977; Zola et al, 1979).

The review to be presented makes evident the need for some standardization in menstrual cycle research. The data are inconsistent and unclear in many areas. The variation in the findings of the various investigations suggests that some standardization of instruments used in the assessment of menstrual cycle symptomatology is advisable.

CHAPTER 1

Premenstrual Tension

It has long been recognised that a significant number of women during the reproductive period of their lives complain of a wide variey of distressing symptoms during the premenstuum. The term 'premenstrual tension' coined by Frank (1931) has in practice been used to describe a varying collection of such symptoms including nervous tension, irritability, anxiety depression, headaches, giddiness, palpitations and swelling. Other symptoms frequently occur and a relatively recent comprehensive review of the literature (Moos and Leiderman, 1977) on this subject identified over 150 symptoms which, it has been claimed, are linked with the premenstrual phase of the menstrual cycle.

There is remarkable variation in the reported prevalence of premenstrual disorders. In one study (Pennington, 1957) 95% of a group of American women were judged to experience 'premenstrual tension' sufficient to cause 'social disharmony and economic disruption' whereas a British study based on a postal questionnaire, reported premenstrual irritability in 25% of single women and in over 40% of married women (Coppen and Kessel, 1963). The questionnaire study of Sutherland and Stewart (1965) of 150 students and nurses reported that 33% experienced "the characteristic premenstrual tension state", by which they meant acute depression and irritability, physical lethargy and uncomfortable bloatedness. However, a further 58% admitted to some premenstrual symptomatology but the authors were not satisfied that this group should be classed as having either 'premenstrual tension' or suffering from the 'premenstrual syndrome' with the implication that a pathological syndrome exists.

In spite of, or because of the lack of agreement concerning the precise definition of premenstrual tension and the variation in its prevalence, a wide variety of instruments were devised to measure or calculate its impact. The questionnaire devised by Coppen and Kessel (1963) was very primitive and as far as can be ascertained, was not standardized or validated.

The Menstrual Symptom Questionnaire was constucted by Chesney and Tasto (1975) as a psychometric test to differentiate between spasmodic and congestive dysmenorrhea as characterised by Dalton (1969).

The Feminine Interest Questionnaire was developed by Miller, (1975) as a measure of female role orientation.

The Menstrual Elimination Questionnaire was developed by Miller and Smith (1975) specifically for a study on the attitude towards menstruation and the willingness to eliminate their menses for a period of time.

The Daily Symptom Rating Scale (Taylor, 1979) was used together with physiological based techniques to assess the timing of menstruation-related symptoms.

The foregoing reflects the wide and various aspects of the menstrual cycle that are being and have been studied, the etiology of menstrual distress, however, remains obscure.

Another group of studies has been concerned with the relationship between personality variables and menstrual cycle variables. In general, the data on these relationships have been inconsistent. Using interview data (Rees,1953) found no relationship between premenstrual symptomatology and personality or emotional stability in women who had not sought psychiatric help (normals). In his total group of normals and psychiatric patients, however, he found a positive correlation between a rating of neurotic constitution based on a psychiatric interview and severity of premenstrual symptoms. In another study of psychiatric patients Suarez-murias (1953) could find no particular personality type consistently associated with the premenstrual symptoms, but on the basis of interview data he concluded that emotional maturity and type of emotional make-up were of significance. For this reason, the possible relationship between the premenstrual syndrome and operationally defined forms of personality warrants more precise exploration than it has hitherto received.

One of the earliest studies by Coppen and Kessel, (1963) reported that the syndrome occurred more frequently in neurotic than in normal subjects, and that there was a correlation between intensity of premenstrual discomfort and distress and neurotic predisposition. However, some severely neurotic women did not complain of premenstrual symptoms at all.

The results of treatment also indicated that there was not a simple relationship between neuroticism and premenstrual symptoms - neurotic women who improved psychologically with psychotherapy did not necessarily improve in their premenstrual state. Coppen and Kessel, in their study of 500 randomly sampled women, assessed personality by means of the Eysenck Personality Inventory and reported a positive correlation between premenstrual tension and neuroticism scores. This study, while often quoted in support of an association between premenstrual tension and psychological instability, was actually studying 'neuroticism' defined by Eysenck as a general 'emotional lability' (anxiety, depression, tension and irritability) and so it is not entirely surprising that a positive correlation between the premenstrual questionnaire results and scores on the Eysenck Personality Inventory was found.

This distinction between traits and symptoms was underlined in the study by Golub, (1976) of 50 married women in whom magnitude of anxiety and depression in the premenstruum was assessed, and the relationship between premenstrual mood changes and trait anxiety explored. Premenstrual state anxiety and depression scores were significantly higher than those obtained mid-cycle, but were much lower than those of patients with psychiatric disorders. No significant correlation was found between trait anxiety and premenstual anxiety and depression. The author concluded that the hypothesis that premenstrual mood changes are a function of personal adjustment remains to be established. Thus it forms part of a larger problem of whether changes in overt behaviour and inner experiences during the menstrual cycle are to be explained solely by the periodic changes in the endocrine processes (Hamburg, 1966; Speroff and Vande Wield, 1971; Little and Zahn, 1974; Patkai et al, 1974; Bell, 1976; Demarchi, 1976) of whether the woman's experience of such changes reflects either certain characteristics of her personality (Suarez-Murias, 1953; Coppen and Kessel, 1963; Berry and McQuire, 1972; Bernstein, 1975; Gotteschalk et al, 1962; Ivey and Bardwick, 1968; Smith, 1976; and Surrey et al 1975), or the attitude of our society towards the menstruating woman as being impaired or even sick (Brush, 1938; Gill, 1943; Seward, 1946; Rose, 1949; Melody, 1961).

One reason, in additions to the imperfections in the methods of studying the problem why cyclic psychological changes have been equivocal, is probably the fact that other factors which cannot be sufficiently controlled in women living a normal life are apt to bring about the same kind of slight changes in performance at other times. Another reason maybe that, as Freund (1930) has shown in her study of the level of performance during the menstrual period, the woman is able to overcome the slight menstrual handicap by increased effort if she is working to a definite goal. On the other hand, psychologists and psychiatrists generally agree that the emotional stability of the woman may be affected to some extent shortly before and during the menstrual period. It is not clear to what extent these periodic emotional disturbances are affected directly by hormones. The fact, however, that cyclic hormonal changes are not invariably associated with significant symptomatology suggests that, regardless of what the prevalent cause of these emotional disturbances is, the degree to which they manifest themselves and influence other aspects of her behaviour may be indicative of the woman's personality.

Other research linking menstrual phenomena and psycho-social variables have shown that the immediate pre and post-menstrual periods result in a greater tendency to commit violent crime (Morton et al, 1953; Dalton, 1961; Ribero, 1962), also to commit suicide or think about it (Mackinnon et al, 1959; Tonks et al, 1968; Mandle and Mandle, 1967; Wetzel et al 1971; Parvathi et al, 1972). Jacob and Charles (1970) corroborate Dalton's findings, reporting that of 200 women seeking psychiatric help, the times of maximal contact occurred during the menstrual period, premenstrual phase, and mid-cycle. Mandle and Mandle (1967) and Wetzel et al (1971) noted an increased incidence of calls to a Suicide Prevention Centre at these times. However, Birchnell and Floyd (1974), in contrast to previous studies, compared the observed distribution of suicide attempts with a calculated expected distribution which took into account variability of cycle lengths. They found no significant differences between observed and expected numbers.

Women are more likely to bring their children to see the

doctor (Dalton, 1966) and are also more likely to be admitted to the hospital with mental illness at this time (Dalton, 1959). An increase in misdemeanours among school girls, especially regarding punctuality and forgetfulness, has also been noted during menstruation, (Dalton, 1969). Dalton reported that half of the inmates of a women's prison committed their crimes during menstruation or during the immediate premenstrual phase, (1961).

While there seems no doubt that mood swings occur with most normal women, the other dire events described seem to occur for the most part to women who were probably unstable to start with. It is certainly true that the authors of many of the classic papers discussing premenstrual tension have studied either neurotic patients in hospitals or women chosen <u>because</u> they were suffering from premenstrual tension, (Geiringer, 1951; Greene and Dalton, 1953; Taylor, 1979).

What of the performance of normal women in their everyday work ? Is there any evidence that this is affected cyclically ? Of such studies that have been done on women performing fairly simple tasks such as reaction time tests (Pierson and Lockhart, 1963) or typing and card punching, (Redgrove, 1971), only typing performance was affected by the cycle (during days 5-10 and 18-22). With regard to more complex intellectual functioning, Wickham, (1958) after administering a large battery of intelligence and performance tests, found significant changes in the menstrual phase of the cycle only with the "instructions" test, (this involved the comprehension of very complicated instructions). Sommer (1972) administered the Watson-Gleser Critical Thinking Appraisal Task and found no cyclical changes at all. Raney (1974) found that women in the premenstrual phase of their menstrual cycle were more likely to evidence the motive to avoid success on a projective assessment than women in the inter-menstrual phase. No clear pattern emerged for women who were menstruating at the time of assessment. Hagan (1975) demonstrated significant sex differences in driving performance. Whilst males who drove too fast did so with confidence, females drove slowly and were not confident. Dalton, (1968) also noted the influence of menstruation on examination results.

Much more work is clearly necessary to validate the statistical significance of such observations. This is

particularly important now that within the present social framework women are challenging the principle of male domination of large scale policy determination, of critical decision making and of power control in general. Further, women are entering professions formerly thought to be unsuitable and inappropriate to a woman's temperament. Now that many individuals will be looking at the biological and psychological characteristics of women with an eye to potential performance in new areas of endeavour, it seems necessary to point out that other investigations point to the conclusion that there is no reason to believe that women's fundamental physiological rhythm affects considerably or constantly the quality or quantity of her work, despite <u>some</u> evidence to the contrary, menstruation has, as a rule no noticeable effect on working capacity among normal healthy women, (Lough, 1937; Sommer, 1973; Parlee, 1974). Of course, there are individual differences among women, some of whom may find an appreciable lowering of efficiency during their menstrual periods. These differences should not, however, be regarded as normal and inevitable, but rather as calling for special consideration. The natural state must be the touchstone of our conception of health, and to regard the course of the female cycle as a condition to be corrected and altered by medical intervention places it on a par with abnormality. Dalton does in fact call menstruation a 'cultural disease' (1978), but the fundamental principle of equality of the sexes cannot be defended if the hormonal flux in the female is considered intrinsically aberrant.

1:1 Arousal / Hormonal Studies

The studies previously cited indicate that the female, be she neurotic, psychotic, or so called 'normal', undergoes rhythmic mood hormonal-metabolic changes in the course of any given menstrual cycle. The menstrual cycle and pregnancy are both characterised by dramatic changes in the level of several hormones. In the normal ovulatory menstrual cycle there are two peaks of oestrogen secretion (Brown and Matthew, 1962); an ovulation peak, which occurs near the end of the follicular phase and a luteal peak which occurs in the middle of the luteal phase. Progesterone is secreted by the luteum beginning in the mid-cycle and reaches a peak 4-7 days prior to menstruation after which it falls off quite rapidly. However, the currently existing physiological and psychological explanations offered cannot account completely for the findings presented. There is increasing evidence that behavioural states and sexual responsecan be correlated with levels of certain hormones. One of the studies to first recognise this was done by Benedek and Rubenstein (1939). Benedek studied the dreams of 15 women whilst Rubenstein independently took vaginal smears to determine the exact phases of the menstrual cycle. Benedek was able to predict very accurately from the dreams at what stage her subjects were experiencing ovulation or menstruation.

There was just one problem with this landmark study as it appeared in the medical literature thereafter. While the 15 women reported having the most sexual desire at menstruation, Benedek maintained that they were actually "most sexual" at the time of ovulation because their dreams at that time showed that they were most "loving" and "receptive" - the supposedly correct forms for passive feminine sexuality. The more overt "aggressive" kinds of sexual feeling the women felt near menstruation were, according to Benedek 'simply of a much lower order and much too masculine for women'.

Yet those feelings existed, as one pioneer in human sexual studies, Havelock Ellis already had noted as early as 1910 and as the later pioneer Alfred Kinsey was again to note in 1950.

In 1960 Masters and Johnson also reported that "many women are interested in and desire sexual activity during

their menstrual periods". But it seems extraordinary that women should experience a peak of sexual desire just when menstrual taboos prohibit intercourse. Or that sexual activity should relieve some types of menstrual distress when so many women are convinced they are not as "clean" or as "feminine" as at other times.

Benedek's conclusion, which contends that during the oestrogen phase of the cycle the women is oriented toward her environment while during the progesterone phase she is oriented toward her body, finds neurophysiological support in the work of Kawakami and Terasawa, (1967). They conclude that during the oestrogen phase peripheral afferent impulses were facilitated and viscero-sensory impulses were inhibited, while during periods of progesterone dominance the reverse was true.

In Moos' study (1969) of the menstrual cycle he found that women tend to report lower activation at the phase of the cycle which has the highest progesterone blood levels. The outer directed sense of well-being and alertness described by Benedek is confirmed by Moos. His scales of self-rated pleasantness, activation and sexual arousal all increase during the follicular phase. His findings of increased tension in the premenstrual period is consistent with many other studies.

In any event, it does seem from the foregoing that the old taboos continue to work against women in harmful ways. For who can say how much menstrual distress is, and in the past, was created by women's culturally conditioned inability to recognise that part of their increased restlessness and irritability near menstruation may be due to increased sexual feelings that may not be acknowledged or satisfied.

Dalton is the chief proponent of the theory that the premenstrual syndrome is caused by a hormone imbalance in which there is too little progesterone in relation to oestrogen. Symptoms disappear when progesterone is absent from the blood stream - after menstruation.

The onset of the premenstrual syndrome is usually either at puberty, or after taking oral contraceptives or after pregnancy, in other words at all times of hormonal upset. There is a frequent absence of symptoms, usually associated with PMS during pregnancy when high amounts of progesterone

are produced by the placenta. Temperature charts confirm that the rise after ovulation is poorly sustained in premenstrual tension sufferers than normal women without menstrual symptoms. Taylor, (1979) found that of 105 PMT sufferers, half had a lowered progesterone level in the second half of the cycle.

The relationship between rapidly changing hormone levels and increased probability of psychopathology has led Hamburg (1966) to stress that individual differences in progesterone metabolism deserve investigation as one of the possible variables in differential susceptibility at these periods. He states that "It is an interesting possibility, but one that has not yet been investigated, that genetically determined abnormalities in progesterone metabolism may predispose to some premenstrual difficulties". Individual differences in progesterone metabolism on a genetic basis might lead for instance to the accumulation in some individuals of a metabolite whose effects on the brain are particularly potent. In this connection it is worth noting that the progesterone metabolite has potent anaesthetic properties (Heftman and Mosettig, 1960), but there is so far no information as to whether this metabolite ever occurs in the brain.

CHAPTER 2

Methodological Problems

A constantly recurring theme throughout the previous chapter was the dearth of unequivocal evidence which inevitably invites speculation about definitions, causes and treatments for menstrual difficulties and makes obvious the need for further study. One major barrier to progress must be the difficulty associated with research in this area which ranges from problems for psychologists working in a non-medical environment, acquiring a representative sample, the difficulty of accurately determining cycle stages in individual subjects, to the inevitable reticence whcih, even in this day and age, surrounds the topic of menstruation. Redgrave, (1971), for example, describes her doubts about the reliability of data from one 'very self-conscious girl' who it was possible, '..... felt reluctant to disclose the dates of her menstrual period'.

Working initially for a student population, where one would expect a more enlightened approach, I came upon much hesitation, embarrassment and even prudery when the topic of menstruation was raised. Dalton (1970) writes on a 'blinkered attitude to menstruation which is utterly Victorian'. So, given such reticience, there are a lot of problems in recruiting subjects. Because of this, samples used in menstrual studies have been self-selected samples, in the sense that conveniently accessible groups of women have been used, and who have been willing to be used. This invariably points to a student population. Related to this is the general lack of comparibility of sample composition, for example, age, parity, educational, social and marital status.

When subjects do volunteer for a study, it is increasingly difficult to find a normally cycling subject who is not taking oral contraceptives. Much of the disagreement among the findings from various studies regarding the mean length, variability, and other statistical aspects of menstruation can be attributed to differences in conceptualization and research design which make the studies difficult, if not impossible, to compare. Having found willing subjects, it is still a demanding process for subject and experimenter to

arrange repeated testing sessions which can accommodate the idiosyncrasies of individual cycles. The existence of inter and intra-subject variability in cycle length exacerbates the problem of adequately defining its phases.

Ideally, the phases should be defined by their hormonal and morphological characteristics, but this involves techniques of biochemical, cytological and histological investigation not normally available to the psychologist. The precision with which phases can be identified determines the research strategy used in any investigation of menstrual cycle phenomena.

There are a number of methodological problems encountered in research in this area. Nomenclature and phase definition are often ambiguous, variable and arbitrary. Sommer, (1973) presents a summary of the research covered in her review with respect to phase differentiation and definition as well as the behavioural indices used. This research shows the variability in phase designation which makes it difficult to compare studies and generalize results from one study to another. Those phases used most consistently by researchers and subjected to the closest scrutiny are the premenstrual and the menstrual, the time when circulating hormones (oestrogen and progesterone) reach their lowest levels.

The difficulty of comparison among studies is made more difficult by the lack of consistency in phase definition: "premenstrual" refers to a phase which may range from an entire week preceding onset of flow, (Lamb, 1953; Morton, 1953; Sommer, 1972; Moos, 1968; Glass et al, 1951), to as few as two days prior to the onset of flow, (Pierson and Lockhart, 1963; Little and Zahn, 1974).

There is no general agreement as to the time of the cycle when women are most liable to emotional upset. The proposal by Frank (1931) and Morton (1950) of a premenstual syndrome led investigators to anticipate most disturbance during the latter part of the cycle. Dalton (1970) however, regards the most vulnerable time to be the 4 days immediately prior to menstruation and the first 4 days of menstruation. These 8 days she terms the paramenstruum. She also believes that symptoms may occasionally occur at ovulation, lasting for only a day or two, easing for a few days and returning during the premenstruum. It is certainly the case that a number of studies,

including her own, demonstate a small, though usually in itself significant peak in the incidence of psychiatric disturbance about this time, (Dalton, 1959; Ribero, 1962; Whitehead, 1934). There is scarcely a part of the menstrual cycle, therefore, which has not been implicated at one time or another for causing physical and/or psychological disturbance.

Most previous workers have adopted a standard 28 day cycle as their frame of reference. Tonks et al, (1968) said "If the estimated time before the next period exceeded 28 days, it was counted as 28 days to simplify calculation". They did, however, admit that this created an artifactual peak occurring on day 1 of the cycle. Dalton, (1959) stated that "All patients with amenorrhoea exceeding 28 days were excluded". This would have the effect of including women with cycles longer than 28 days who were in the earlier part of their cycles, and again therefore would create an artifactual excess of subjects who were at the beginning of their cycle. Thin, (1968) made no reference to cycle length though stated that his sample comprised "normally-menstruating women". His results were plotted on a 28 day graph. Mandle and Mandle (1967) divided the number of days from the commencement of the cycle by the total length of the cycle and multiplied by 7. This enabled them to construct what they term a "standardized menstrual cycle" which placed each subject, irrespective of cycle length, into one of 7 positions, creating something which artificially resembled a 28 day cycle distribution. This system fails because ovulation does not necessarily occur at mid-cycle: thus for a woman with a 3 week cycle the luteal phase would correspond to the last five sevenths of the cycle, whereas for a woman with a 6 week cycle it would correspond only to the last two to three sevenths of the cycle.

It is fairly generally agreed that irrespective of the total length of the cycle, the corpus luteum has a life that varies between 10 and 16 days. This means that ovulation bears a fairly constant relation to the ensuing menstrual period. By using the phase to cover the 4 days 13-16, most women's ovulation would be included, and these are the days when peak plasma levels of follicle stimulating hormone and luteinizing hormone are observed.

When the division is made into 4 phases then use is made of only the 4 days immediately before menstruation as the premenstrual phase, the first 4 days of menstruation as the menstrual phase, the next 4 days as the post-menstrual phase,

and all other days of the cycle are included in the inter-menstrual phase. This division emphasizes the effect of the rapid fall in oestrogen and progesterone in the prenenstruum, and low oestrogen and no progesterone in menstruation. This division can be used regardless of cycle length and is especially useful for women who cannot accurately remember the last date of menstruation, but can confirm whether or not they are menstruating on testing days and can then be tested 4-7 days later.

Much of the disagreement among published studies regarding mean length, variability, and other statistical aspects of human menstruation can be attributed to differences in conceptualization and research design which make the studies not strictly comparable.

In this regard, the use of self-report tests is a major issue. Seward (1944), in a review of the menstrual cycle and its effects on women's work, emphasised the different results obtained with subjective measures. The latter in the form of diaries, mood scales and interviews showed menstrual cycle related fluctuations, whereas the former studies, when proper controls were used, did not.

McCance, Luff and Widdowson (1937) collected self-reports from 167 women (over 4-6 menstrual cycles) of their experience of 10 carefully defined symptoms and moods. The data, consisting of records kept over 780 cycles, showed discrepancies between daily record techniques and the result of a preliminary questionnaire on menstrusl cycle symptoms given before the study was made, discrepancies " so frequent that they throw considerable doubt upon the value of any work on this subject based upon history or questionnaire". McCance et al reported that the majority of individual records showed no evidence of rhythm during the period of study. When records were combined, however, cyclic changes were observed, related to the menstrual cycle, in fatique, abdominal pain, backache, headache, breast changes, arousal, and the effort required for intellectual work.

Rees (1953) also collected day-to-day records of reports of symptoms from 30 women (over a period of "some months") and found overall patterns of premenstrual increases in tension, irritability, depression, emotional lability, anxiety, swelling, fatique and headaches. In a similar study with more subjects, Rees (1953b) noted that 56% of the women did not report any

significant "PMT symptoms"; the method section is not sufficiently detailed, however, to determine precisely what data were collected to support this conclusion.

The Nowlis Mood and Adjective Checklist (1965) has been used to study daily changes in self-ratings over the course of the menstrual cycle, with inconsistent results, (Moos et al, 1969; Silbergeld, 1971; Beaumont and Richards and Gelder, 1975).

Altman et al (1941) followed 10 subjects over a total of 55 menstrual cycles recording variations in physiological events associated with ovulation and psychological changes. Individual women showed variability in patterns of behaviour.

Abramson and Torghele (1961) reported changes in daily recording of weight, temperature and 'psychosomatic symptomatology'. As was the case in Rees' reports, information which might have been gained in a longitudinal study is lost since the authors did not report the ratings for individual symptoms at different points throughout the cycle; instead they presented bar graphs of the total number of times individual signs ans symptoms were reported. In the absence of a fuller presentation of the data and of control groups of men, i.e. non-menstruating individuals, it is unclear whether such'psychosomatic symptomatology' can be taken as evidence of premenstrual tension. Dalton's (1964) use of control groups, unusual in studies of this kind, raises the question of how to interpret any fluctuations in day-to-day records of activites; she reportedthat punishment records in schools failed to show 28 day cycles for males but did show them for female prisoners and school girls, both those who were menstruating and those who had not started their periods.

One could say that male performance is by definition irrelevant to the study of behavioural changes associated with the menstrual cycle, but it is not irrelevant to studies of rhythmic changes in human behaviour, which may be a more useful concept in a general psychological theory.

The question of control groups, then, points to a second assumption which seems to underlie studies of premenstrual tension, that is the assumption that the menstrusl cycle is relevant to the interpretation of a great many cyclic changes in behaviour in females. In view of the evidence of the pervasiveness of cyclic phenomena in human beings (Luce, 1970), control groups would appear to be essential for the proper interpretation of data on

female subjects. Hersey, (1931) for example, has reported finding cycles of emotionality in males (determined on the basis of daily observations of behaviour and self-reports). These cycles varied from 3½ to 9 weeks in length, but were constant, within + or - one week, and predictable for a given individual. Lieber and Sherin (1972) have reported finding lunar cycles in the occurrence of violent crimes - whether committed by males or females.

Sexual cycles (rhythmical changes of certain physiological and behavioural parameters) appear to exist in males of certain animal species (rabbits, cattle, rats, mice and sheep) and such cycles are expressed in a variety of ways, e.g. volume of ejaculate, sperm cell concentration, sexual drive and fertility, (Kihlstrom, 1966; Ingelman-Sundberg, 1971). In many cases where a male sexual cycle is identified, the period of the cycle is approximately the same as the period of sexual cycle of the female of the same species. The human male has been studied much less extensively in this regard.

A study conducted by Doering et al, (1975) indicated that in a substantial proportion of young men plasma testosterone levels fluctuate with a discernible rhythmicity. The period of such rhythms varies from individual to individual but they thought it to be clearly longer that approximately longer than 10 days suggested in the literature, (Halberg et al, 1965; Manson, 1965; Exley and Corker, 1966; Ismail and Harkness, 1967; Corker and Exley, 1968; Anon, 1970 and Kihlstrom, 1971). Cycles detected in Doering's group of subjects have 'periods' predominantly in the 20-30 day range. Since the design of the study precluded finding cycles greater that 30 days, the average cycle length may approximate that of the female menstrual cycle.

John Nicholson (1979) reporting the results of a study made recently in California showed that some men do have a hormonal cycle of varying lengths. He argues that cultural expectations about how women should behave affect them more than their biology. Society's ignorance of men's physical and emotional ups and downs helps to keep their temperaments equable, whereas women are expected to be volatile and unreliable and therefore become so.

Whatever the cause of such rhythmic behaviour in non-menstruating individuals, their existence points to the

necessity of control groups for the interpretation of cyclic phenomena as well as for determining a baseline for describing any changes which may be found only in one sex. Males seem to be a logical choice for a comparison sample, since the male experience has been the implicit standard against which feminine fluctuations have been compared, usually invidiously, Sommer, 1973; Parlee, 1974; Wilcoxon et al, 1976).

Any attempt to summarize what is now known about the menstrual cycle encounters many discrepancies that cannot be resolved. One major problem is the diversity of assessment techniques. Each experimenter has defined and rated symptoms in an idiosyncratic way that makes it difficult to compare results across studies. Psychosomatic studies of emotion need an easily administered psychological test that provides comprehensive and immediate measurement of the affect associated with a given physiological state.

CHAPTER 3

3:1 Study 1

Background to the Present Study

The interests of the author were first in the menstrual cycle itself and the measurement of variation using a reliable tool which permitted quantitative data to be assessed; secondly, the implications it has for sex differences and mood change.

The first large scale attempt, reported in detail, to construct a questionnaire for assessing the psychological changes associated with the menstrual cycle is that of Moos, (1968, 1969a; 1969b). Since the Moos Menstrual Distress Questionnaire (MDQ) is the most comprehensive of its type available and is increasingly and widely used (Silbergeld et al, 1971; Sommer, 1972), a brief description of the MDQ and its development may be in order.

The MDQ consists of 47 symptoms compiled from open-ended questionnaires, interviews, a comprehensive review of the literature, and a list of control symptoms from the Blatt Menopausal Index. (1953). The items are rated on a 6 point scale according to severity of experience, from 1 (no experience at all) to 6 (acute or partially disabling). There are two forms of the MDQ. Form A asks for the rating of the symptoms during the premenstrual, menstrual and intermenstrual phases of the menstrual cycle. Form T asks for the subjects' experience at the time she is filling out the questionnaire regardless of where she is in her menstrual cycle.

On the basis of the ratings of these symptoms by his normative sample of 839 women, Moos draws several conclusions, among them that "30-50% of normal, young married women are bothered to some extent by cyclic symptoms". To assess score stability Moos et al (1969) tested a small group of women (15) on the MDQ over 2 cycles. However, this test was carried out on only 24 of the total 47 symptoms. Moos concludes that "women who complain of symptoms in cycle 1 also tend to complain of symptoms in cycle 2. While it is not clear here whether the consistency of the women's experience or the reliability of the MDQ is at issue, results

showing similarity over two cycles would tend to confirm the consistency of both. In the study by Moos et al (1969) the women were tested on approximately the 2nd, 7th, 14th, 19th, 24th, 25th, 26th, 27th, and 28th days of two consecutive cycles. What data were gathered on these test days, however, is unclear. The information given in published papers and in the preliminary and, indeed, subsequent Manuals of the MDQ is not sufficiently detailed that this study using the Moos could be replicated. What is clear is that a random sample of women were not given the full 48 item MDQ. Given the standard meaning of test reliability, we do not know whether the MDQ has either test-retest reliability or split half reliability when it is given in the complete form.

The use of questionnaires for the study of the menstrual cycle has come into question. Zimmerman and Parlee (1973) found that " daily self-ratings of various symptoms showed no significant changes when the appropriate statistical techniques were used". In this and another publication Parlee (1974) states that many menstrual studies may be supporting cultural stereotypes rather than actual valid scientific findings.

Parlee (1974) criticizes the MDQ on several points. She states that the Manual accompanying the questionnaire does not report subject information that she believes to be vital to the interpretation of the results; nearly half of the women in Moos' normative group were taking oral contraceptives, 10% of the women were pregnant at the time they completed the questionnaire., 5% did not answer the question concerning the use of contraception, and over half of the subjects had not yet had children. Moos (1969) reports these data elsewhere, but they are not included in the MDQ Manual. Parlee (1974) also criticizes Moos' failure to assess the stability of the MDQ scores, stating that due to the lack of empirical test validity, the data illustrate the "response bias ot overall tendency to respond with either high or low ratings, regardless of item content". She further points out that there was no information available on test-retest or split half reliability for the MDQ. This, however, was remedied by Markum (1976) and Rouse (1978).

Markum (1976) assessed the test-retest reliability of the Menstrual Distress Questionnaire and attempted to

determine if subjects really do answer the MDQ according to a stereotyped attitude about menstruation. She found that the MDQ has high internal consistency and test-retest reliability, regardless of whether the subject knows the questionnaire deals with menstruation or not. This study questions, therefore, Parlee's (1974) conclusion that the MDQ may be measuring cultural stereotypes. However, Markum administered Form T only and she did not specify the gap between one completion and the next. Because of the nature of the study the instructions on the questionnaire were masked for the experimental group.

Rouse (1978) conducted a preliminary investigation to explore the sensitivity of the MDQ that had not, as far as could be ascertained, been standardized on a British sample of women. She found that the questionnaire presented certain problems for a large number of women. Moos maintains that it takes only about 5 minutes for a woman to fill out the questionnaire. The average woman in Rouse's sample found the MDQ somewhat complicated and difficult to understand; consequently it took at least 20 minutes in the majority of cases for the woman to complete Form A only. Particular words and phrases contained in the instructions on the questionnaire appeared to be misleading or conveyed the wrong "set" regarding what the woman was required to do. For example, the manner in which the questionnaire is set out under the section asking for dates within the menstrual cycle is bewildering. The lettering used to separate the phases within the cycle are cited in reverse order from that which is usual; this together with the use of words such as "delineate" and "lowered motor coordination" all proved unintelligible to many women given the questionnaire. For these reasons the questionnaire appears couched in a some what artifical form.

Nevertheless, this particular study proved to be of value on 2 counts: 1. It showed the MDQ to be capable of reflecting symptomatology over one menstrual cycle in normal subjects exposed to the random stimulation of normally occurring symptoms; and 2. It provided a point of departure for future investigations using a newly designed Menstrual Distress Questionnaire.

The primary purpose of this first study was to explore the sensitivity of a quantitative tool that has undergone revision and modification. The Questionnaire systematically obtains information on a representative sample of menstrual cycle symptoms and permits the identification of different pre-menstrual symptom profiles. Moos, (1969) identified eight symptom clusters, but two of these did not show cyclical variation (Arousal and Control) in the Rouse (1978) study.

The test of sensitivity was the capacity of this revised quantitative tool to detect the variations in mood levels associated with the rhythms of the female cycle. The researcher felt that if both males and females were asked about their own experience of symptoms over a period of time, the amount of mood change would vary with certain phases of the menstrual cycle for the females, but the males would show little similarity, if any, to the females' reporting of symptoms.

Because Form T of the MDQ, when administered in relation to phase, can provide separate scores for all phases of the cycle, it was possible to examine relationships between personality as measured by the Eysenck Personality Questionnaire and menstrual symptoms as measured by the Menstrual Distress Questionnaire.

The general hypothesis was that the EPQ scores on the Psychoticism, Extroversion, Neuroticism and Lie scale would correlate with some of the MDQ scales.

3:2 Study 1

Subjects

40 volunteers who expressed an interest in partipating in a one month study on personality change were recruited from a first-year psychology course at the City University. The investigator, by recruiting first-year undergraduates, had hoped to have among the subjects a high proportion of female students who had not as yet no sexual partner and who were, therefore, also not using contraceptives. The subjects ranged in age from 18-25. All were single and nulliparous. Of the original 40 subjects, 14 were excluded from the analyses for one or more of the following reasons:-

1. Use of oral contraceptives (9)., other means of contraception (2).
2. Failure to follow instructions (2 males) and
3. Failure to complete questionnaires (1 Male).

Data from 26 subjects was finally utilized, (13 males, 13 females).

Instruments

Menstrual Distress Questionnaire

The Menstrual Distress Questionnaire (MDQ) asks for age, marital status, number of children, occupation and the date of completion.

The MDQ is a 47 item list designed to assess menstrual cycle symptoms at the time of filling out the questionnaire. The items are divided into 8 symptom scale groups and these are outlined in Table 1. For the purposes of this study the scales 'Arousal' and 'Control' were omitted.

The original Moos' MDQ required the respondents to rate each symptom on a 6 point scale ranging from 'no experience of the symptom' to 'acute and partially disabling'. The modified version utilized 5 scales omitting 'severe', as it was assumed that 'acute' and 'partially disabling' covered this adequately.

The revised questionnaire listed the symptoms in scale order to enable ease of scoring. Slight alterations were made so that all items could be made applicable to both sexes, i.e. to the item 'painful breasts', the word 'chest' was added. Some symptom items were clarified:- to the symptom 'insomnia' was added 'sleeplessness'. Distractible became 'easily distracted'.

Lowered motor coordination became 'clumsy'. Decreased efficiency became 'less capable'. To 'nausea' the word 'sickness' was added. Hot flashes became 'hot flushes' and to the item 'skin disorders' the term 'spots' was added.

Additional questions concerning the length of cycle and use of oral contraceptives were incorporated into the 'female version' of the questionnaire. For the reasons given, a number of changes were made to the MDQ. I feel that I should add that, apart from considerably easing administration, intelligibility and scoring of the questionnaire, I am unable to gauge the extent to which the validity and reliability of the MDQ has been affected by these changes.

Both the original MDQ and the revised version are in the Appendix 2.

The Eysenck Personality Questionnaire

The Eysenck Personality Questionnaire (EPQ) asks the subject for their occupation, age and sex. This is a 90 item measure of Psychoticism, Extroversion and Neuroticism. The questionnaire also contains a Lie scale to measure dissimulation. The subject responds to each question by circling a 'yes' or a 'no'. The questionnaire is scored using scoring keys.
The Eysenck Personality Questionnaire is in the Appendix 2.

Procedure 3:3

At an initial meeting subjects were told that the study concerned mood change. They were asked to fill in a Menstrual Distress Questionnaire (MDQ) together with an Eysenck Personality Questionnaire (EPQ).

Testing sessions for all subjects took place at the same time, namely the first 4 Friday afternoons in March 1980. Questionnaires were completed during a class when all subjects were likely to be present. Thus all subjects completed the questionnaires at approxiamately the same time relative to the completion of the cycle under study.

Questionnaires were labelled alphabetically for the females and numerically for the males. Each subject was asked to take note of their symbol for use on subsequent questionnaires. In this way subjects were assured of confidentiality.

Each female's menstrual period was determined from the Menstrual Distress Questionnaires. It is fairly generally agreed that irrespective of the total length of the cycle, the corpus luteum has a life that varies between 10 and 16 days. This means that ovulation bears a fairly constant relation to the ensuing menstrual period. If a research methodology based upon this established relationship is adopted the variable time span between the commencement of menstruation and ovulation becomes less of a problem. For the purposes of comparison a double analysis was carried out.

For the first analysis the week prior to the onset of flow was designated as premenstrual days. One week following the reported menstrual period constituted the post menstrual phase. All days coming after the post menstrual phase formed the intermenstruum.

For the second analysis menstrual cycle data was divided as follows:-

Days 1-4 Menstruation (low oestrogen, no progesterone).
Days 5-8 Post-menstruation (rising oestrogen, no progesterone).
Days 9-12 Pre-ovulation (high oestrogen, no progesterone).
Days 13-16 Ovulation (falling oestrogen, peak FSH and LH).
Days 17-20 Post-ovulation (rising oestrogen, and progesterone).
Days 21-24 Early Premenstruum (high oestrogen, and progesterone).
Days 25-28 Late Premenstruum (falling oestrogen and progesterone).

For the purposes of analysis the males were assigned 'cycles' so that their responses could be compared to those of the women during different phases.

Table 1 shows the symptom scale groups of the MDQ. Table 2 shows means ans standard deviations for each of the 6 MDQ scales utilized in this study for males and females over 4 phases of the cycle. Tables 2a and 2b show means and standard deviations for the same MDQ scales when the menstrual cycle data is divided into 7 phases.

Table 3 gives means and standard deviations for the psychoticism, neuroticism, extroversion and lie scales of the EPQ across the four week study period, separately for males and females.

Graphic representation of the group means for both questionnaires are shown in Figs a1 and b1. Figs a2 and b2

show the data across 7 phases.

Premenstrual and menstrual means on the MDQ differed significantly from the post-menstrual and inter-menstrual means for the negative affect scale only for the males and females. The males rating of symptoms were consistently higher than those of the females' throughout the 'cycle'. The changes they reported over the course of 4 weeks were similar to the females' ratings except for the water retention scale where the females scored significantly higher, particularly in the premenstrual and menstrual phases. Comparison of males and females over symptom scales on the MDQ for 4 phases are graphically represented in Figs c - g. Comparison for 7 phases is shown from Figs c2 - g2.

The obtained symptom scale scores for the females and males were comparable to Moos' (1968) sample except on the pain, water retention and negative affect scales, where the scores obtained in this study were consistently lower than the scores recorded by Moos. This would be expected as Moo's subjects were older and many had had children, whereas the current sample was composed of young, single people. It is believed that age and parity affect the severity of menstrual distress (Bickers and Woods, 1951; Coppen and Kessel, 1963; Dalton, 1969; Rouse, 1978).

Statistical comparisons revealed that the premenstrual and menstrual means on all the four EPQ scales did not differ significantly from the post-menstrual and intermenstrual means. This also applies to the males tested over the four week period. It is interesting to compare the pattern of means for P.E.N. and L on the EPQ over the study period. There is no statistical difference and no evidence of a serial effect. Yet they do change, albeit in a small way. This is illustrated in Figs h - k.

The mean Psychoticism and Neuroticism score for the males, in this study, is higher than Eysenck's published norms, but the Extroversion and Lie scores are lower. For the females the Psychoticism score is considerably higher than Eysenck's norms, whilst the Neuroticism and Lie scores are slightly lower. But when one uses an average of multiple observations, the influence of the individual subject is substantially reduced.

The data were subjected to an analysis of variance for all variables for repeated measures with the independent variables being the two samples - males and females - and four phases of the cycle, (premenstrual, menstrual, post-menstrual and inter-

menstrual). Summaries of these analyses are presented in Tables 4 and 5.

Examination of the means on the 6 MDQ scales utilized in this study reveal them to be small and suggest some difficulty with the use of such a mean difference procedure to determine the impact of the menstrual cycle on the experiences of women. Inspection of the means on the MDQ scales for 7 phases showed them to be similar and small also. By using Form T of the MDQ in this fashion and summing phase scores across female subjects the impact of cycle phase may be lost, if the pattern of mood variability between phases is not the same across the sample. Comparison of means across phases for individual subjects provides some indication of phase related differences. Because of individual differences, the impact of a phase is not uniform. Thus, overall group differences are small when phase means for the group are compared. In fact, the phase means for the males show stronger demarcations. However, there seems to be strong support for phase related variability in most women and perhaps a 'time' related period in some men with considerable individual differences between subjects in the nature of their reaction patterns.

Examination of the complete data available on subjects revealed considerable variability in intensity as well as patterning of menstraally related fluctuations across men and women. A small number of subjects revealed virtually no detectable relationship between the menstrual cycle and their behaviour and/or mood; and a correspondingly small number of subjects displayed intense reaction patterns. Maitland-Schilling (1980) employed procedures which involved comparison of phase means in a manner similar to the procedure employed in this study. She did not find differences in affective states between menstrual cycle phases.

The significant A (P E N L) mean square (Table 5) indicates that the means for the Psychoticism, Extroversion, Neuroticism and Lie scores averaged over the levels of B (individual differences variable) and C (sex difference) differ significantly. The significant A C interaction shows that the difference between P E N and L is not independent of individual differences, or equivalently, that the difference between males and females is not independent of the EPQ scales. The nature of this interaction is illustrated in Fig h.

The Menstrual Distress Questionnaire underwent correlational analysis to examine the reliability of the items over the four week period of time. All items yielded reliability coefficients equal to or greater than .60 and the average coefficient based on a Z - score transformation was .76.

Table 6 shows the correlation coefficients for the EPQ are high and significant, beyond the 0.01 level except for Neuroticism and Lie scales for the males which were considerably lower than all the others.

The symptom scale scores for the MDQ were intercorrelated firstly across 4 cycle phases for each scale , e.g. scores on the pain scale in the premenstrual (1) phase were correlated with their scores on the pain scale in the menstrual (2) post-menstrual (3) and intermenstrual (4) phases. The resulting correlations for all scales are shown in Table 7. Secondly, the symptom scale scores for the MDQ were intercorrelated across 7 cycle phases for each scale as follows: Menstruum (1) post-menstruum (2) preovulatory (3) ovulatory (4) post-ovulatory (5) early premenstruum (6) and late premenstruum (7). The resulting correlations for all scales are shown in Tables 7(i) and 7(ii).

Correlations, in general, are low between scores in the 4 and the 7 phases, i.e. if a person is high on a scale in the premenstruum, they will not necessarily score high on that scale during any of the other phases. This finding indicates that individuals who complain of premenstrual and menstrual symptoms will not necessarily complain during the post-menstruum and intermenstruum. This finding is in direct contradiction to the discoveries of Moos (1968). He, however, used a one-off set of scores obtained with Form A of the MDQ.

Since the MDQ was developed to provide indices of menstrual symptomatology, the range of subjects' scores on MDQ scales across cycle phases would be expected to reflect this intent. The sample employed in the current research evidenced a limited range of symptom intensity scores for all scales. It was not unusual for subjects to report the total absence of any menstrual symptomatology. Since correlational statistics require an assumption of normal score distributions (McNemar, 1969) it should be noted that the distributions for several MDQ scales were somewhat skewed because subjects often reported 'no

experience of symptoms' in question. Skew was greatest for pain, behaviour change and water retention.

Consistency reliabilities are an indication of the degree to which the questions in the scale cover a given area. Such reliabilities should not be too low (if they are, clearly the scale is too heterogenous to measure any concept satisfactorily), but it would also be a mistake to look for high values. If the reliabilities are very high, this suggests that the area covered is too restricted.

Table 7a gives alpha coefficients for males and females separately. The coefficients observed are adequate and the scale labels reflect the major content of the symptoms as closely as possible.

Table 8 shows second-order partial correlations (McNemar, 1969) between Epq scales and the MDQ weekly scores for each symptom scale. Those marked * are significant at the 5% level, † denotes significance at the 1% level.

The pattern of correlations in Table 8 indicates that personality variables were most consistently related to symptoms in the areas of behaviour change, autonomic reactions, water retention and negative affect. For the males autonomic reactions, behaviour change, and water retention were associated, for the most part, with EPQ variables when these occurred in the "post-menstrual" and "intermenstrual" phases of the "cycle". However, psychoticism and extroversion are related to water retention in the "menstrual" phase also.

As for the females, psychoticism and extroversion were correlated with symptoms in the behaviour change and autonomic reaction scales when these occurred in the post-menstrual phase of the cycle. The extroversion, neuroticism and lie scales of the EPQ correlated with water retention and negative affect symptomatology occurring in the premenstrual phases of the cycle

TABLE 1

SYMPTOM SCALE GROUPS OF THE MENSTRUAL DISTRESS QUESTIONNAIRE

PAIN
Muscle stiffness
Headache
Cramps
Backache
Fatigue
General aches and pains

CONCENTRATION
Insomnia (sleeplessness)
Forgetfulness
Confusion
Lowered judgement
Difficulty concentrating
Easily distracted
Accident prone
More clumsy

BEHAVIOUR CHANGE
Lowered school or work performance
Take naps, stay in bed
Stay at home
Avoid social activities
Less capable

AUTONOMIC REACTIONS
Dizziness, faintness
Cold sweats
Sickness
Hot flushes

WATER RETENTION
Weight gain
Skin disorders
Painful breasts/chest
Swelling

NEGATIVE AFFECT
Crying
Loneliness
Anxiety
Restlessness
Irritability
Mood swings
Depression
Tension

AROUSAL
Affectionate
Orderliness
Excitement
Feelings of well - being
Burst of energy

CONTROL
Feelings of suffocation
Chest pains
Ringing in the ears
Heart pounding
Numbness, tingling
Blind spots, fuzzy vision

TABLE 2

MEANS AND STANDARD DEVIATIONS FOR THE PAIN, CONCENTRATION, BEHAVIOUR CHANGE, AUTONOMIC REACTIONS, WATER RETENTION AND NEGATIVE AFFECT SCALES OF THE MENSTRUAL DISTRESS QUESTIONNAIRE

MALES	PAIN	CONC	BC	AR	WR	NA
$\bar{X}$ 1	9.61	12.04	8.38	4.38	4.92	14.61
S.D.	2.12	2.94	2.83	0.20	0.30	3.92
$\bar{X}$ 2	8.85	11.26	7.00	4.23	4.61	11.31
S.D.	1.91	3.95	1.86	1.58	0.26	3.99
$\bar{X}$ 3	7.38	10.94	6.85	4.38	4.23	9.69
S.D.	1.53	4.60	1.58	0.71	1.58	1.49
$\bar{X}$ 4	6.15	9.50	5.46	4.00	4.46	8.46
S.D.	0.40	2.31	0.29	0.00	0.18	1.15

FEMALES	PAIN	CONC	BC	AR	WR	NA
$\bar{X}$ 1	7.31	10.74	6.46	4.00	5.20	12.38
S.D.	1.50	4.57	1.47	0.00	0.76	2.86
$\bar{X}$ 2	7.80	10.02	5.85	4.08	5.00	9.77
S.D.	1.47	4.25	1.23	0.28	1.00	1.83
$\bar{X}$ 3	7.15	9.87	5.61	4.00	4.61	8.46
S.D.	1.15	4.13	1.23	0.00	0.71	0.81
$\bar{X}$ 4	6.69	9.02	5.38	4.23	4.85	8.31
S.D.	1.40	2.31	0.71	1.58	0.71	1.12

Table 2 (a) Females

MEANS AND STANDARD DEVIATIONS FOR THE PAIN, CONCENTRATION, BEHAVIOUR CHANGE, AUTONOMIC REACTIONS, WATER RETENTION AND NEGATIVE AFFECT SCALES OF THE MENSTRUAL DISTRESS QUESTIONNAIRE

Phases	Pain	Conc	BC	AR	WR	NA
Mens	8.75	10.02	5.62	4.72	4.45	9.50
S.D.	1.90	2.32	0.71	0.28	0.18	1.82
Postmens	7.14	9.50	5.57	4.00	5.14	10.28
S.D.	1.84	2.84	1.03	0.00	0.76	2.17
Pre-O	8.00	9.83	6.25	4.00	4.62	8.50
S.D.	1.32	2.56	1.53	0.00	1.58	1.15
Ovulation	8.00	8.25	5.42	4.28	4.28	8.57
S.D.	1.04	1.58	1.47	0.37	0.18	1.08
Post-O	7.00	8.14	5.44	4.00	4.00	8.77
S.D.	0.18	2.62	3.19	0.00	0.00	1.34
Early-Prem	6.80	8.00	6.00	4.40	5.20	10.20
S.D.	0.30	0.00	0.26	0.60	1.36	2.94
Late-Prem	7.62	9.00	6.50	4.00	4.87	10.87
S.D.	1.12	3.96	2.71	0.00	1.48	3.46

Table 2 (b) Males

MEANS AND STANDARD DEVIATIONS FOR THE PAIN, CONCENTRATION, BEHAVIOUR CHANGE, AUTONOMIC REACTIONS, WATER RETENTION AND NEGATIVE AFFECT SCALES OF THE MENSTRUAL DISTRESS QUESTIONNAIRE

Phases	Pain	Conc	BC	AR	WR	NA
Mens	8.95	11.29	8.40	4.40	4.24	14.70
S.D.	1.96	3.98	2.85	0.22	1.21	3.97
Postmens	7.39	10.90	7.00	4.26	4.30	11.80
S.D.	1.59	4.56	1.86	0.61	1.28	3.34
Pre-O	6.50	9.98	6.85	4.48	4.00	9.00
S.D.	1.48	2.56	1.58	1.12	0.00	1.16
Ovulation	6.15	9.50	6.00	4.00	4.14	10.19
S.D.	0.40	2.31	1.20	0.00	0.29	2.06
Post-O	7.20	8.00	5.49	4.12	4.00	9.24
S.D.	0.68	0.00	0.32	0.24	0.00	1.18
Early-Prem	9.25	10.09	6.50	4.81	4.68	8.52
S.D.	2.02	3.42	1.51	0.82	0.32	1.30
Late-Prem	9.65	12.08	9.72	5.00	4.90	15.48
S.D.	2.46	2.98	3.18	1.00	0.42	4.15

TABLE 3

MEANS AND STANDARD DEVIATIONS FOR THE P, E, N AND L SCALES OF THE EYSENCK PERSONALITY QUESTIONNAIRE

MALES

WEEK	P	E	N	L
X 1	6.91	10.72	14.00	4.27
S.D.	4.05	6.07	6.29	4.02
X 2	5.80	11.18	12.91	4.91
S.D.	3.55	6.26	6.21	4.84
X 3	5.00	11.36	12.00	4.18
S.D.	3.28	5.79	6.32	3.76
X 4	6.45	10.18	12.82	3.09
S.D.	3.42	5.24	6.39	2.60

FEMALES

WEEK	P	E	N	L
X 1	5.54	13.64	10.73	6.73
S.D.	2.83	6.08	7.33	3.57
X 2	4.45	14.09	10.45	5.09
S.D.	2.59	6.29	7.33	3.51
X 3	3.91	13.64	9.54	5.45
S.D.	2.72	6.28	6.71	4.36
X 4	3.36	13.73	9.45	4.73
S.D.	2.79	6.36	6.78	3.81

TABLE 5

Summary of Analysis of Variance for EPQ Variables

Source	SS	DF	MS	F	Significance
EPQ (A)	4254	3	1418	80.24	$p < 0.05$
Subject (B)	64	3	21.33	1.21	ns
Males v Females	0	1	0	0	ns
A × B	53	9	5.88	0.33	ns
A × C	476	3	158.6	8.98	$p < 0.05$
B × C	4	3	1.33	0.07	ns
A × B × C	16	9	1.77	0.10	ns
Within	5657	320	17.67		

TABLE 4

Summary of Analysis of Variance for MDQ Variables

Source	SS	DF	MS	F	Significance
MDQ (A)	2569	4	642.25	314.80	$p < 0.005$
Phase (B)	271	3	90.33	44.28	$p < 0.005$
Males v Females	43	1	43	21.08	$p < 0.005$
A × B	253	12	21.08	10.33	$p < 0.005$
A × C	50	4	12.50	6.13	$p < 0.005$
B × C	37	3	12.33	6.04	$p < 0.005$
A × B × C	15	12	1.25	0.16	ns
Within	981	480	2.04		

TABLE 6

CORRELATION COEFFICIENTS FOR EPQ SCALES OVER 4 WEEK PERIOD

MALES $n = 13$

WEEK	P	E	N	L
1 X 2	0.985	0.961	0.829	0.885
1 X 3	0.985	0.970	0.831	0.838
1 X 4	0.708	0.540	0.062	-0.268
2 X 3	0.995	0.925	0.948	0.931
2 X 4	0.773	0.558	0.205	0.010
3 X 4	0.807	0.564	0.195	0.034
	5.253	4.518	3.070	2.430
$\bar{X}$	0.875	0.753	0.512	0.405

FEMALES

WEEK	P	E	N	L
1 X 2	0.896	0.851	0.958	0.813
1 X 3	0.859	0.895	0.964	0.843
1 X 4	0.685	0.919	0.857	0.802
2 X 3	0.848	0.949	0.979	0.936
2 X 4	0.718	0.985	0.882	0.955
3 X 4	0.804	0.975	0.851	0.942
	4.810	5.574	5.491	5.291
$\bar{X}$	0.800	0.929	0.915	0.882

TABLE 7

CORRELATION COEFFICIENTS FOR MDQ SCALES OVER 4 WEEK PERIOD

MALES — n = 13

WEEK	PAIN	BC	AR	WR	NA
1 X 2	0.617	0.238	-0.004	0.541	0.6194
1 X 3	0.322	0.430	1.000	-0.396	0.3064
1 X 4	-0.111	-0.355	0.616	0.197	0.0101
2 X 3	0.131	0.248	0.004	0.251	0.3775
2 X 4	-0.194	0.048	0.683	0.526	0.4042
3 X 4	0.147	0.098	0.683	-0.032	0.4361
	1.522	0.707	2.974	1.151	2.1537
X̄	0.254	0.117	0.495	0.192	0.3589

FEMALES

WEEK	PAIN	BC	AR	WR	NA
1 X 2	0.144	0.186	1.198	0.441	0.741
1 X 3	0.594	0.395	1.000	0.048	0.151
1 X 4	-0.051	-0.182	0.685	0.119	0.018
2 X 3	0.445	0.343	1.198	-0.124	0.461
2 X 4	0.193	-0.187	0.060	0.195	-0.224
3 X 4	0.172	-0.157	0.685	0.333	-0.189
	1.599	1.450	4.826	1.260	0.958
X̄	0.266	0.241	0.804	0.210	0.159

TABLE 7a

INTERNAL CONSISTENCY RELIABILITY MENSTRUAL DISTRESS QUESTIONNAIRE

	MALES	FEMALES
PAIN	.88	.76
CONCENTRATION	.79	.68
BEHAVIOUR CHANGE	.72	.80
AUTONOMIC REACTIONS	.74	.81
WATER RETENTION	.82	.70
NEGATIVE AFFECT	.69	.73
AROUSAL	-	-
CONTROL	-	-

Table 7 (1)

CORRELATION COEFFICIENTS FOR MDQ SCALES OVER ONE MENSTRUAL CYCLE

Females

Phase	Pain	Conc	BC	AR	WR	NA
1×2	0.15	0.23	0.18	1.19	0.48	0.68
1×3	0.42	-0.11	0.32	0.68	0.32	0.15
1×4	0.44	0.15	-0.12	0.70	0.04	0.46
1×5	-0.05	0.27	0.34	0.51	0.17	-0.22
1×6	0.19	0.10	0.21	0.48	-0.21	-0.01
1×7	0.11	0.36	0.25	0.45	0.36	0.29
2×3	0.32	0.49	-0.16	0.66	0.44	0.74
2×4	0.24	0.13	0.39	0.62	0.13	0.53
2×5	0.29	0.18	0.27	0.68	0.22	0.24
2×6	0.18	0.26	0.14	0.50	0.33	0.11
2×7	0.03	-0.15	0.09	0.31	0.20	0.17
3×4	0.41	0.52	0.40	0.64	0.11	0.31
3×5	0.26	0.33	-0.19	0.54	0.16	-0.20
3×6	0.36	0.04	0.33	0.09	0.29	0.46
3×7	0.11	0.17	0.21	0.55	0.25	0.39
4×5	0.45	0.39	0.23	0.71	0.07	0.16
4×6	0.14	0.41	0.36	0.85	0.19	0.08
4×7	0.35	0.46	0.07	0.53	-0.10	0.18
5×6	0.37	0.58	0.29	0.69	0.50	0.24
5×7	0.48	0.39	0.18	0.80	0.46	0.28
6×7	0.40	0.57	0.37	0.78	0.39	0.38
	5.65	5.77	4.16	12.96	4.80	5.42
$\bar{x}$	0.27	0.28	0.19	0.62	0.23	0.26

Table 7 (2)

CORRELATION COEFFICIENTS FOR MDQ SCALES OVER ONE MENSTRUAL CYCLE

Males

Phase	Pain	Conc	BC	AR	WR	MA
1×2	0.62	0.53	0.28	1.00	0.54	0.82
1×3	0.46	0.21	0.48	0.34	0.32	0.44
1×4	-0.12	0.15	-0.30	0.56	0.28	0.37
1×5	0.13	-0.27	0.18	0.23	0.11	0.16
1×6	0.20	0.38	0.27	-0.06	0.05	0.17
1×7	0.36	0.27	0.21	0.18	0.18	0.52
2×3	0.43	0.42	0.43	0.62	0.63	0.68
2×4	-0.18	0.39	0.16	0.29	0.47	0.42
2×5	0.26	0.06	0.09	0.21	0.31	0.22
2×6	0.11	0.18	0.21	0.46	-0.47	0.03
2×7	0.17	-0.08	0.13	0.35	0.06	0.06
3×4	0.24	0.67	0.25	0.20	0.29	0.31
3×5	0.10	0.31	0.10	-0.14	0.14	0.55
3×6	0.22	0.29	0.04	0.17	0.01	0.49
3×7	0.31	0.12	0.12	0.28	0.16	0.08
4×5	0.42	0.03	0.33	0.68	0.25	0.38
4×6	0.19	-0.31	0.02	-0.28	0.04	0.26
4×7	-0.15	0.14	0.14	0.37	0.19	0.14
5×6	0.59	0.56	-0.07	0.71	0.43	0.46
5×7	0.27	0.36	0.28	0.52	0.12	0.72
6×7	0.34	0.44	0.41	0.49	-0.32	0.78
	4.97	4.85	3.76	7.18	3.49	8.07
$\overline{x}$	0.24	0.23	0.18	0.34	0.17	0.38

TABLE 8

PARTIAL CORRELATIONS BETWEEN EPQ SCORES AND MDQ SYMPTOM SCALES OVER ONE CYCLE

MALES $n = 13$

PAIN	P	E	N	L
Premenstrual	0.065	0.311	0.046	0.615
Menstrual	0.060	0.198	0.201	0.637
Post-menstrual	0.001	-0.145	-0.045	-0.070
Intermenstrual	0.156	0.372	0.276	0.169
CONCENTRATION				
Premenstrual	0.345	0.195	0.007	0.084
Menstrual	0.216	0.246	0.041	0.124
Post-menstrual	0.061	0.004	0.034	0.003
Intermenstrual	0.020	0.012	0.124	0.042
BEHAVIOUR CHANGE				
Premenstrual	0.260	0.008	-0.024	0.333
Menstrual	0.131	-0.276	-0.087	0.299
Post-menstrual	0.104	-0.127	-0.358	-0.258
Intermenstrual	0.041	0.048	-0.244	-0.629*
AUTONOMIC REACTIONS				
Premenstrual	0.129	0.420	0.163	0.158
Menstrual	0.369	-0.098	0.393	0.019
Post-menstrual	0.353	-0.539*	-0.024	0.117
Intermenstrual	0.508*	0.503*	0.501*	0.443
WATER RETENTION				
Premenstrual	0.269	0.392	0.253	0.413
Menstrual	0.675+	0.558*	0.445	0.142
Post-menstrual	0.686+	-0.001	-0.551*	-0.393
Intermenstrual	0.587*	0.663+	0.598*	0.255
NEGATIVE AFFECT				
Premenstrual	0.278	0.395	0.226	0.396
Menstrual	0.353	-0.012	0.285	0.212
Post-menstrual	0.385	0.009	-0.068	0.075
Intermenstrual	0.174	0.126	-0.228	0.122

*significant at 5% level + significant at 1% level

TABLE 8

PARTIAL CORRELATIONS BETWEEN EPQ SCORES AND MDQ SYMPTOM SCALES OVER ONE CYCLE

FEMALES

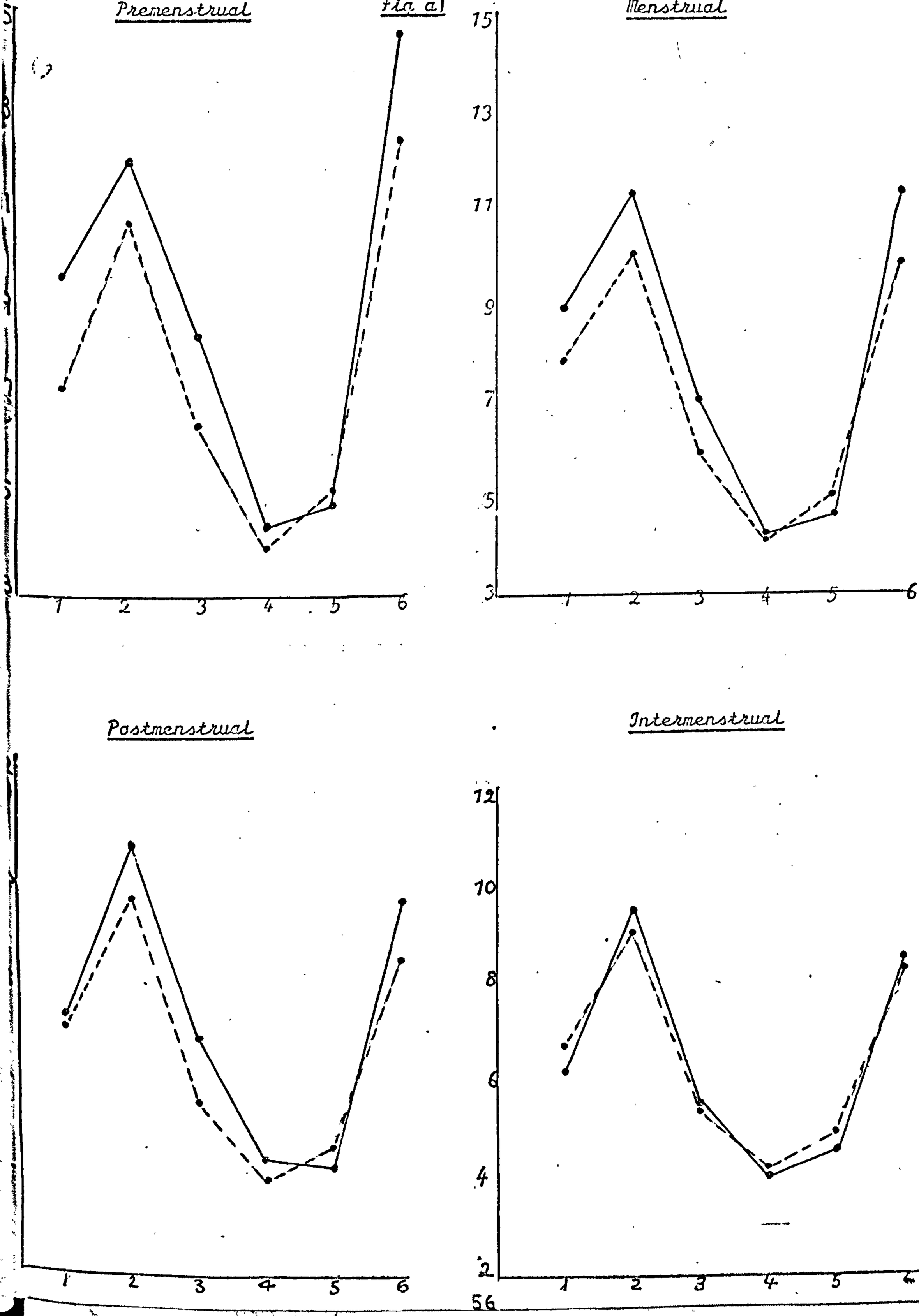
n = 13

PAIN	P	E	N	L
Premenstrual	0.007	-0.090	0.020	0.007
Menstrual	-0.067	0.303	0.224	-0.452
Post-menstrual	-0.208	-0.369	-0.048	0.128
Intermenstrual	0.324	0.296	0.069	-0.153
CONCENTRATION				
Premenstrual	0.423	0.328	0.067	0.236
Menstrual	0.080	0.014	0.018	0.039
Post-menstrual	0.006	0.007	0.009	0.057
Intermenstrual	0.214	0.271	0.146	0.026
BEHAVIOUR CHANGE				
Premenstrual	0.142	0.237	0.091	0.497
Menstrual	0.118	0.094	-0.043	-0.081
Post-menstrual	0.557*	-0.049	-0.176	0.030
Intermenstrual	0.048	0.298	0.325	-0.046
AUTONOMIC REACTIONS				
Premenstrual	0.000	0.008	0.262	0.000
Menstrual	0.320	0.113	-0.095	-0.105
Post-menstrual	0.476	0.503*	0.499	0.492
Intermenstrual	0.348	0.489	0.269	0.149
WATER RETENTION				
Premenstrual	0.403	0.610*	0.184	0.106
Menstrual	0.027	0.064	0.085	-0.160
Post-menstrual	0.050	-0.353	-0.512	-0.071
Intermenstrual	0.317	0.076	-0.396	-0.015
NEGATIVE AFFECT				
Premenstrual	0.394	0.112	0.724+	0.660+
Menstrual	0.141	0.224	0.550*	0.159
Post-menstrual	0.307	0.026	0.163	-0.012
Intermenstrual	0.157	-0.348	0.077	0.303

*significant at 5% level + significant at 1% level

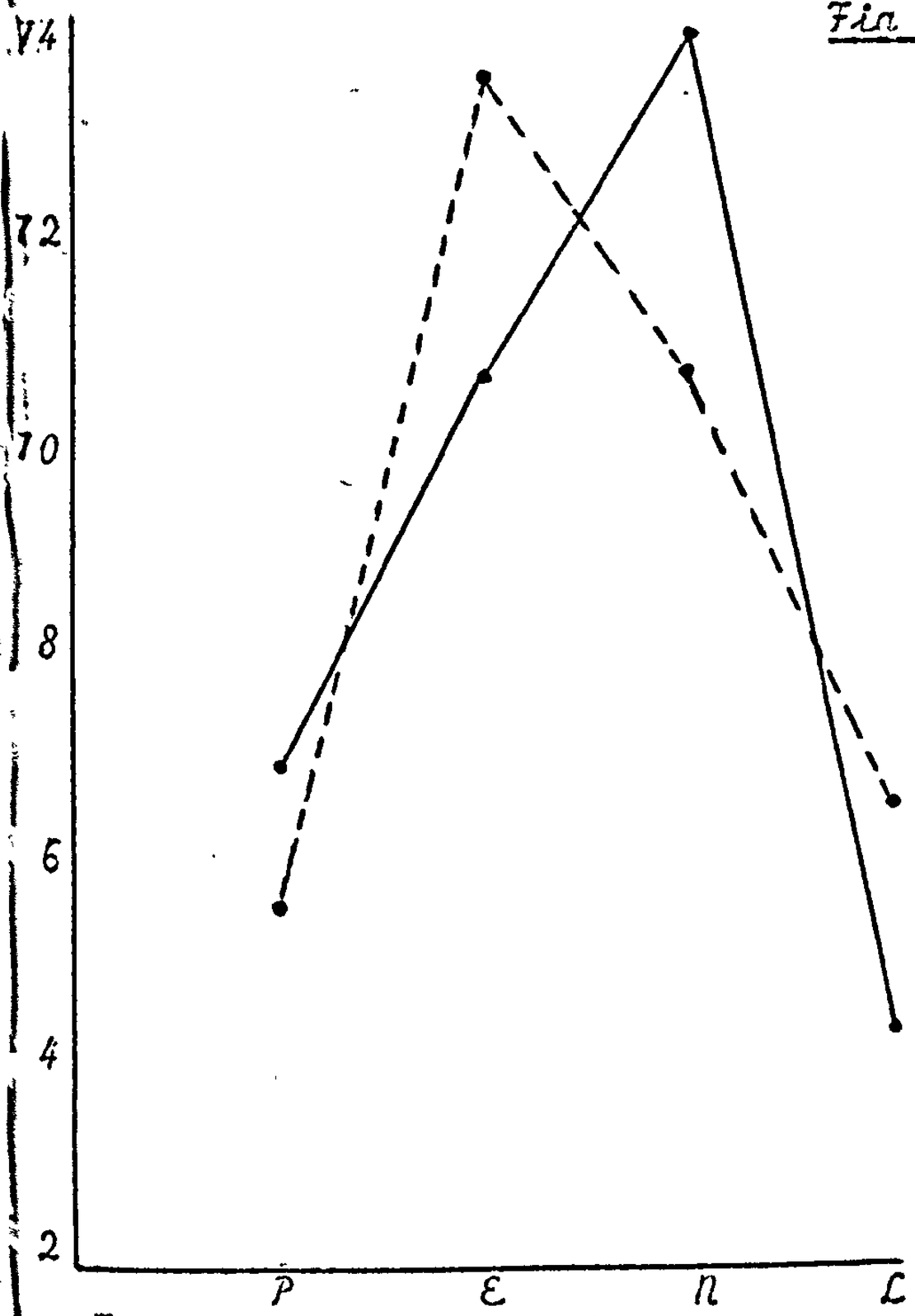
Means for the six scales of the Menstrual Distress Questionnaire for Males (——) and Females (---) for the Premenstruum, Menstruum, Postmenstrual and Intermenstrual Phases.

Fig a1

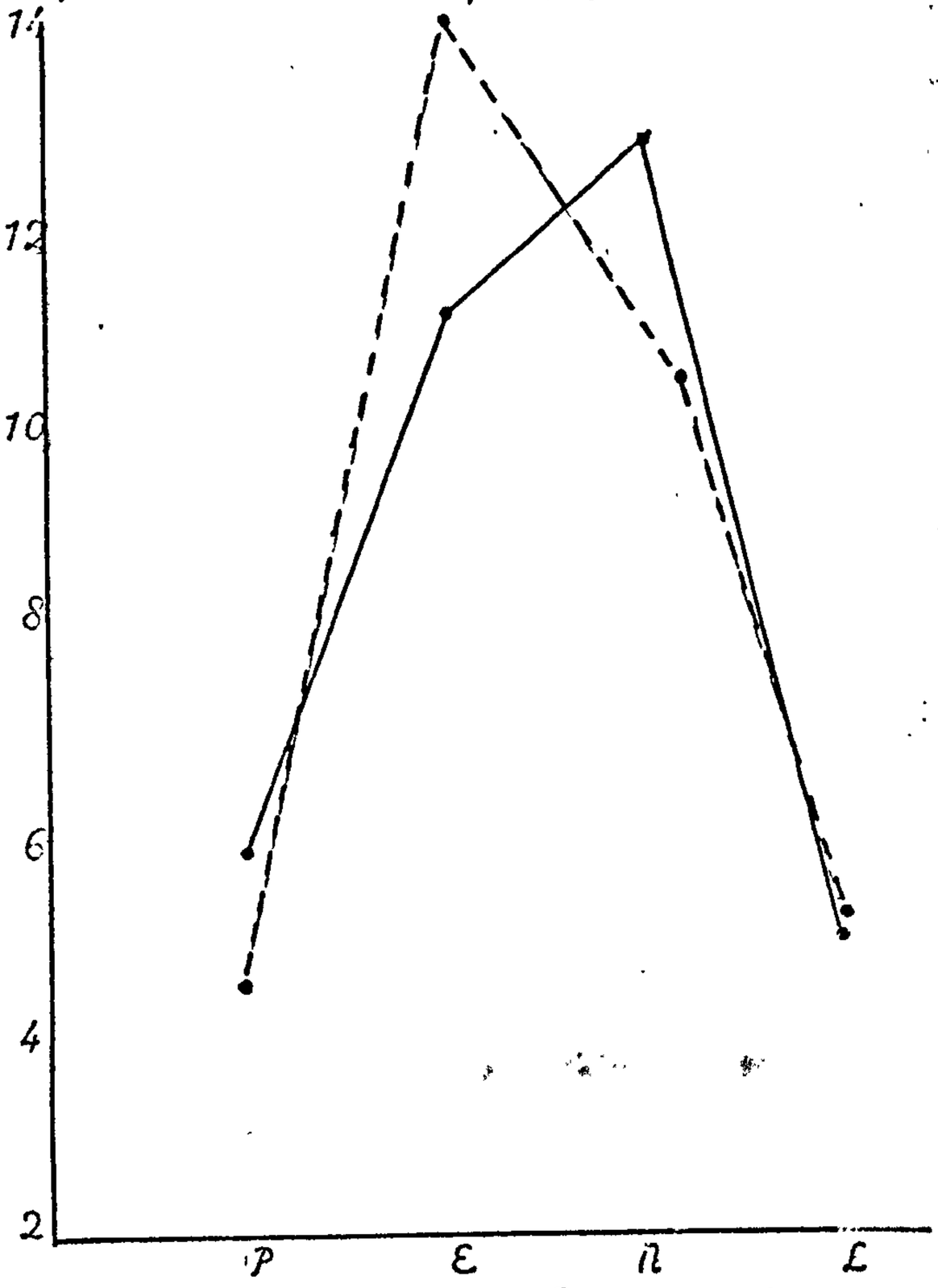


Means for Psychotism, Extroversion Neurotism and Lie Scales for Males (——) and Females (---) on the Premenstrual Phase.

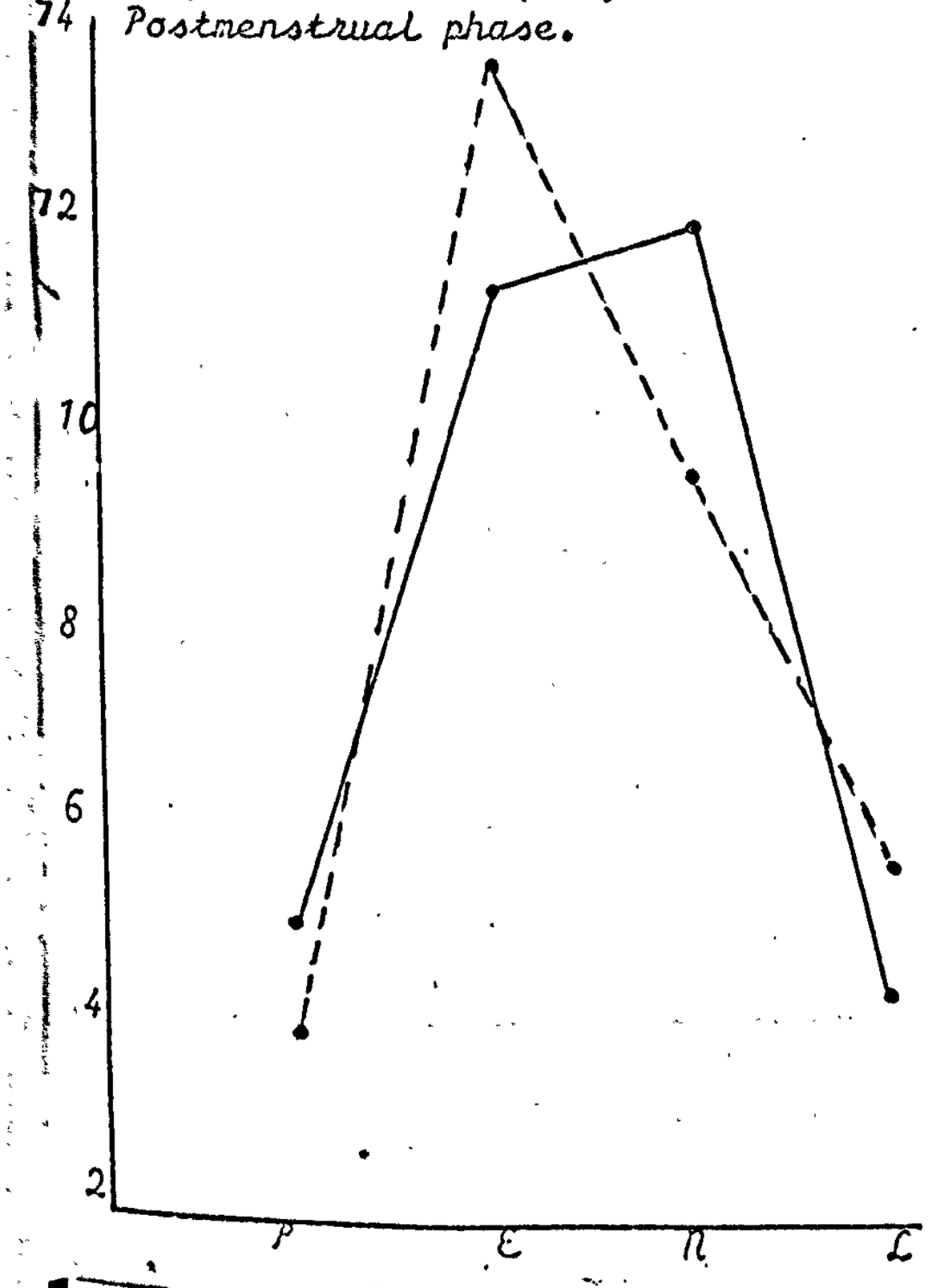
Fig 61



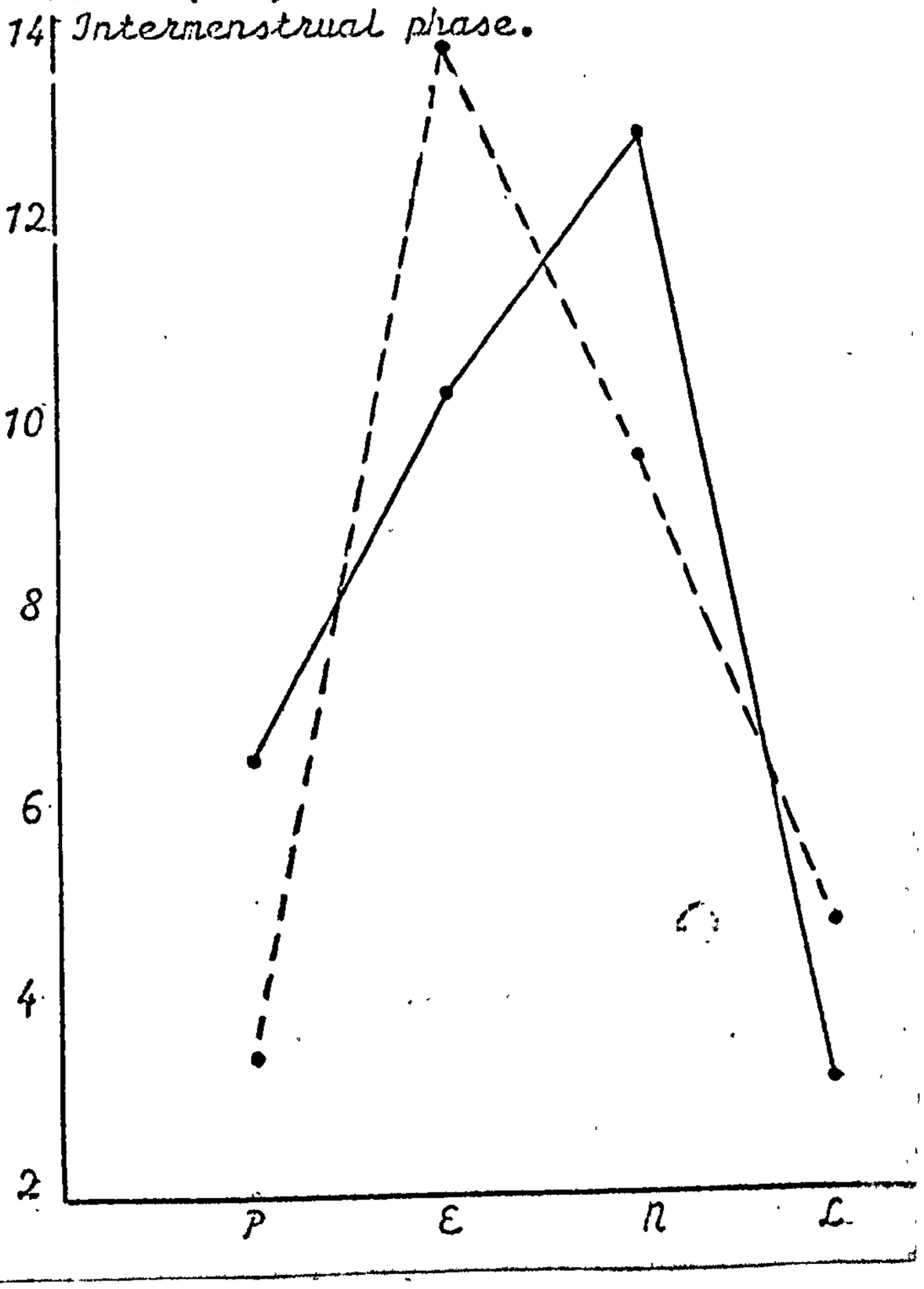
Means for Psychotism, Extroversion, Neurotism and Lie Scales for Males (——) and Females (----) for the Menstrual phase.



Means for Psychotism, Extroversion, Neurotism and Lie Scales for Males (——) and Females (---) on the Postmenstrual phase.



Means for Psychotism, Extroversion, Neurotism and Lie Scales for the Males (——) and Females (---) on the Intermenstrual phase.



Comparison of Males and Females over symptom scales of the Menstrual Distress Questionnaire.

Fig c

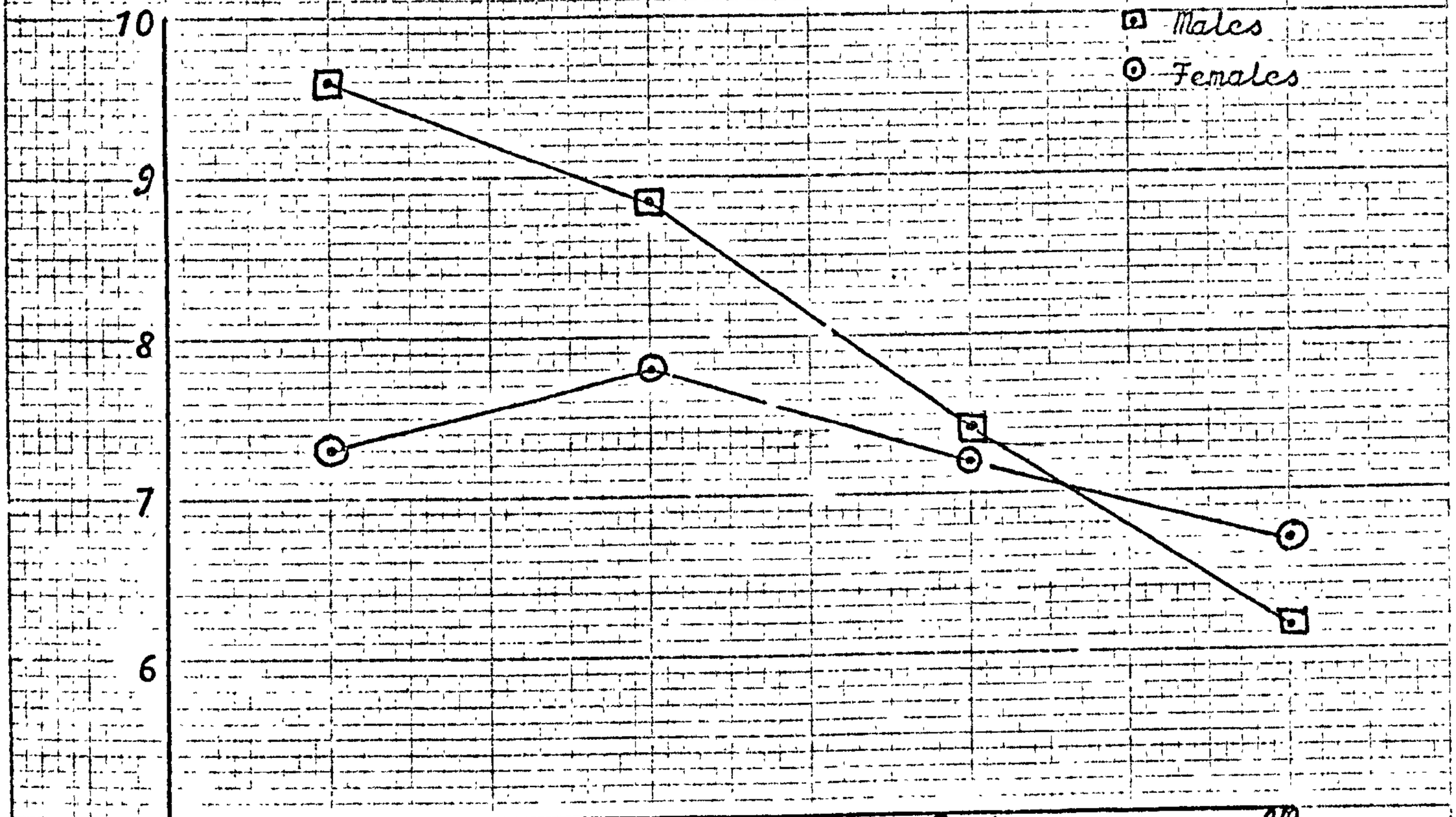


Fig d

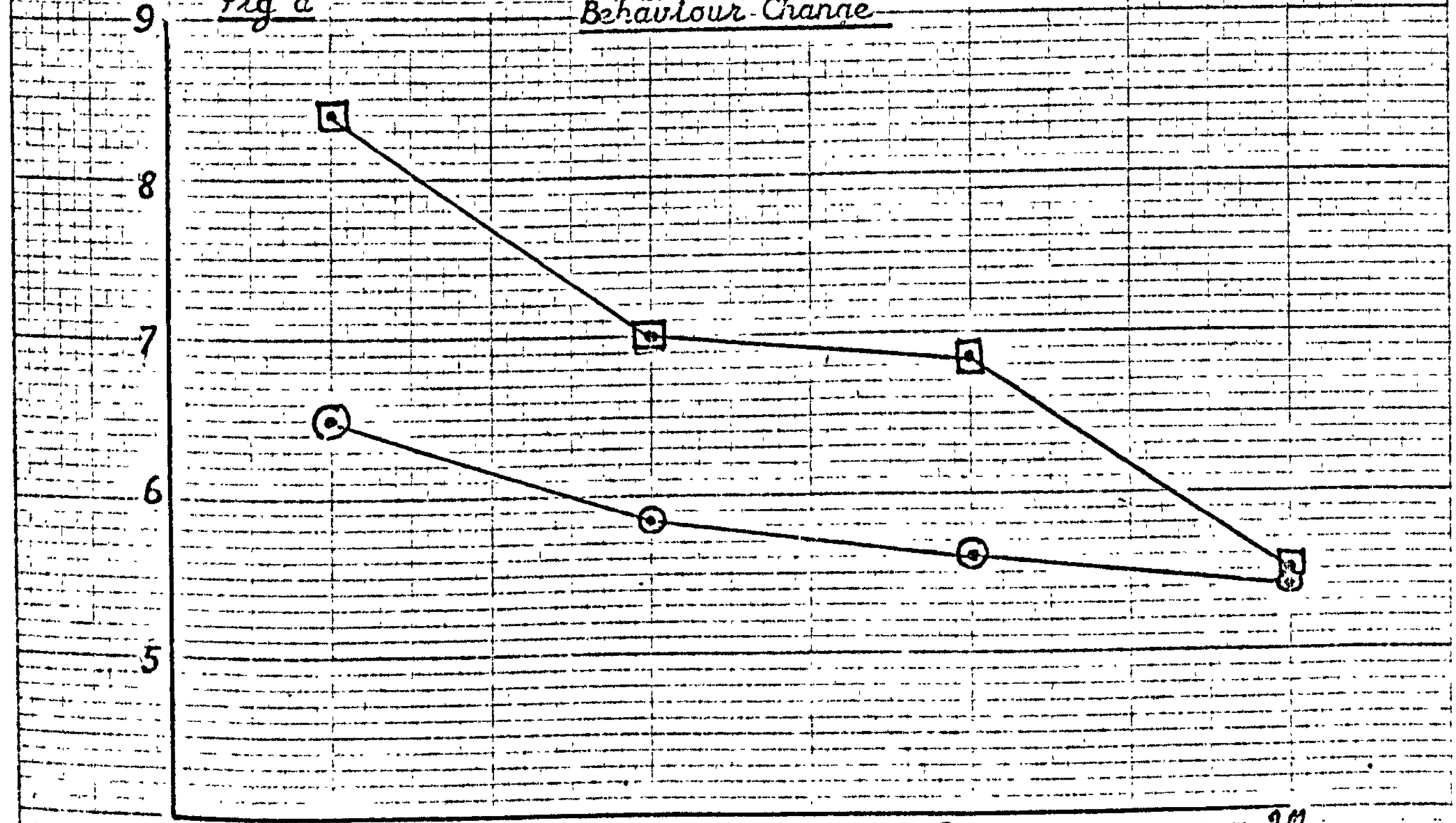


Fig e

Autonomic Reactions

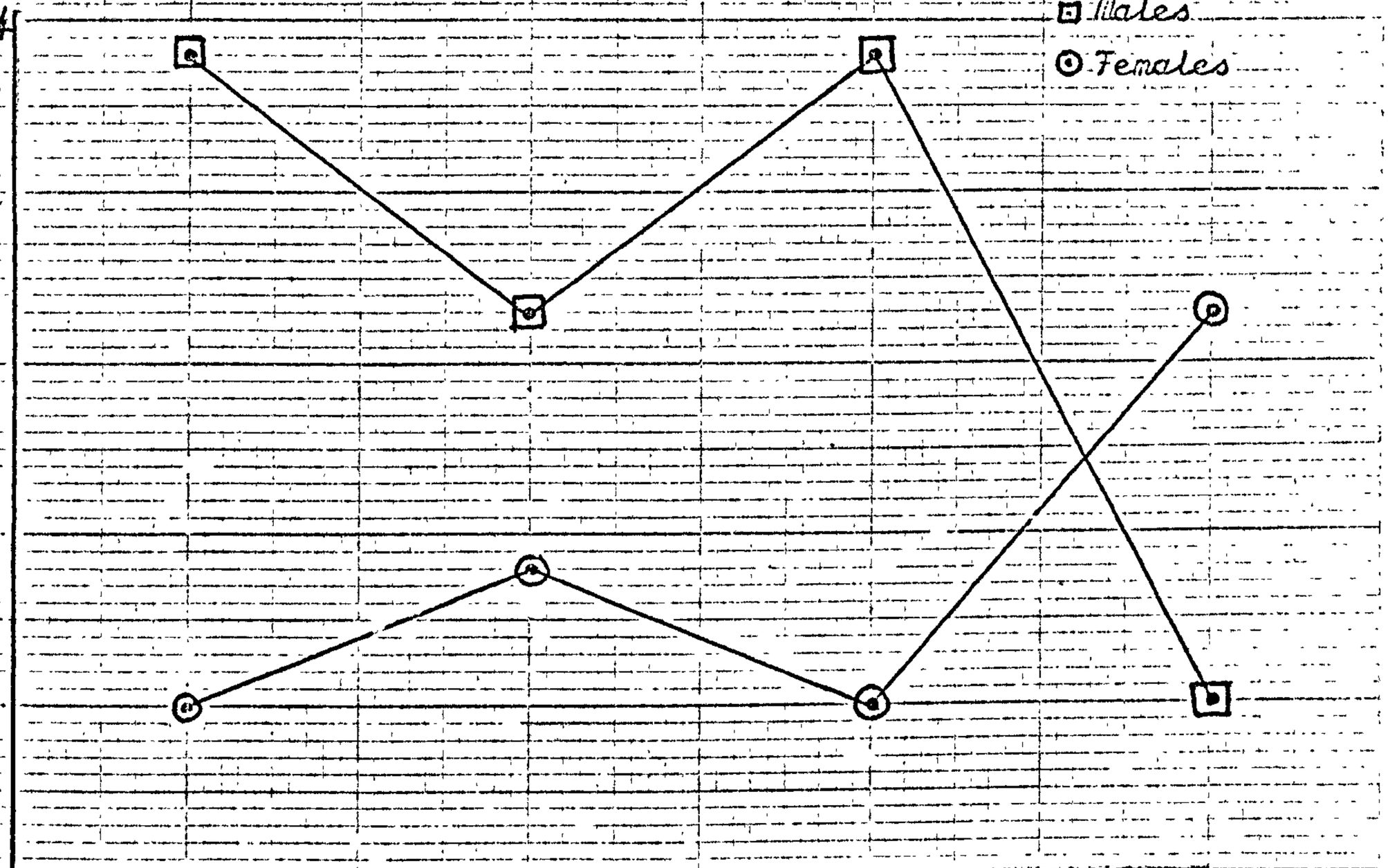


Fig f

Water Retention

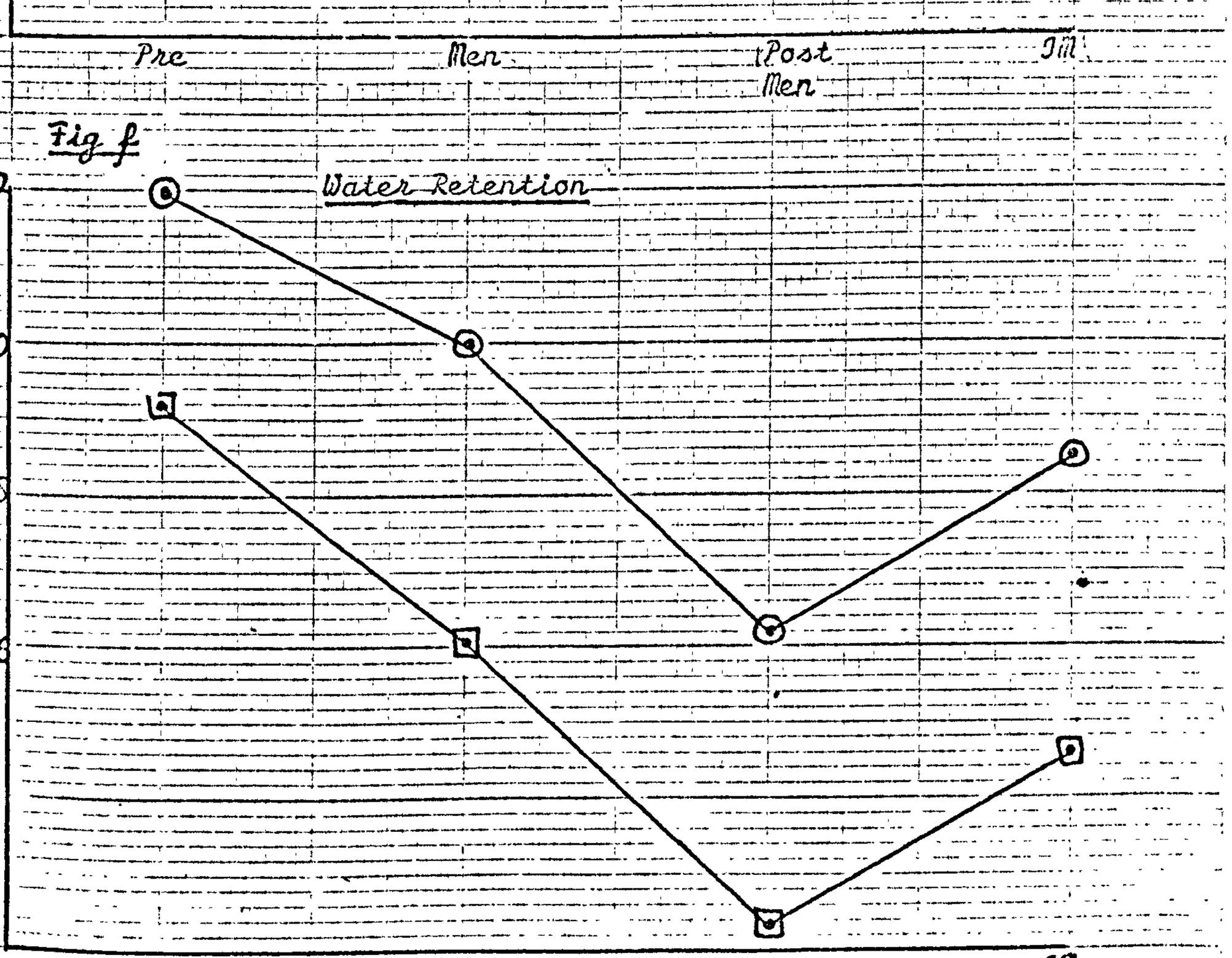
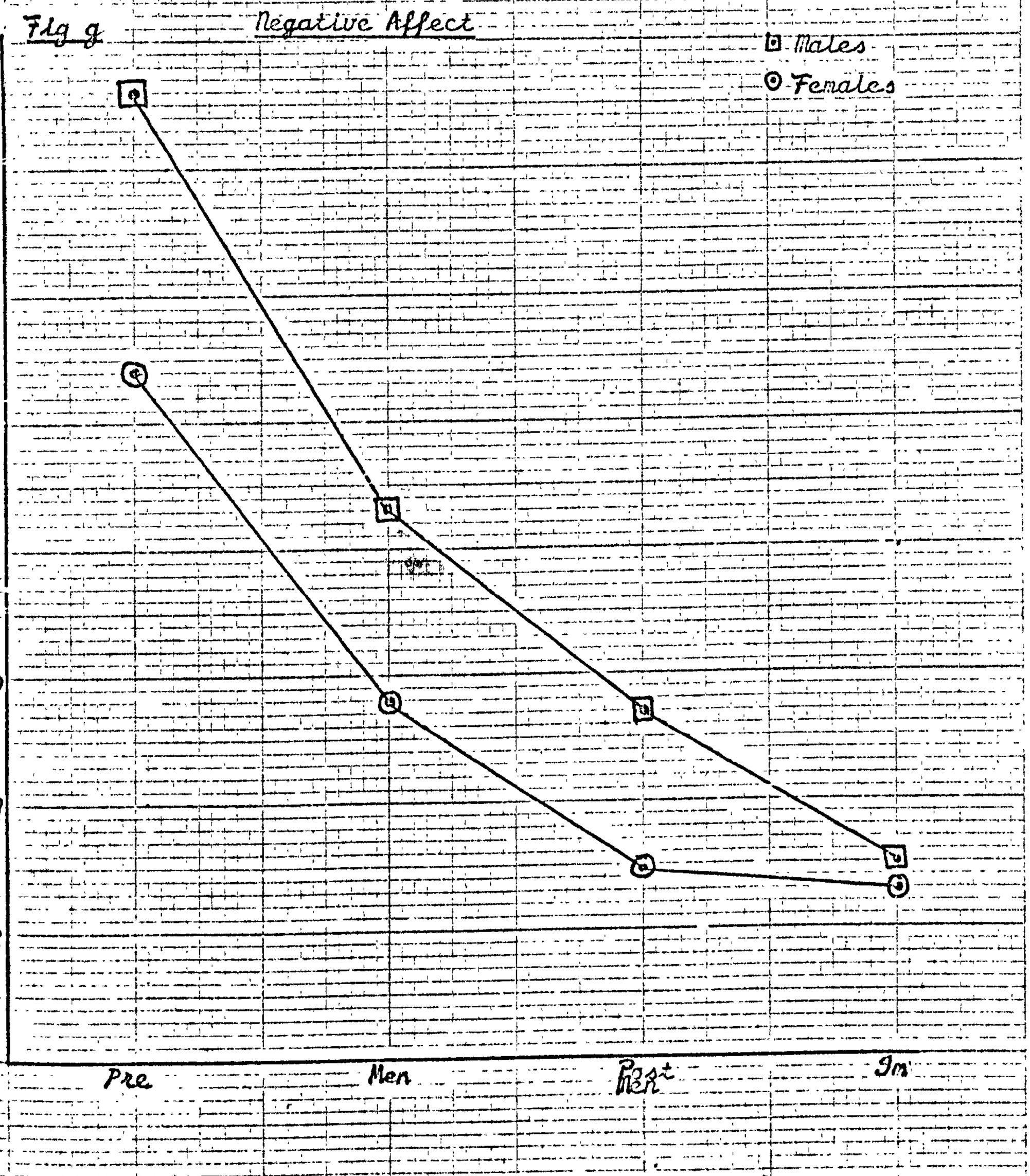


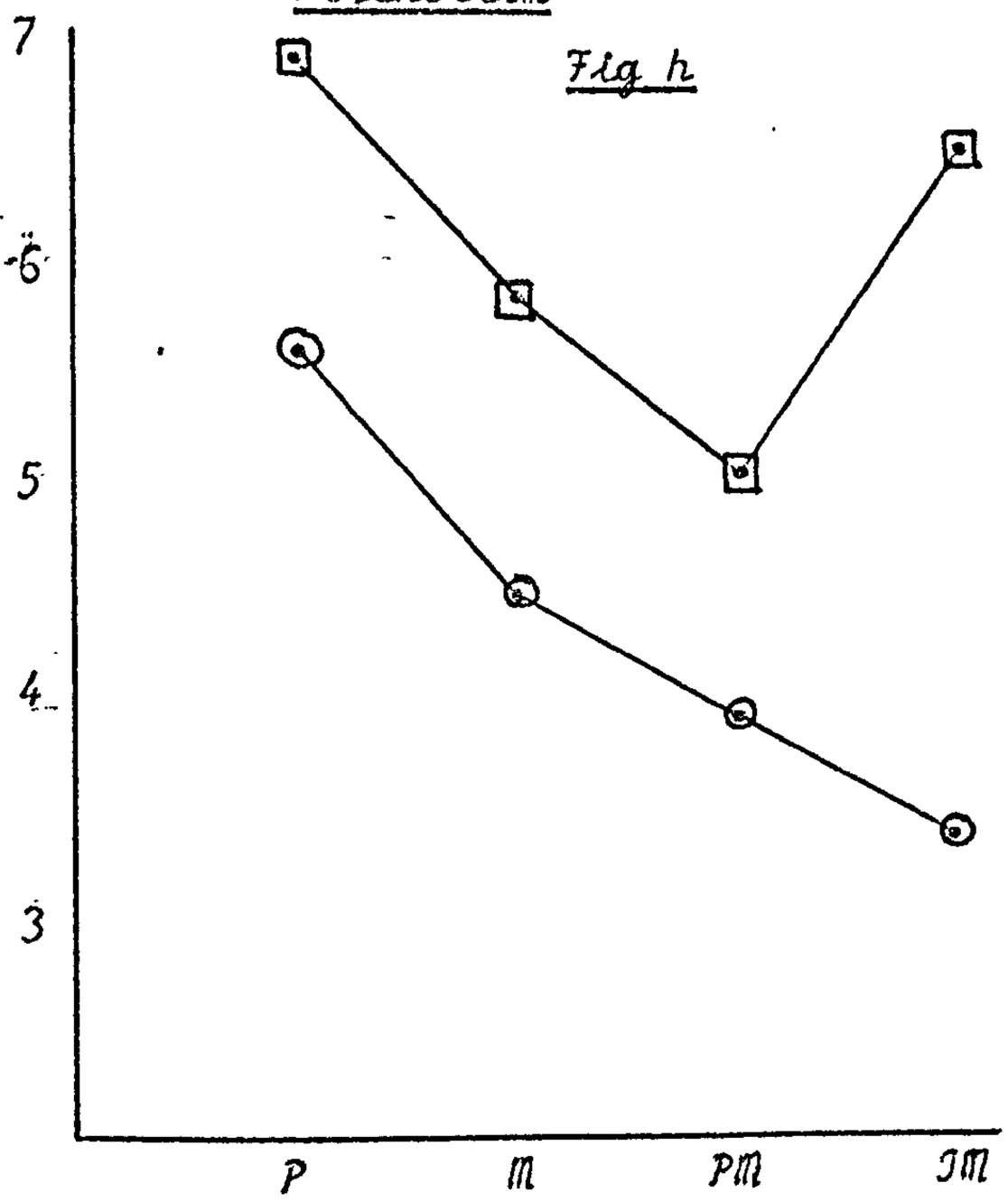
Fig g — Negative Affect



P.E.N.L. Means for Males and Females over a four week period.

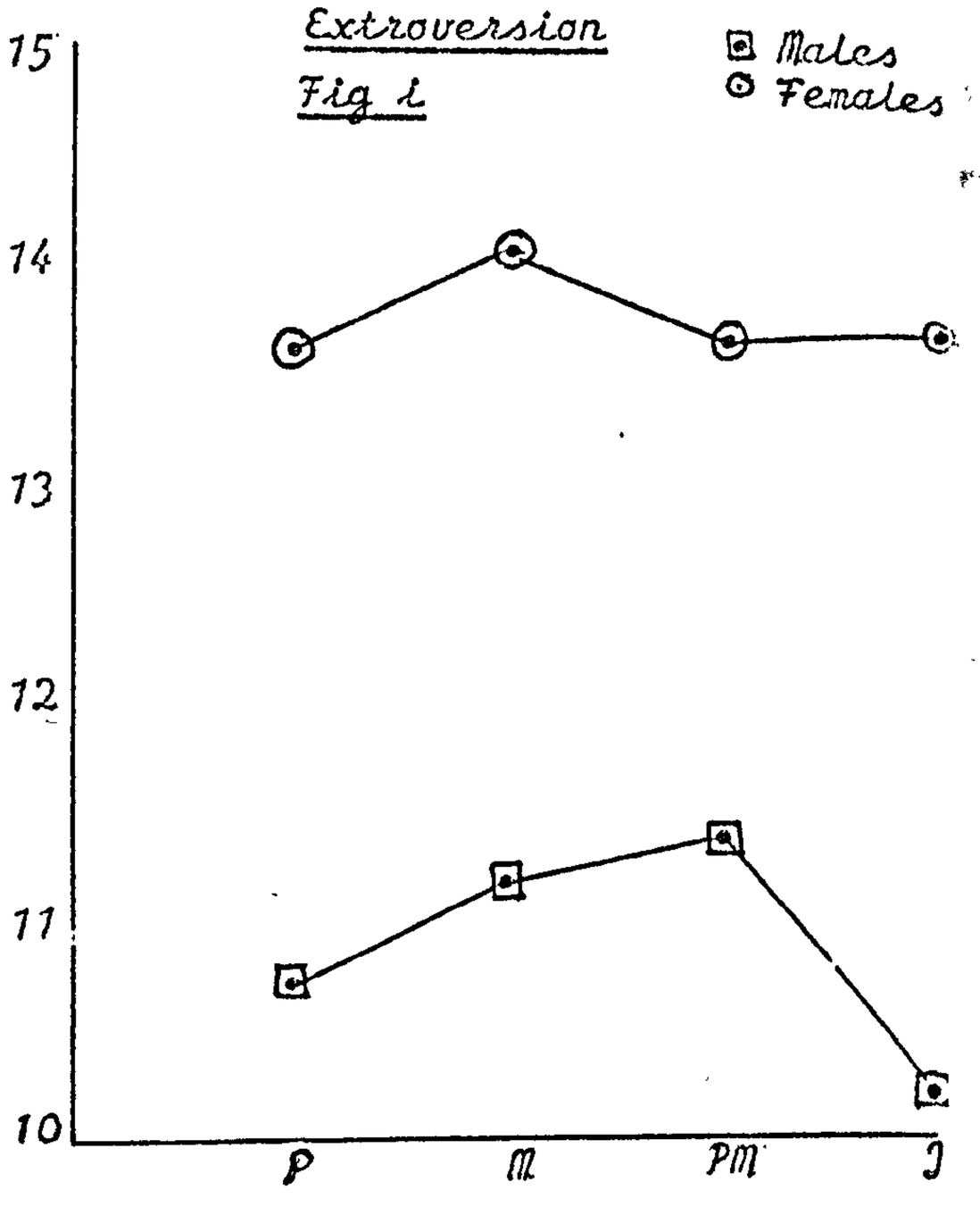
Psychotism

Fig h



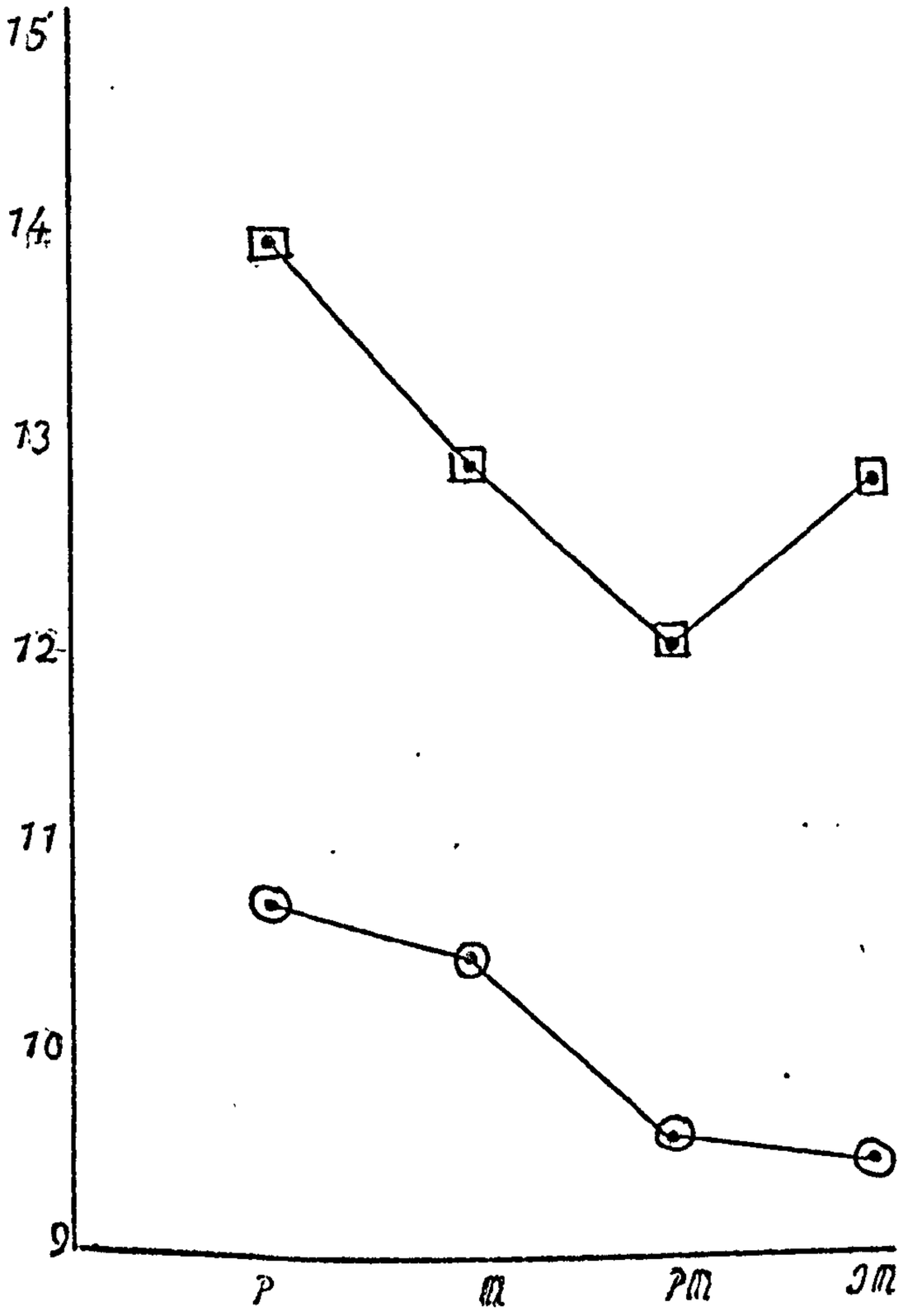
Extroversion

Fig l



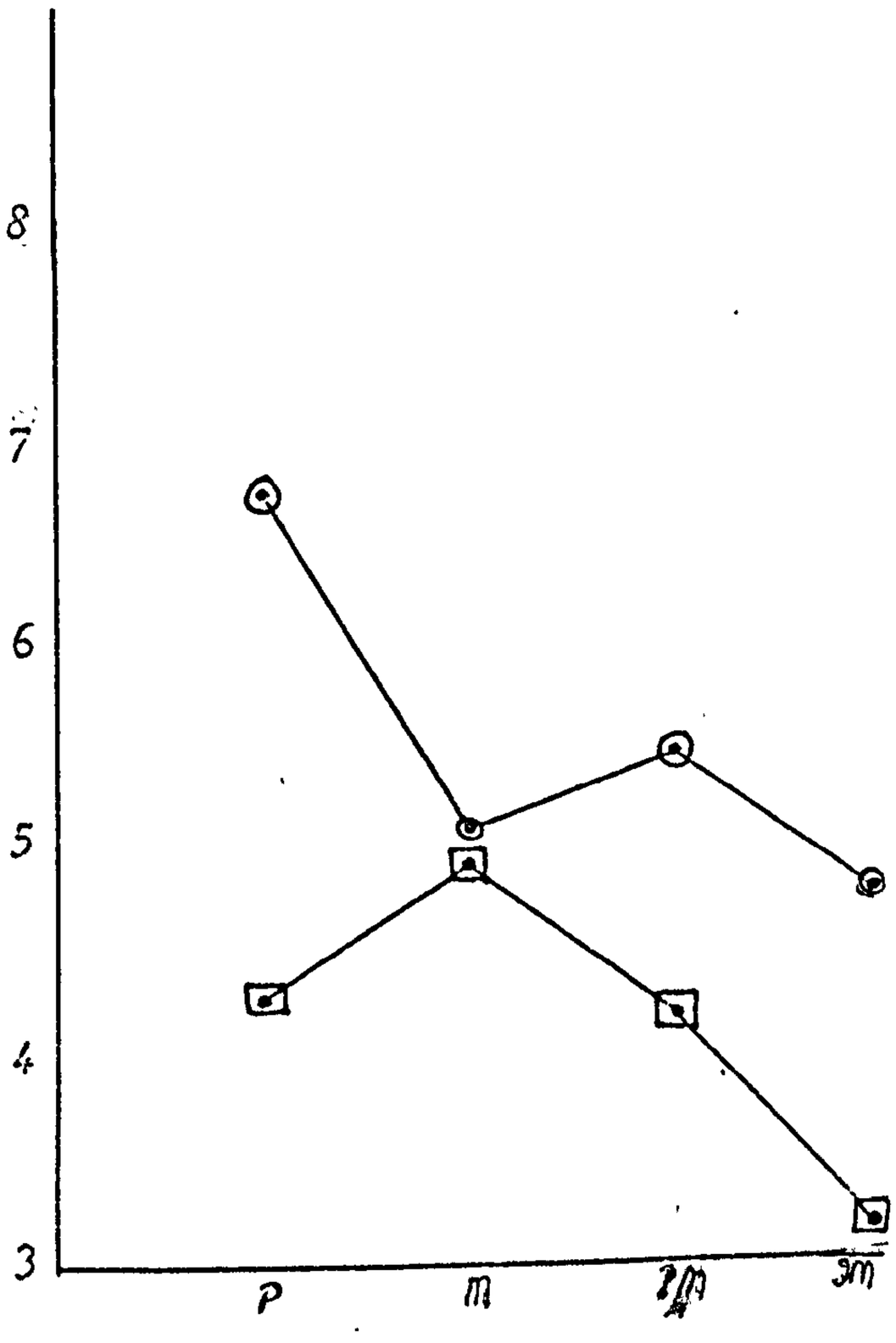
Neurotism

Fig i



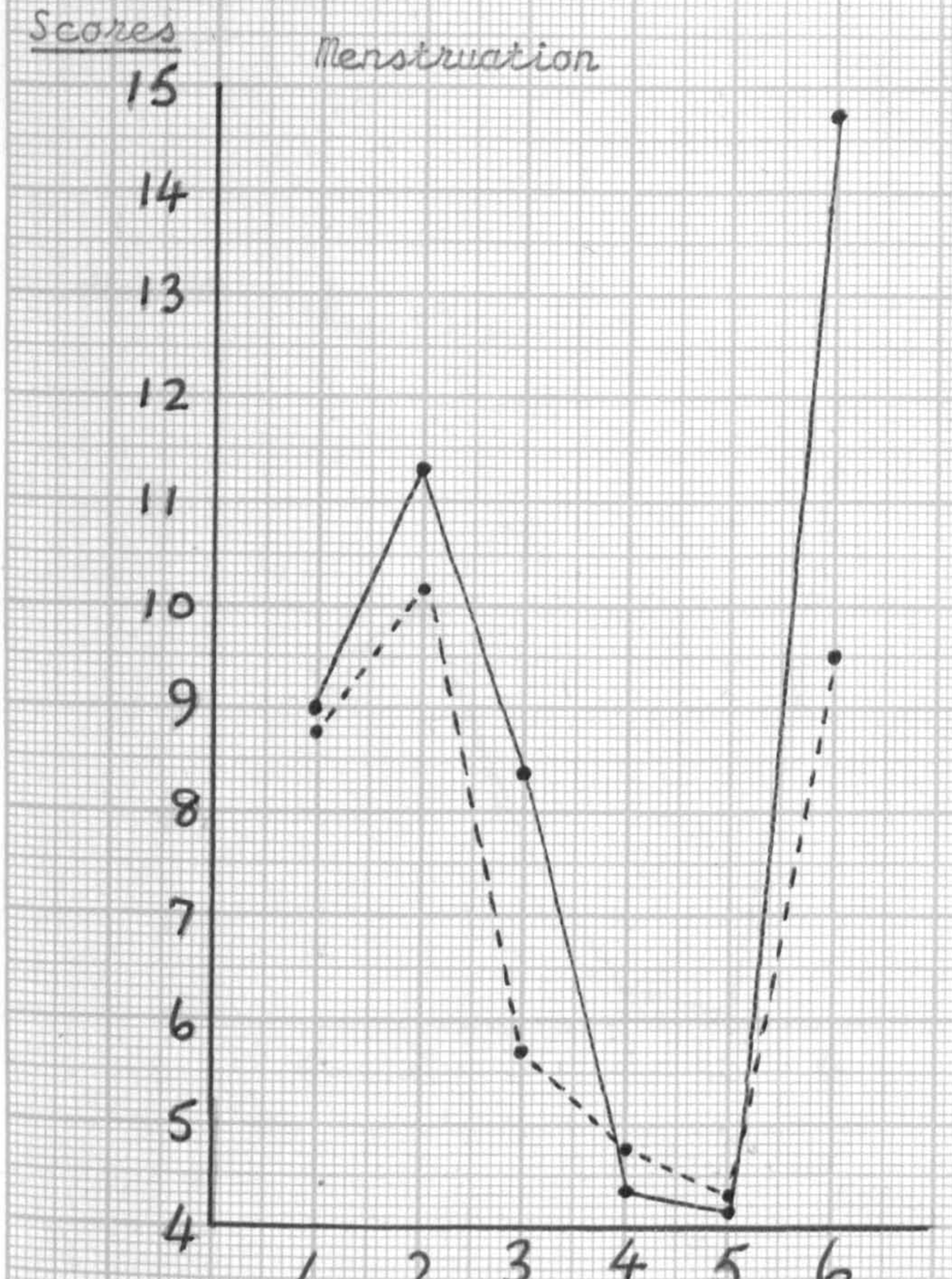
Lies

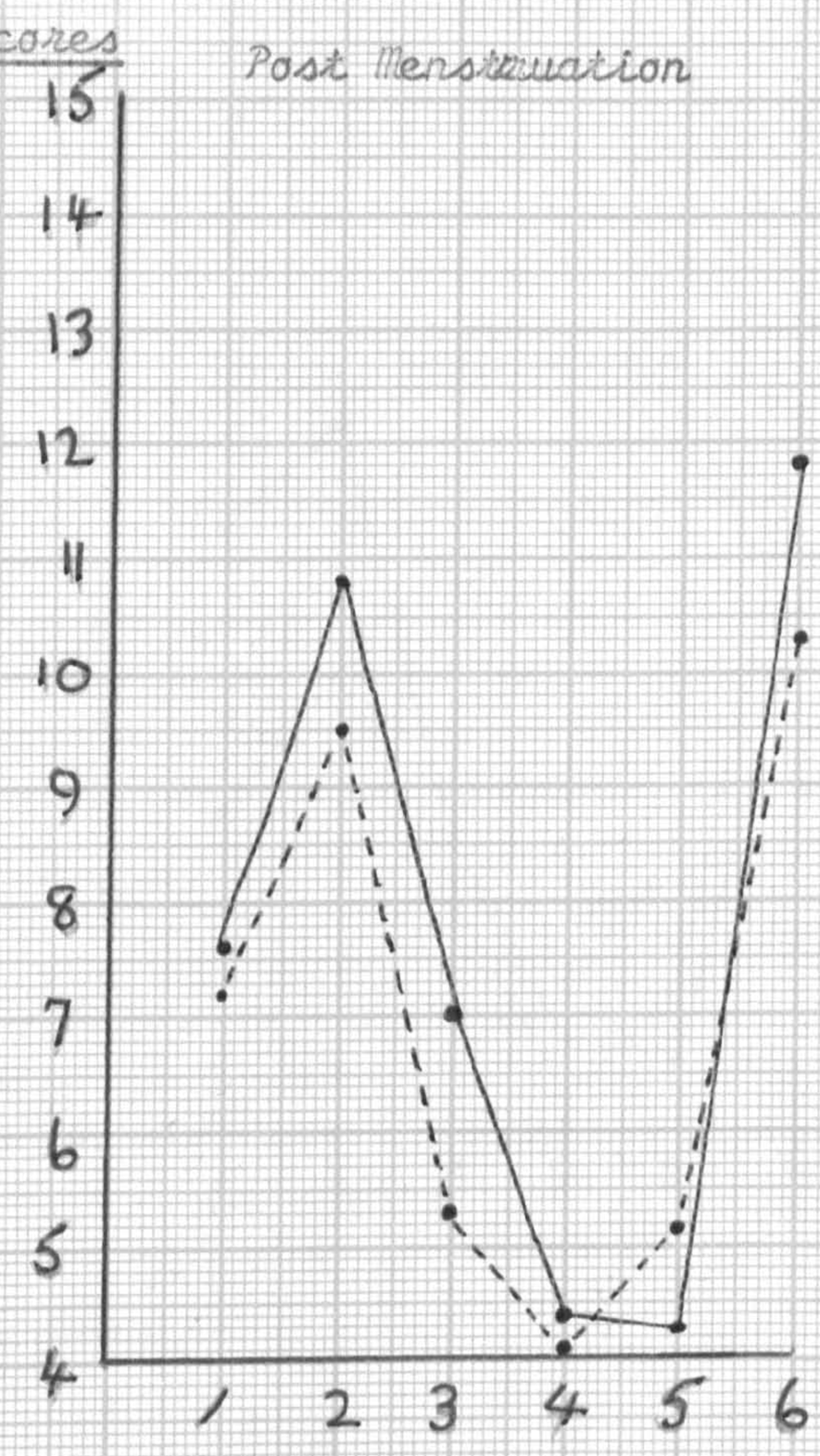
Fig k

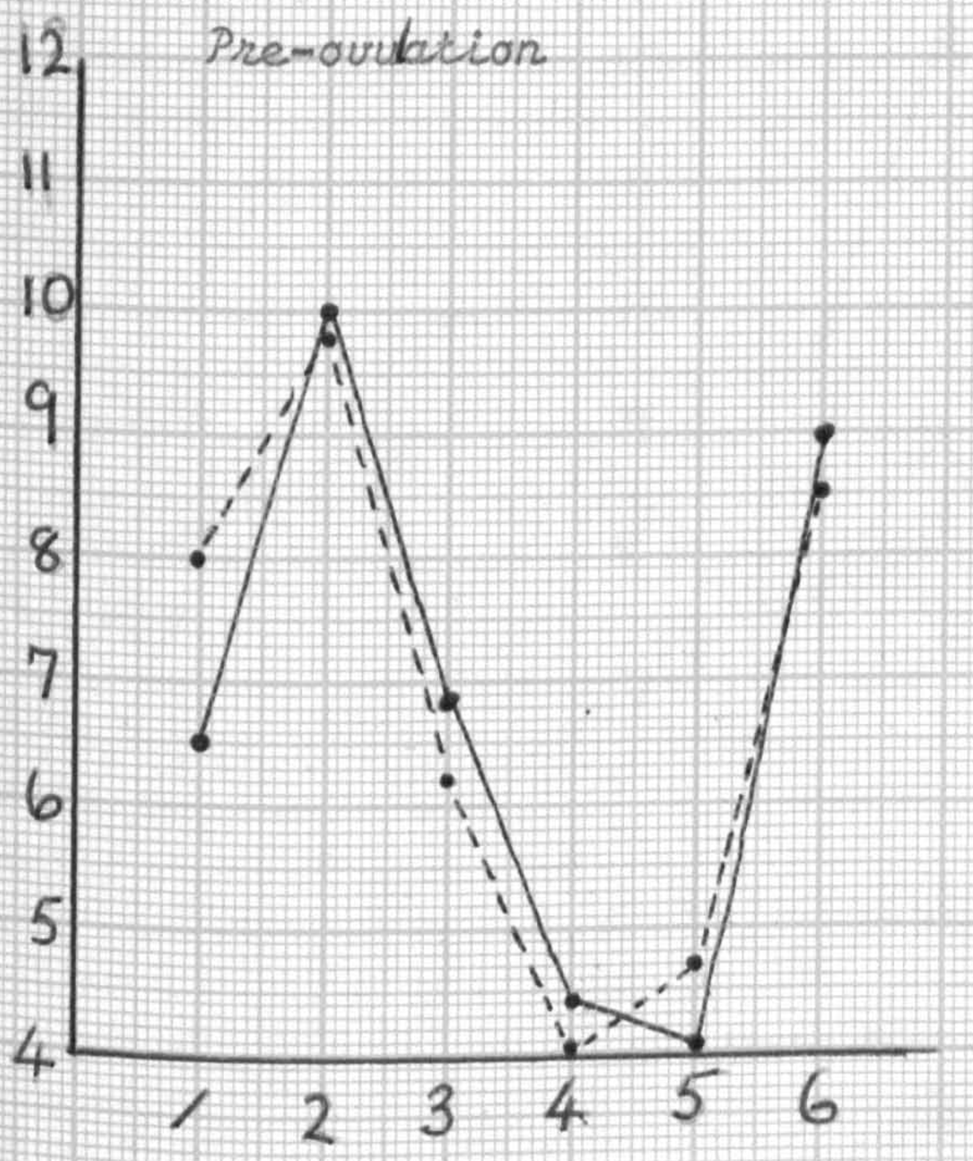


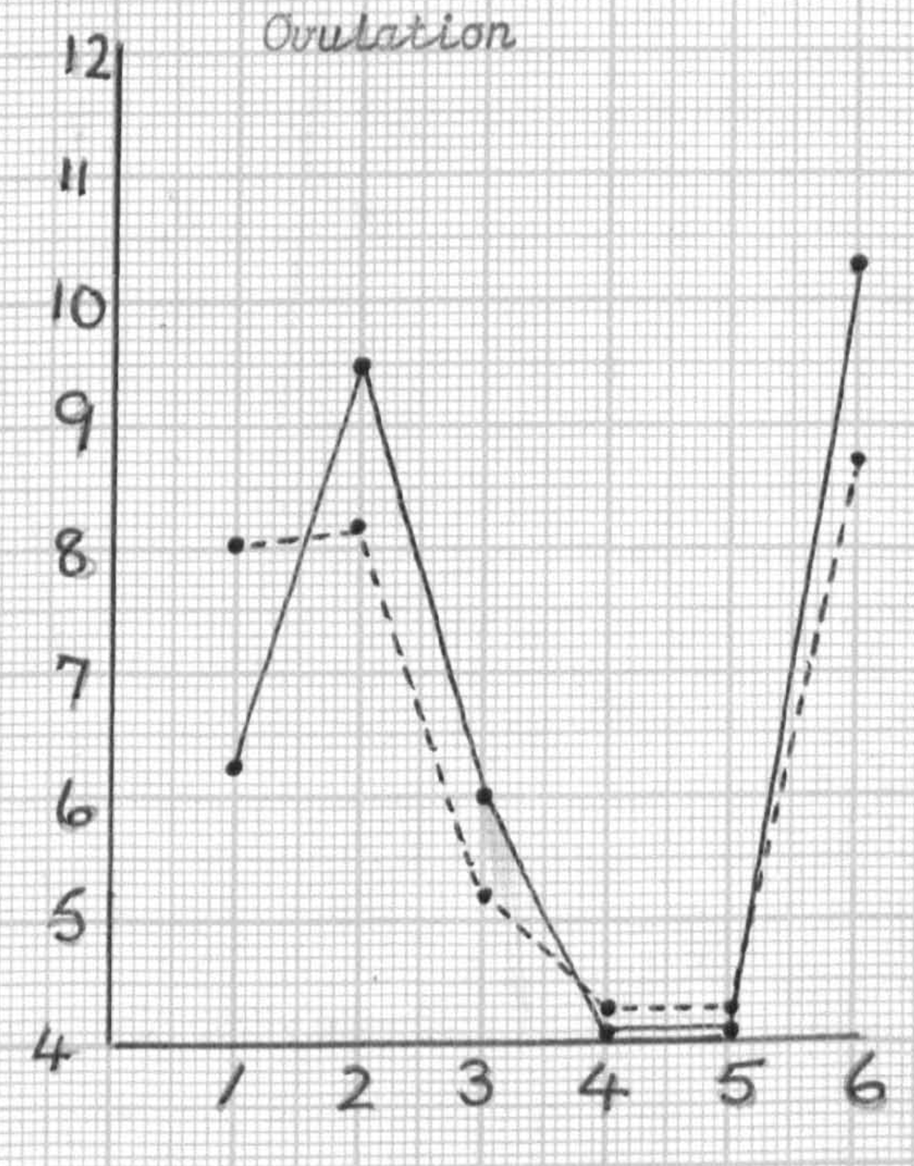
Means for the six scales of the Menstrual Distress Questionnaire for for Males (——) and Females (- - -)

Fig 2



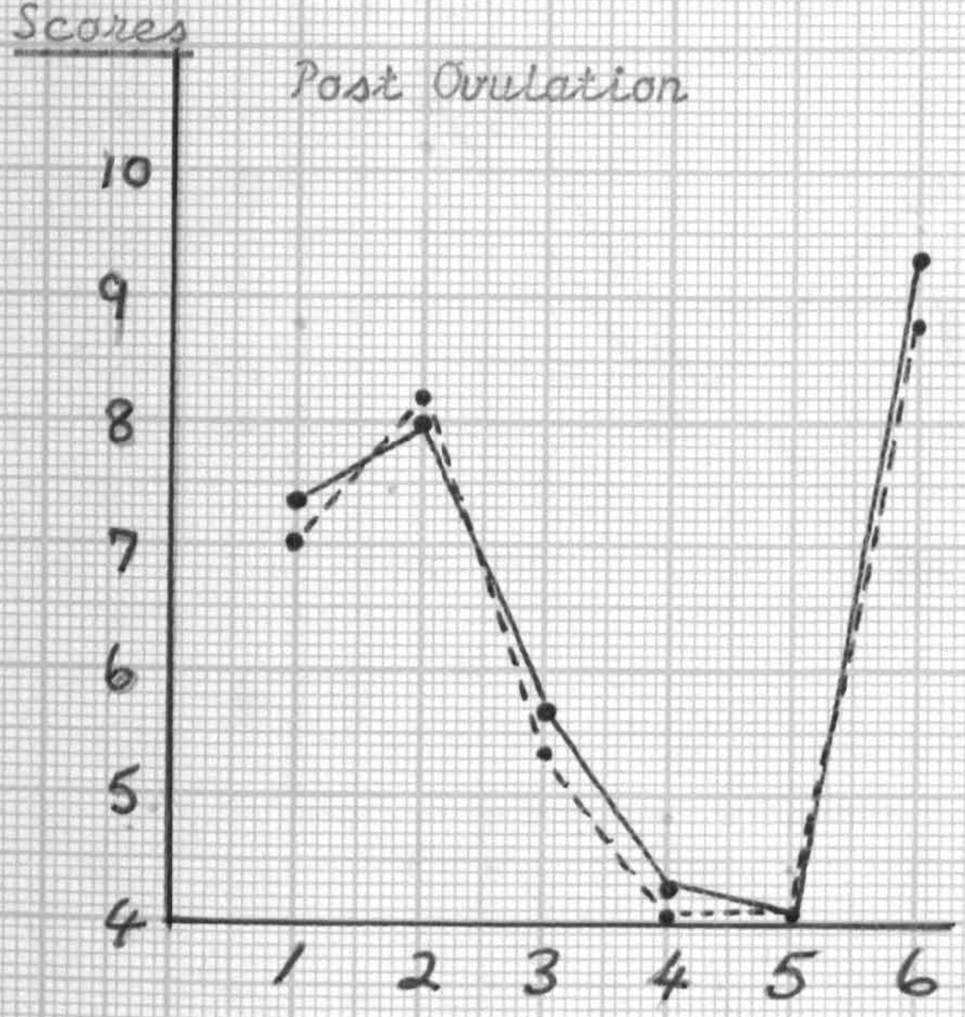


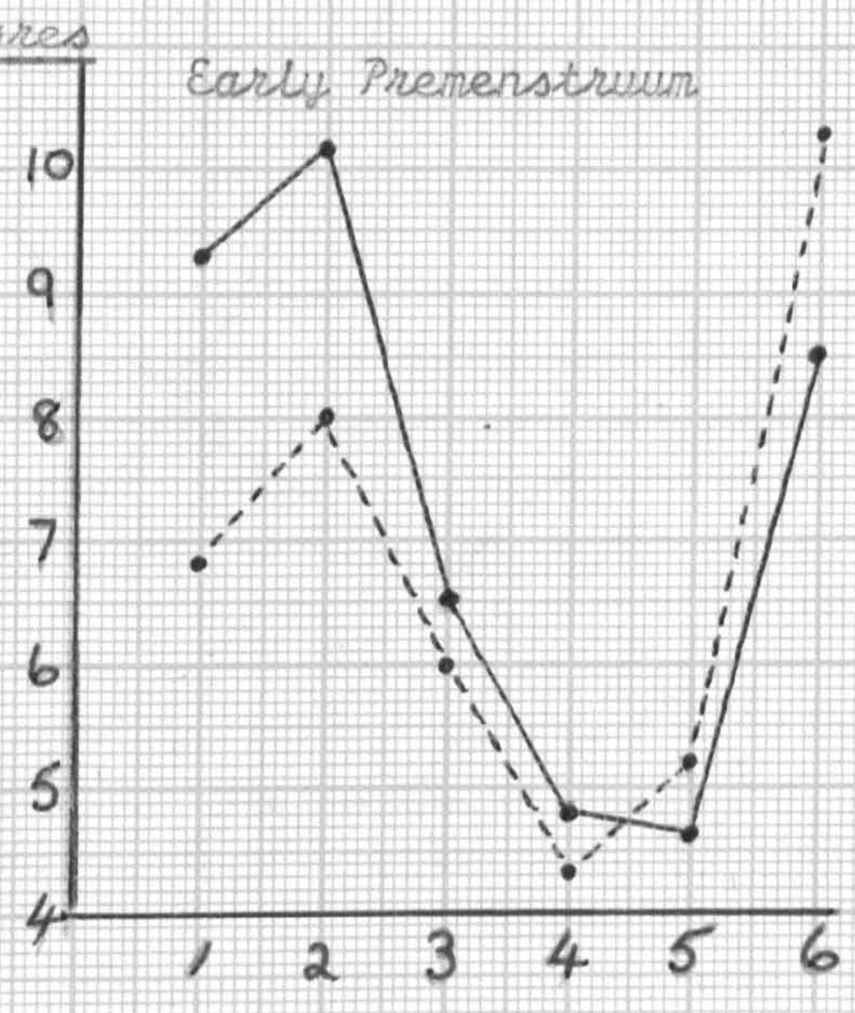


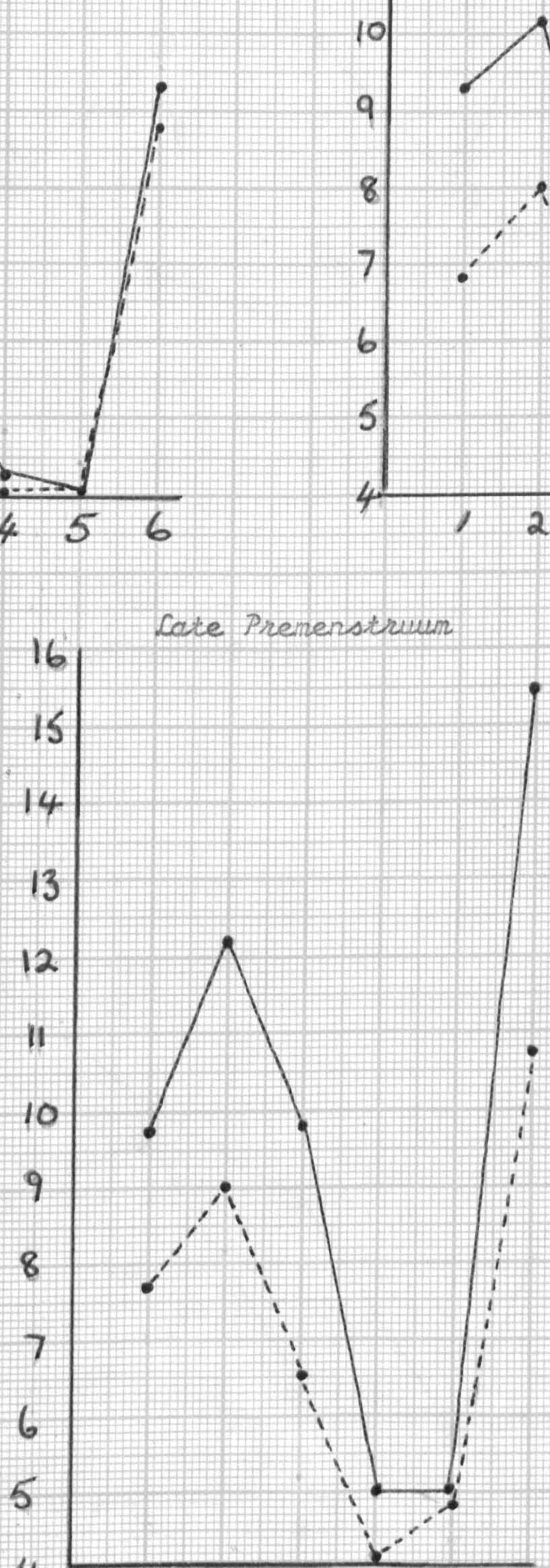


Means for the six scales of the Menstrual Distress Questionnaire for Males (——) and Females (- - -)

Fig 12







Comparison of Males and Females over symptom scales of the Menstrual Distress Questionnaire

fig c2 Pain

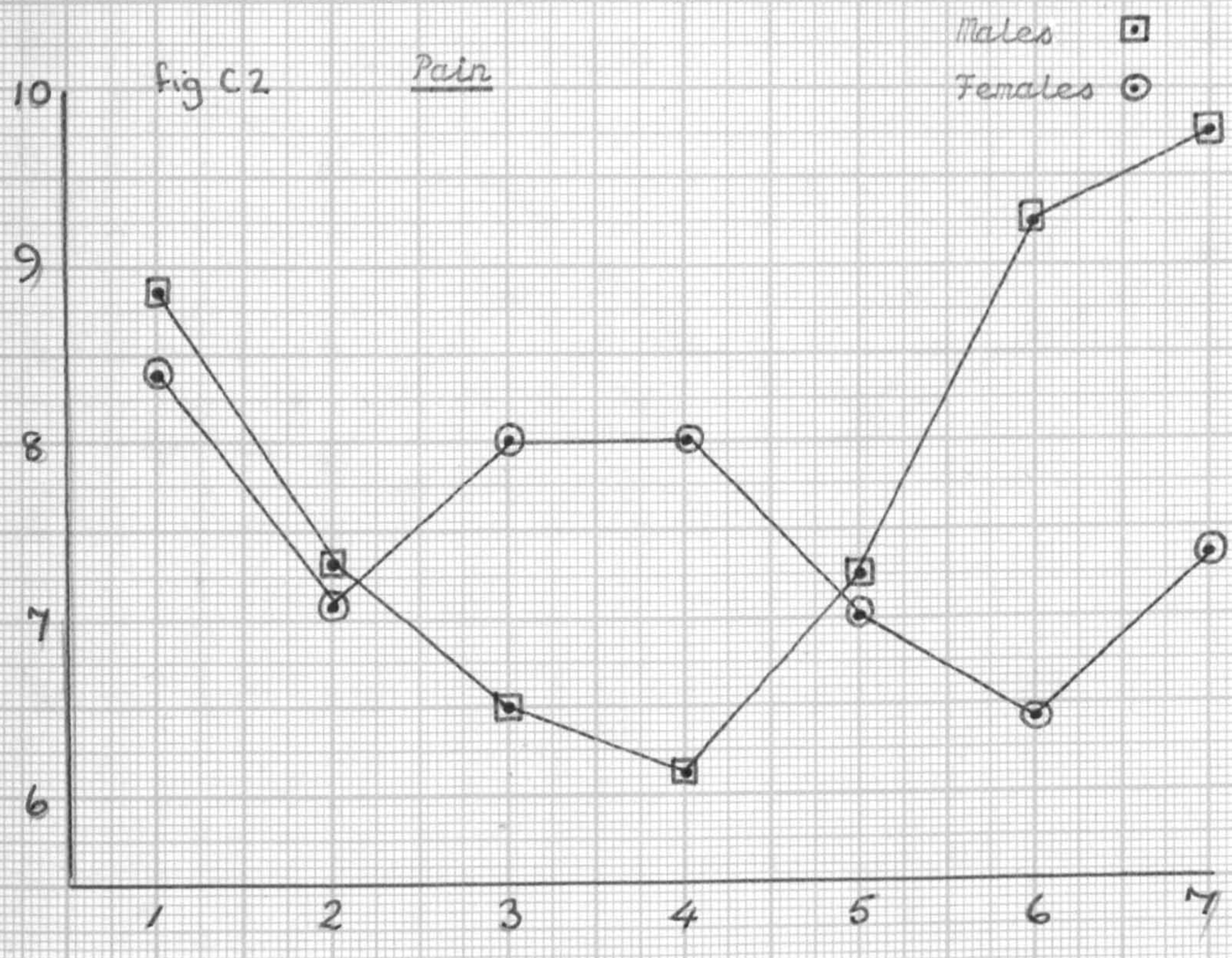


fig d2 Concentration

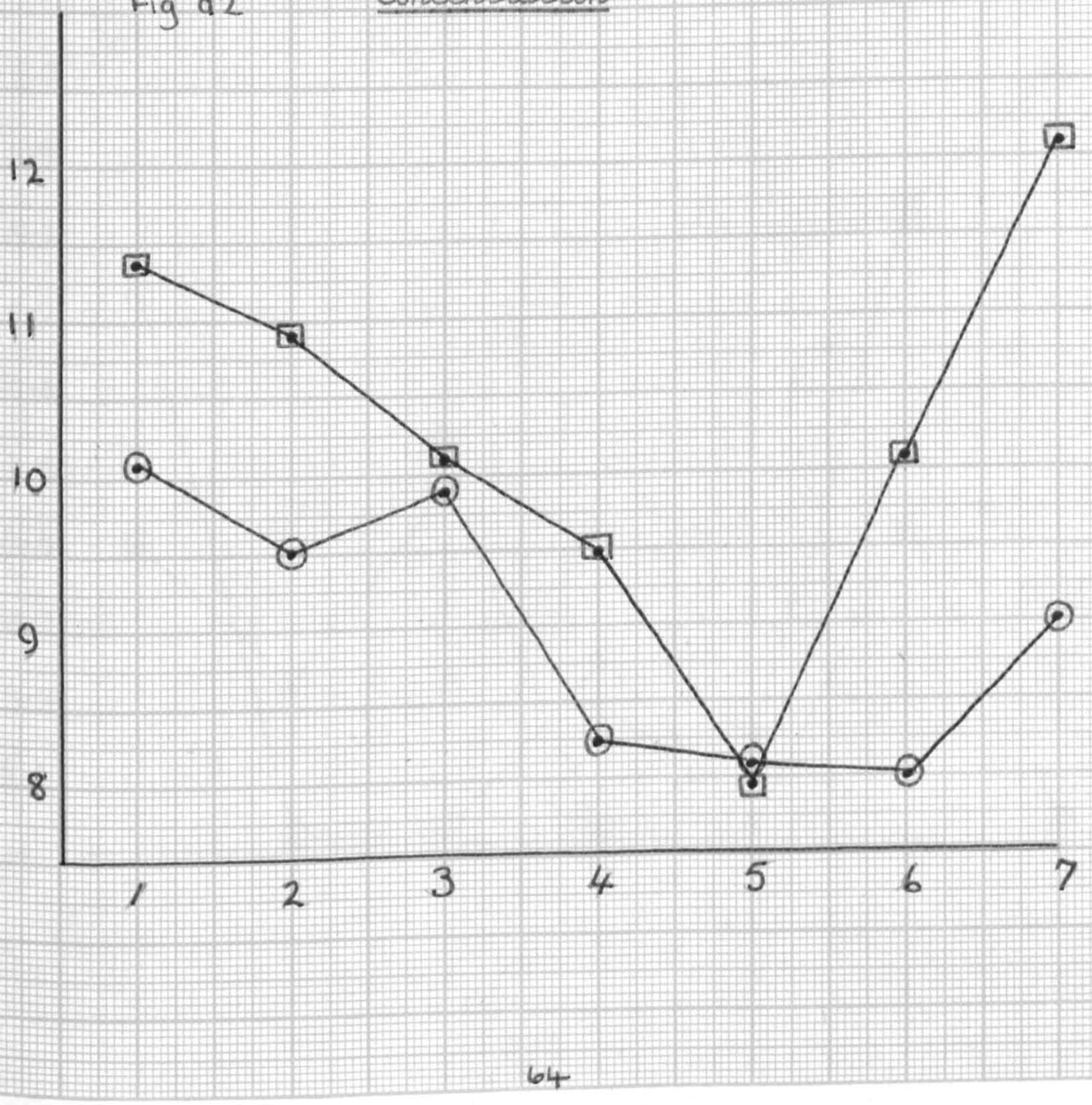


Fig e2

Behaviour Change

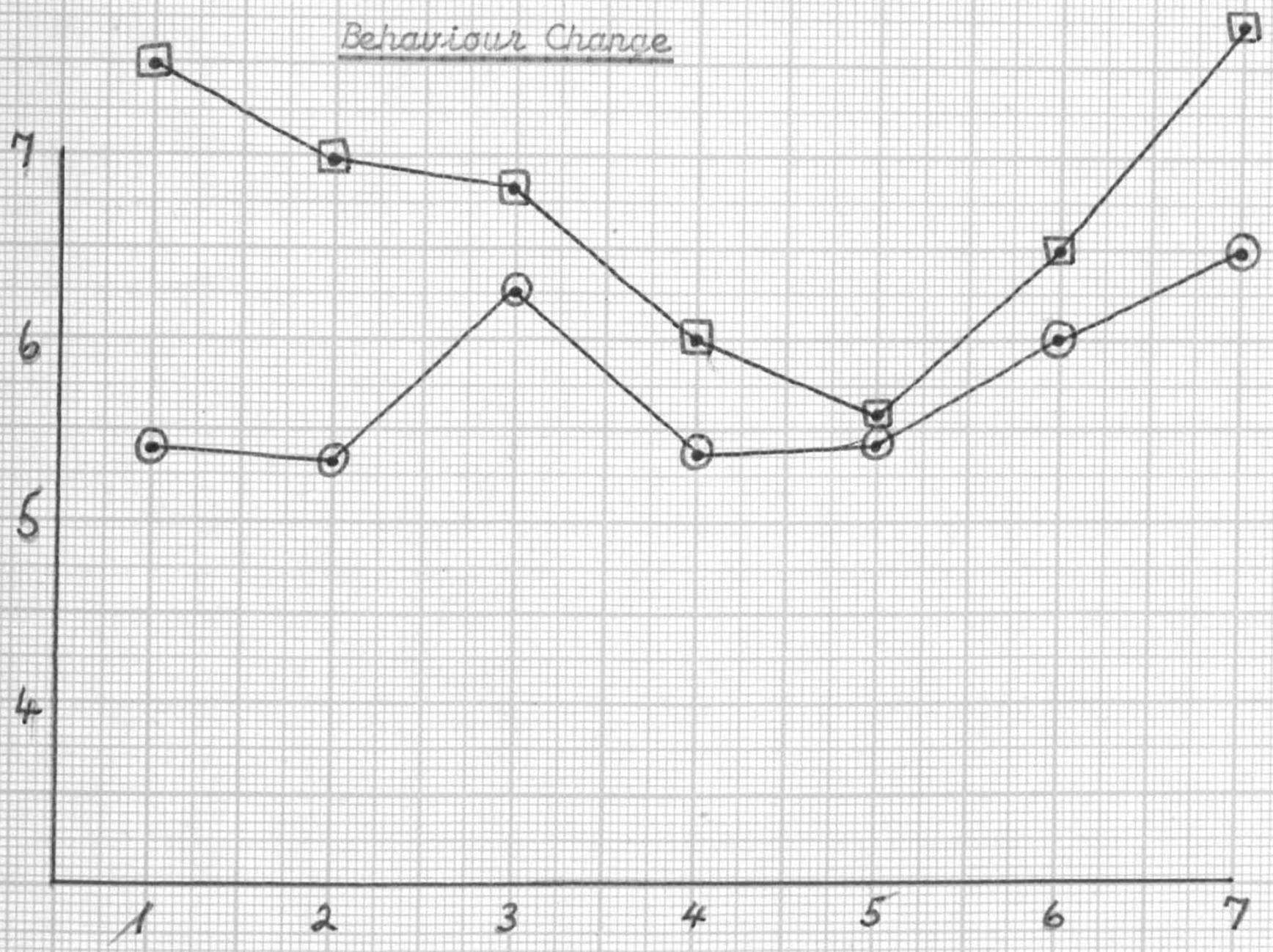


Fig f2

Autonomic Reactions

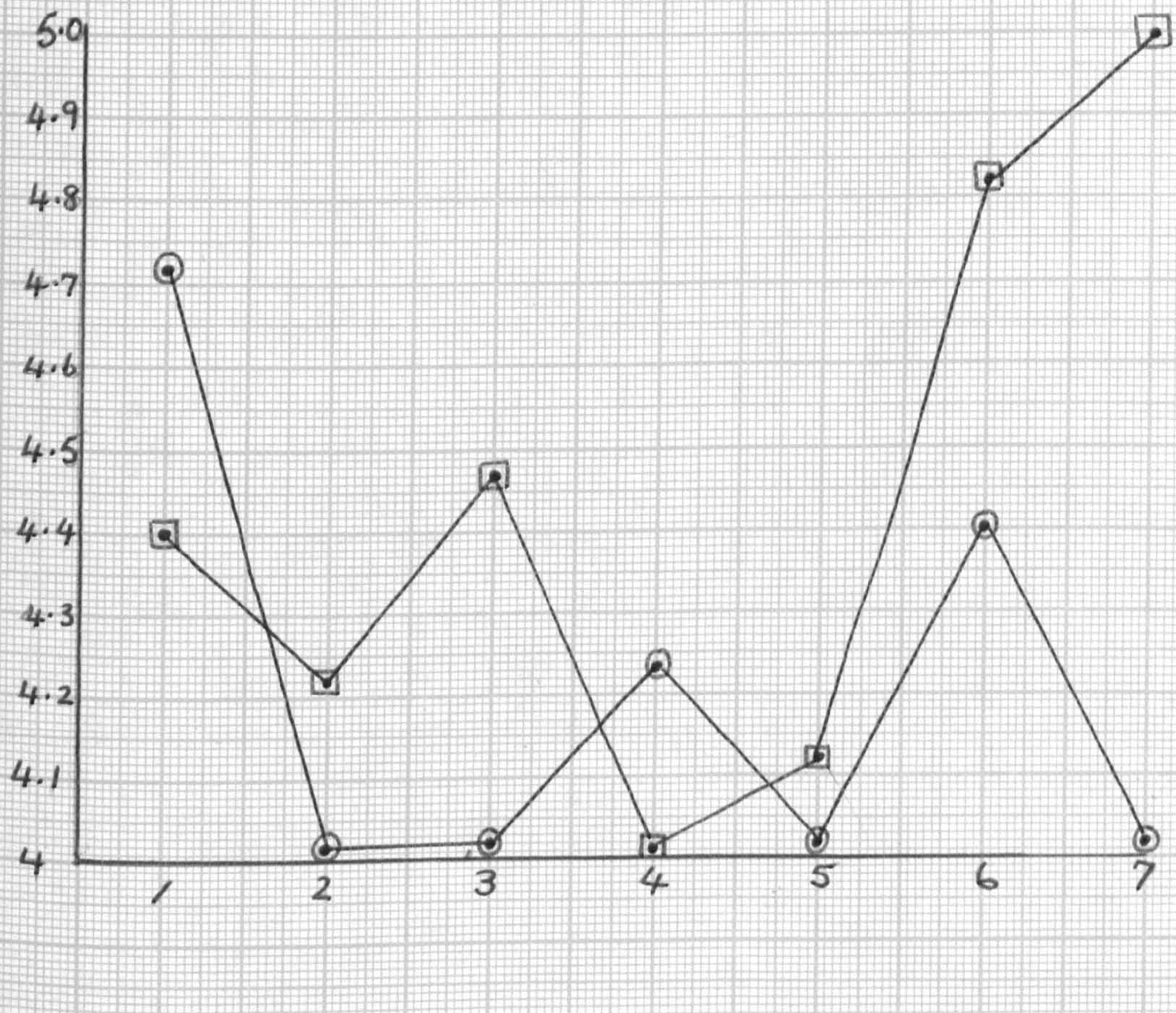
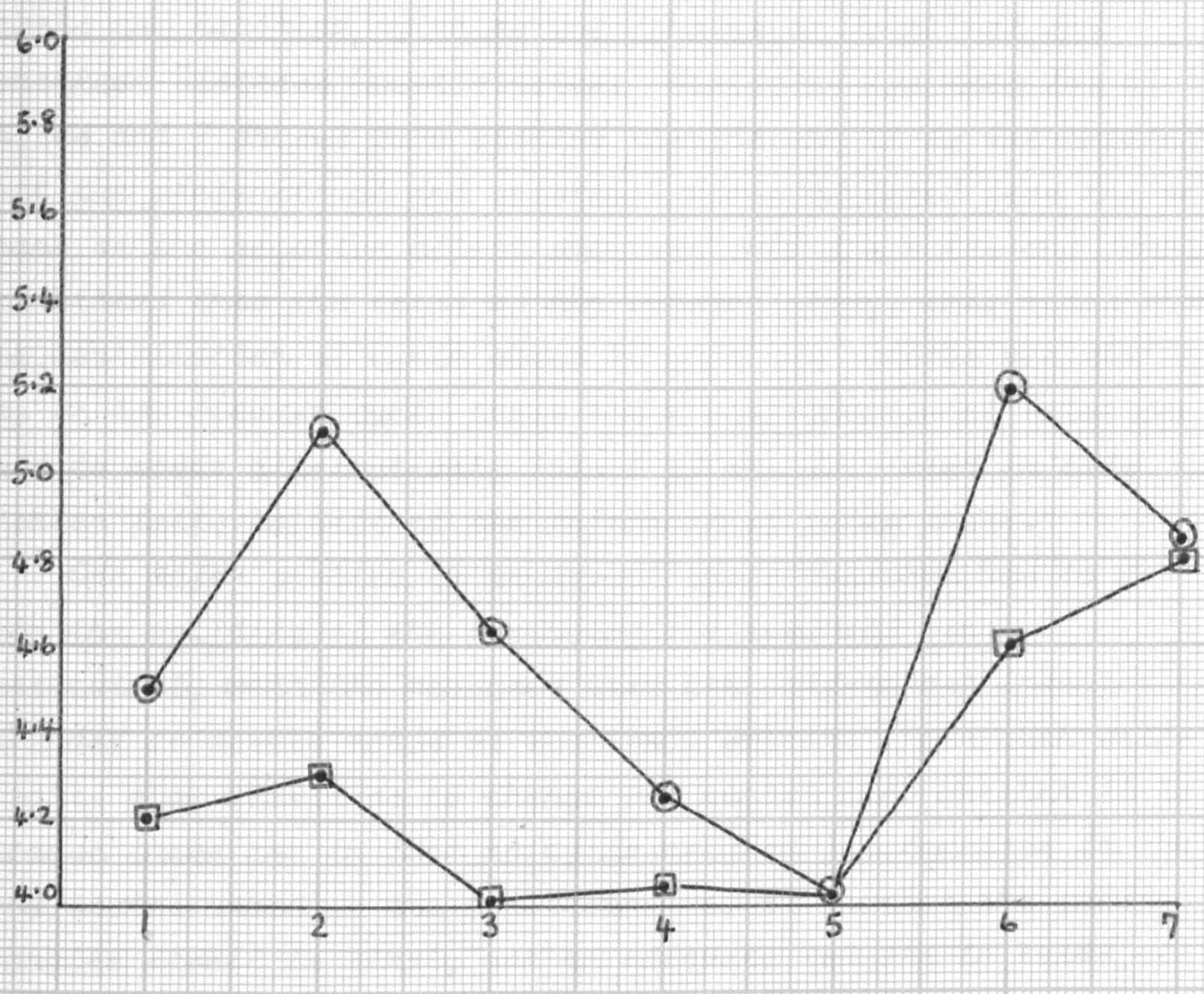
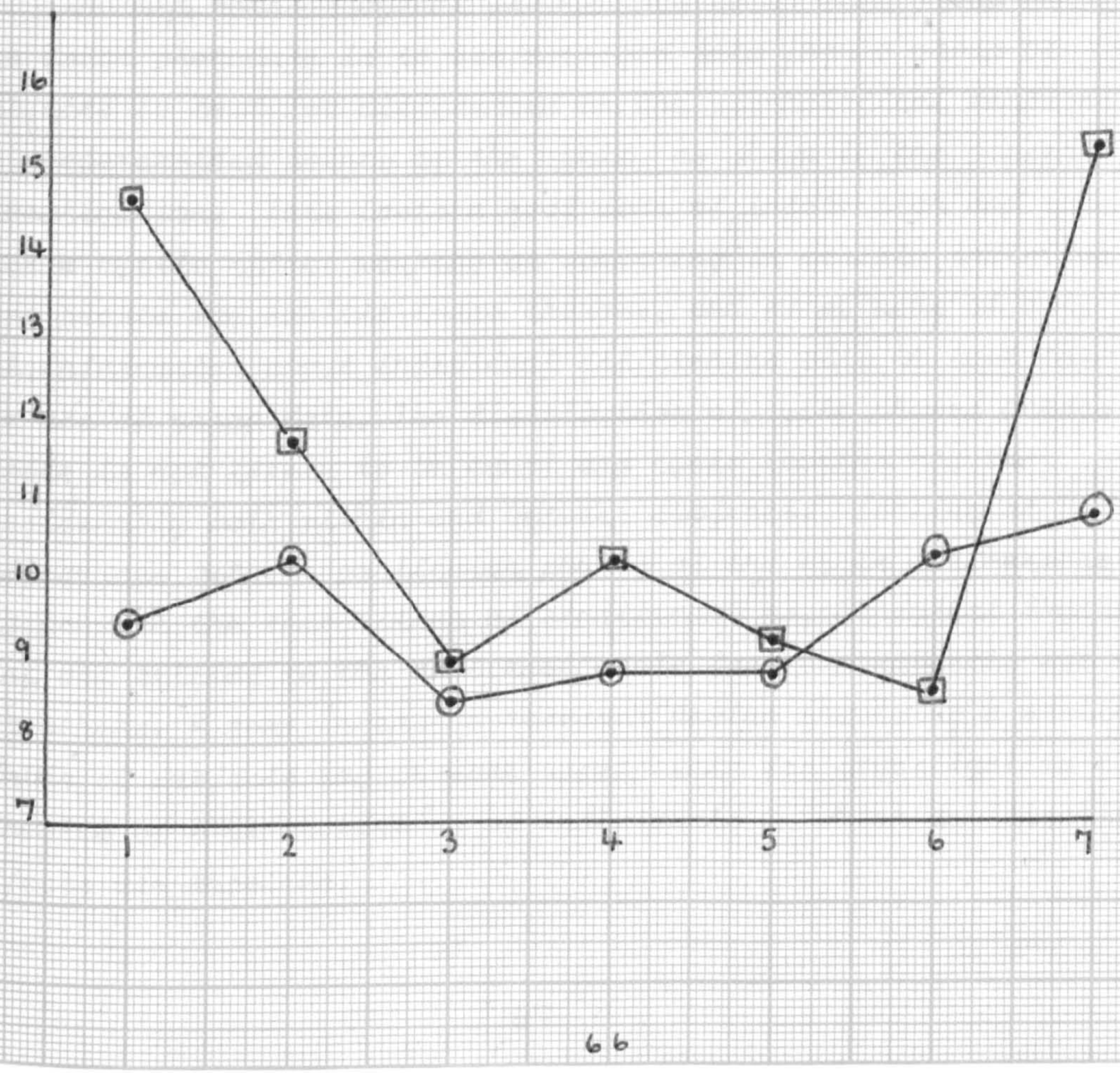


Fig 92 Water Retention



Negative Affect



DISCUSSION 3:5

Results suggested that rather uniform total distress scores/ levels are reported by males and females on Form T of the Menstrual Distress Questionnaire. Analyzing the data for 4 phases and 7 phases gave similar results and it is interesting that the premenstrual and menstrual means differed from the other means on the negative affect subscale only for males and females. Translated into the terms of the present study, this means that the contribution of cycle phase to mood and symptom variability may be low because cycle phase has a weak functional relationship to mood; alternatively Form T of the MDQ, used in this fashion fails to reflect the influence of cycle phase.

One major problem in menstrual cycle research has to do with the validity of the psychological measures used, particularly when the measures used are self-report inventories intended to assess moods or emotional states. When such self-reports show little or no change one cannot know whether it is because there are in fact no cycle-related fluctuations in the mood states named on the questionnaire, or whether the questionnaire itself is simply not an adequate measure in terms of internal or construct validity.

Another methodological problem has to do with group data. The usual procedure is to use averaged data from a group of subjects to test for differences on the psychological measures at predetermined points of the cycle, as shown in the present investigation. This loses a good deal of information and may mask a cyclic effect working or occurring in certain individuals. Some people may exhibit large changes, and some, none at all, but information about individual differences will be lost through the use of group data. The distribution of cycle phases across a sample is not likely to be equal and cycle lengths may vary considerably both within and between subjects. Looking at differences between particular phases of the cycle furthermore may prevent the recognition of significant psychological rhythms that are related to the menstrual cycle for some subjects but not for others. A more intensive research design involving a smaller number of subjects may be more appropriate for investigating the dynamics of that proportion of individuals in which debilitating effects are reported.

Contrasting results reported from studies employing different methodologies have been suggested as evidence for the operation of some kind of attributional or stereotyping process. For example, considerable discrepancies have been noted between retrospective reports of usual menstrual symptomatology and ongoing day-to-day reporting of symptomatology, Parlee (1973). It has been noted that no clear relationship is observed between these measures of menstrual effects.

Although there were no significant changes in reported symptomatology across time on the MDQ, Males scored consistently higher than females. The only symptom subscale that differiated female from male subjects was water retention, with the females scoring higher than the males across all time period comparisons. It is interesting that even the physiological based symptom subscales did not differentiate males and females. This could serve as an indirect confirmation of Ruble's (1977) finding, where level of reported pain was explained by expectation level. Since the subjects in this study were provided with incomplete information regarding study intent, this in unlikely to be the case. However, it is also interesting that the negative affect scale representing symptoms that have been considered definitive of premenstrual tension did not result in significant differences between males and females.

In comparing the ratings of the female and male subjects in this study, it is difficult to interpret the psychological significance of a difference in the absolute size of the scores. Such a difference could be the result of a response bias: males might, for whatever complex reasons, be consistently more likely to respond with higher ratings. Or the sex difference might mean that males really do experience these symptoms to a more severe extent than women. Again, however, what is of more interest is the comparison of males and females subjects' ratings of symptom changes. MDQ responses show that females and males give similar reports of the kinds of symptom changes occurring, as far as the women are concerned, before and during menstruation, and for the men during the matched time.

Other researchers have also found this phenomenon (Moos, 1968; Parlee, 1974). Since the responses of the females in this study are comparable to those of the Moos' samples they might be perhaps interpreted in similar ways. BUT if the females' responses do represent report of premenstrual tension and menstrual distress, then what do the males' responses represent?

While not impossible, it is extremely unlikely that in one case ratings on the questionnaire are the result of one psychological/physiological mechanism, while in the other case an entirely different mechanism operates to give similar results.

These data lend support to the hypothesis that females may experience different levels of some symptoms across time related to their menstrual cycle, but mean levels of such symptom reports were not demonstrably different from those reported by matched male subjects. Data from this study do not imply cyclicity in females or acyclicity in males, as the time span and number of observations were insufficient. Replication over two or more cycles is needed.

The pattern of correlations between EPQ and MDQ scale scores reveal a fairly flexible score. If we should find that those people who report a certain amount of distress, both physically and mentally, also score above the norm on the Psychoticism and Neuroticism scales of the EPQ, we could assume that the experience of symptoms is not caused by the physical discomfort at that particular time of the cycle, but that both pain and concern about periodic mood changes could be indicative of an unstable personality.

The findings reported were that, first, scores on the EPQ do change over the 4 week study period when one looks at individual scores. For some individuals there is considerable variability with scores altering by as many as 5 points from the premenstrual to the intermenstrual phase. On the other hand, there were scores which remained stable throughout. Such factors are of major significance for 2 reasons:- 1. The scores could reflect a mood cycle which is highly individual (and for this reason), 2. Presentation of grouped data can lead to considerable distortion where subtle changes in the variable under investigation are accruing or

where a complete characterisation of a time period/cycle is required. In this light, it might be wise to study intensively the individual reactions of a small sample of women and / or men rather than draw generalisations from combined data.

Second, subjects in my sample with 'premenstrual distress' that is subjects who show a definite increase in reported symptomatology during this phase, are slightly less neurotic than the 'average' man / woman. The group with moderate to severe menstrual distress have a tendency to high N and P scores. However, there are a high preponderance of high N scorers. Nine of the thirteen men have high N scores which are usually but not always accompanied by high P scores.

Only three of the thirteen women have high N scores and they do not have high P scores. It is interesting that three of the women have high N scores premenstrually which drop to a more even level once menstruation commences. Four of the men have one high N score over the four week period, which then falls; this suggests that an individual's predisposition to Neuroticism could be related to the frequency and severity of any symptomatic discomfort which he/she may experience as the result of the menstrual cycle, as far as the women are concerned, and a mood cycle as far as the men are concerned.

Some subjects did have a low N score and still report a moderate to severe degree of premenstrual tension, this, however, happened infrequently in the subjects studied. From this it is reasonable to suppose that personality factors are involved in the etiology of menstrual symptomatology, as far as the women are concerned. But it is not possible from this study to determine the direction of the relationship. It would appear essential to have some indication of personality traits when research on the menstrual cycle is being conducted; however, it does not seem possible to measure individual variation in personality structured by the menstrual cycle. Because there is great variance among the subjects, any measure of central tendency is a poor standard against which to classify individuals to fit a pattern of menstrual mood cycling.

The majority of studies of the menstrual cycle phenomenon and affective states (Paige, 1971; Wilcoxon, et al,

1976) have employed procedures which involve comparison of phase means on affective dimensions in a manner similar to the procedure employed in this study. Thus, it is not surprising that the inconsistencies of reported findings from the past have again been replicated. These inconsistencies appear to relate less to the lack of cyclical variability in womens' experiences and more to the adequacy of the models used to represent such differences. Results from this study demonstrated that when Form T of the MDQ is used to tap characteristic rhythmic mood patterns over one menstrual cycle, such differences were not exhibited. However, individual differences among the 26 subjects was noted. It also was demonstrated that men experience mood fluctuations and that women's moods are neither more nor less predictable than those of men.

In fairness to Form T of the MDQ, it was designed to allow a woman to describe her menstrual cycle symptoms as she is experiencing them on the specific day on which she answers the questionnaire. Mean difference procedures which allow for zero sum outcomes in tallying directional differences are probably not going to allow for the understanding of the complexity of variability of women's response patterns. Form T, when used in this fashion, did not adequately represent the range of differences in patterns observed.

When daily ratings are collected over a 'reasonable' period of time, can it be demonstrated that women experiencing normal cycles display rhythmic mood fluctuations? Would Form T of the MDQ be able to monitor such changes over this time period? And if women experience such changes, are they more extreme than those reported by men?

What has arisen from the study just described is a need to test the sensitivity and precision of the modified Form T of the Menstrual Distress Questionnaire and its utility as a measuring instrument on a day-to-day basis. Secondly, obtaining a daily record of the feelings and mood changes of a small group of people would enable one to observe the extent to which the supposed premenstual and menstrual syndromes could be said to be mood changes and not due to premenstrual and menstrual distress.

The major study to be outlined attempted to avoid the pitfalls of previous research by employing the modified Form T of the MDQ to follow a small group of men and women over two consecutive cycles (60 days).

As the first study revealed personality to play a significant role in the perception of menstrual symptomatology the EPQ was again utilized in order to give an indication of personality.

CHAPTER 4

Study 2 4:1

Subjects

10 men and 10 women were recruited through advertisements on notice boards in 3 large institutions, (a university, a polytechnic and a hospital), which requested volunteers to participate in a study on personality consistency.
The group was limited to apparently healthy individuals who, as far as the women were concerned, were not using contraceptive pills. The background data on the total sample are given in Table 9.

Procedure

After expressing a desire to participate in the study, each subject received a pack of 60 Menstrual Distress Questionnaires (MDQ) and 2 Eysenck Personality Questionnaires (EPQ) with instructions to date and complete the MDQs daily from the day of receipt. One EPQ was to be filled out on the first day of the study and one on the last. On completion, the subjects were requested to return the questionnaires to the administrative offices within their place of work or study. The exact instructions given on each pack were as follows;

> "Enclosed are 60 Form T Questionnaires and 2 Questionnaires entitled EPQ. Please date and complete one Form T and one EPQ TODAY. Thereafter, fill in one Form T each day until the last day when you should complete the second EPQ.
> To ensure consistency, it would be helpful if you would complete the forms at the same time each day responding to your feelings at that time. Do not look at previously filled-in questionnaires and if you miss a day, do not go back. It is important that your mood at the time of completing the questionnaire is recorded. Please deliver completed questionnaires to Administration.
> Thank you very much for your cooperation".

To ensure confidentiality, questionnaires were coded alphabetically for the females, and numerically for the males. For the females, reference to menstruation was, as far as possible, reduced. On each questionnaire females were asked if they expected a period within the coming 7 days or if they had experienced a period in the preceding 7 days.

Analuses 4:2

Each female's menstrual period was determined from her daily self-report on the MDQ. The subject indicated when she was expecting a period, when she was actually menstruating, or had recently experienced menstruation.

Men were assigned (for statistical purposes) hypothetical menstrual cycle days by matching them randomly with a female subject. In order to make the raw scores obtained on a daily recording comparable from day to day during the entire experiment, they were converted into T-scores (a variation of the sigma score or Z - score). The T- scores made possible the comparison of the records of each subject during the phases of her menstrual cycle with the records of other subjects during their cycles. The men's scores could also be compared with the women's .

In order to assess whether moods fluctuated as a function of the phase of the menstrual cycle, the scores for each of the MDQ factors for each day have been graphically represented for each individual and will be found in the Appendix 1.

The means and standard deviations from the MDQ taken over two consecutive cycles (60 days) for males and females are shown in Tables 10 and 11.

Means and standard deviations for the MDQ scales in each phase of the menstrual cycle for cycles 1 and 2 are shown in Tables 12 (Males) and 13 (Females).

Means and standard deviations for each individual on the MDQ scales for cycles 1 and 2 are detailed in the Appendix 1.

Eysenck Personality Questionnaire (EPQ) scores recorded on day 1 and day 60 for males and females are shown in Table 14. Product moment correlations between day 1 and day 60 for the EPQ were conducted and these are shown in Table 15.

Although partly a test-retest situation, it must be remembered that there is, nevertheless, a possibility of change in the 60 days, (assumed by Eysenck, 1975; not to be great within 30 days). This is ample time for subjects to have forgotten their original replies, but not long enough for any serious personality changes to have occurred.

Except for the Psychoticism value for the males, all reliabilities are higher than those of Eysenck (1975) who had one month intervening between testings.

The biggest difference is to be found between the two Lie score correlations for men and women separately. The difference is not significant at the 5% level. Therefore, there are no significant differences between any of the correlations. All the individual correlation coefficients are significant (female Lie score .70 and male Psychoticism score .79) $p<0.05$. The others are significant $p<0.001$ for females and males combined.

Inspection of each individual's daily scale score fluctuations and the phase means for cycles 1 and 2 reveal large within sample differences. As can be seen, it could be quite misleading to make statements about menstrual cycle mood shifts on the basis of the total group.

Premenstrual and menstrual means were not significantly different from the intermenstrual mean for the males on any of the MDQ symptom scales. For the females, premenstrual and menstrual means differed significantly from the intermenstrual mean on the following scales: Pain $p>0.5$; $F= 5.4$ (d.f. 2:27)., Concentration $p>0.5$, $F=4.1$., Behaviour Change $p>0.5$ $F=4.3$ (cycle 2 only)., Water retention $p>0.01$ $F=8.3$., Negative affect $p>0.01$ $F=8.6$ (cycle 2 only)., Arousal $p>0.5$ $F=3.0$ (cycle 1 only).

Correlations between cycle 1 and cycle 2 for the MDQ scores for males and females are given in Table 16. In general, the correlations for the females, especially for pain, behaviour change, water retention and negative affect, are statistically significant and high, indicating that <u>some</u> women who complain of symptoms in cycle 1 also tend to complain of symptoms in cycle 2. There are fewer correlations for men and many more negative correlations than for women. This is well illustrated in Table 17. There are no correlations for male 9 between reported symptomatology for cycles 1 and cycle 2. For males, 2, 3, 4, 7, 8 and 10 there are negative correlations for at least one symptom scale indicating experience of symptoms within that scale for one cycle, but not the other. Reported symptomatology for the females is more stable and there are only two negative correlations. These results suggest that

women tend to complain of generally consistent symptomatology from one menstrual cycle to another. However, there may be substantial inter-cycle variability, as noted by several other investigators (Gottschalk, Kaplan, Gleser and Winget, 1962; Rogers and Harding, 1980; Maitland-Schilling, 1980; Swardby, 1981).

The severity of reported symptoms of distress during the premenstrual and menstrual phases for the 8 symptom scales on the MDQ for males and females are shown in Tables 18, 19, 20 and 21, 22, 23.

The incidence and prevalence of premenstrual tension is difficult to assess as there is no sharp dividing line between mild and insignificant premenstrual changes and the severity of premenstrual tension However, from a perusal of the women's chart of mood fluctuations it was found that there were 4 women whose scale score changes would approximate the classic case of high negative affect premenstrually and menstrually., (B, E, H and I). Mild premenstrual tension is experienced by subjects F, G and J. Similar patterns are revealed for 4 of the males (1, 6, 7 and 10). For 2 of these subjects, 1 and 10 negative affect symptoms are endorsed from mild to moderate for 'premenstrual' and 'menstrual phases'. For subjects 6 and 7 mild negative affect symptomatology is reported 'premenstrually' but increases to moderate for subject 6 and strong for subject 7 during the 'menstrual' phase.

If one inspects each symptom scale separately, definite patterns begin to emerge. On the pain scale all female subjects endorsed at least one symptom for the premenstruum and the menstrual phase. 9 out of the 10 male subjects similarly reported at least one symptom 'premenstrually' and they all reported one, sometimes more, symptoms at the 'menstrual' phase, though it should be noted that 4 females reported cramps but not one male experienced this.

At least one symptom from the concentration scale affects 9 of the females and 8 of the males 'premenstrually'. Except for two, the females found that their concentration was mildly impaired premenstrually, similarly for the males. 8 out of 10 females and 7 of the males experienced mild concentration deficits 'menstrually'

8 women reported behaviour change in the premenstrual phase. This ranges from a mild degree for 4 females (C, F, G,

and J) to moderate and strong for the others (B, D, H and I). 5 of these women perceived themselves to be less capable and experienced a lower school and / or work performance during this time. This state of affairs did not persist once menstruation commenced and only one female reported a moderate desire to stay at home / in bed. 7 men reported behaviour change of some description. Subjects 1, 2, and 8 appeared to complain fairly consistently across the time period. On the other hand, subjects 9 and 10 presented a different picture as they endorsed many of the behaviour change symptoms to a moderate and strong degree 'premenstrually'. Male 9 still reported a mild need to take naps and stay in bed one week later, but subject 10 no longer rated himself on this symptom scale. Strong and dramatic report of symptoms for males 3 and 6 during the 'menstrual' time period indicate that this was probably due to illness rather than a phase-related mood change.

The autonomic reaction scale detected in this case 4 female subjects who reported mild degrees of nausea and dizziness premenstrually and during menstruation. This is apparently common amongst women prone to dysmenorrhoea. Male subject 9 reported dizziness and nausea 'premenstrually', whilst male 9 experienced nausea which supported my view that these subjects may have been physically ill at this time.

Nearly all female subjects reported symptoms from the water retention scale (9). Experience of these symptoms seemed to be worse premenstrually, becoming moderate and strong for 4 women. One woman (C) showed mild symptomatology premenstrually and continued to do so at menstruation. Alternatively, subject F reported no experience of water retention symptoms premenstrually, but endorsed them to a moderate degree during the menstruum. Only 2 males revealed that skin disorders (2) and weight gain (4) bothered them mildly 'premenstrually'. Male 1 suffered from mild weight gain during the 'menstrual' time phase.

All of the subjects experienced mood changes (as measured by the negative affect scale), although there are vast individual differences as to the extent and magnitude of the changes and their patterns. There was also no

evidence that men, in particular, differed in their mood patterning or the types of mood scale score. 7 of the 10 women reported some degree of negative affect during the premenstruum, in contrast to 9 of the males. 3 of the women rated themselves moderate to strong on several of the negative affect symptoms (B,H and I), and subject E has a strong urge to cry premenstrually. For the men, however, 6 (1,2,3,5,8 and 10) endorsed moderate / strong negative affect symptomatology. During the menstruum there were women who reported symptomatology from the negative affect scale, who did not do so during the premenstruum. This illustrates the dramatic shift that can occur from the premenstruum to the menstrual phase in some women. This did not appear to happen for the men.

A certain number of males indicated increased arousal at specific periods throughout time, but generally males maintained a consistent and high level of arousal, rating most frequently on feeling s of well-being and affection premenstrually, becoming moderate to strong for some.

7 of the women increased sexual desires/drives during menstruation; 3 of these women had not indicated these feelings premenstrually. The question arises as to the expression of these sexual needs (if that is what they are) in those women who experienced menstrual distress. Are these drives generally satisfied or, if left unsatisfied, is the frustration of such drives expressing itself through manifestations in the premenstrual/menstrual disorder ?

The control scale, designed to measure dissimulation, appeared to do this quite well. It reflected the constant complaining of subject B and yet revealed the unusual symptomatology of 'ring in ears' and 'heart pounding' experienced by subject F in the menstrual phase. These symptoms were also rated by subject 10 (M).

Each man's / woman's total distress score on the MDQ was averaged over the two cycles. Mood shifts were examined in terms of each individual's own baseline; the scores were used to group the subjects according to the phase at which they reported their lowest, i.e. most distressed, physically and/or emotionally. Subjects were grouped according to their

pattern of reponse and the results are shown in Table 24. That these reports are relatively stable is shown by the fact that a woman who falls into a premenstrual tension group during the first cycle is most likely to fall into the same group for the second cycle, although there are some exceptions to this. Not every woman experiences exactly the same symptoms and to the same degree each month. This will be shown when I examine in detail each individuals' report ing of symptoms over the two month time period.

Apart from Female F, who had low premenstrual distress, but high menstrual distress, all other women were consistent in that, if they reported certain symptoms premenstrually, these symptoms remained into menstruation and to the same degree of severity whether high or low.

A different pattern emerged for the males which revealed totally different fluctuations. Subjects 3 and 10 had high 'premenstrual distress' and correspondingly high 'menstrual distress'. Their counterpoarts 1, 2 and 4 had low 'premenstrual distress' and low 'menstrual distress'. Another group 5, 6, and 7 experienced low 'premenstrual distress' and high 'menstrual distress', whereas subjects 8 and 9 had the reverse of this and showed high 'premenstrual distress' and low 'menstrual distress'.

These results suggest the existence of several distinct configurations of symptoms. They each only represent a small number of men and cannot by any means be considered stable, although some of them might appear as larger groups in other samples.

The conceptualization of menstrual cycle symptomatology in terms of symptom groups is consistent with previous research (Moos and Leiderman, 1978). It was not the object of this investigation to identify specific symptom groups or subtypes. The finding that the subjects are different is the principal support which this research gives to the symptom subtypes idea. However, if every man and woman were different the subtype notion would be inappropriate: a subtype implies a grouping. In this context it is important to note that in the present study some subjects do, indeed, appear similar in their reported symptomatology. In order to illustrate correspondence.....

between subjects, symptom profiles were constructed for selected individuals.

Fig l compared female A with female F. They experienced a variety of symptoms premenstrually and during menstruation, generally to a mild degree, but they both reported moderate arousal premenstrually and strong arousal during the menstruum. The mild to moderate negative affect, peaking in the menstrual phase, was not matched by a depression in positive mood, so it was possible for a woman to feel pain and emotional distress but affectionate whilst menstruating.

Fig m for males 5 and 9 revealed a very similar pattern. Subject 9 had an elevated pain score for 'premenstrual' and 'menstrual' phases which was reported as general aches and pains.

Fig n presented a contrast of females C and D. Mild concentration deficits are experienced by both. Neither reported negative affect or arousal. Illustration of symptom intensity was shown by the report of mild experience of symptomatology on pain, behaviour change and autonomic reactions, but strong water retention by subject C. D reported strong pain, behaviour change, autonomic reactions and control, but low water retention symptoms.

Fig o compares males 1 and 3 and shows an overall consistency of behaviour over time for each individual. Subject 1 reports feelings of nausea which are consistent from one phase to the next.

Fig p compares male 2, who does not exhibit cyclical mood swings, with male 10, who approximated the classic mood shift for premenstrual tension (negative affect premenstrually and during menstruation).

Although various methods are available for the detection of cycles, several authors have postulated male sexual cycles on the basis of subjective inspection of the data (Manson, 1965; Ismail and harkness, 1967; Corker and Exley, 1968; Anon, 1970; Kihlström), and consequently presented no evaluation of probability of error in reaching their conclusions. I have also analyzed the present data by subjective inspection, but have in addition applied the folding analysis of variance. This analysis is based on

a regression model:

$$Yt = fp\ (t) + \varepsilon t$$

fp (t) is some unknown periodic function and Et is the measurement error on day t which is a random normal deviate with a mean of σ 2 and with Ets independent over days. Under this model it is expected that:

$$Yt = Yt + p = Yt + Zp = \ldots\ldots\ldots$$

for $t = 1,3,5\ldots\ldots\ldots t \leq p$.

If we let Yt = average (Yt, Yt + p, Yt + 2p.....) then one can use the analysis of variance to test the variability among (Y1 Y3 Y5.....) against the variability among (Yt, Yt + p, Yt + 2p, ...) for each t.

The procedure, as formulated, tests for a specified period P. Used in this fashion to test for a periodicity for P = 10, none of the subjects in the 10 had a significant result, as would be expected by chance. This finding suggests that the predominant cycle period is not 10 days. This analysis of variance procedure was then used to search for the best cycle with period between 4 and 30 days. By this method 2 males (7 and 10) were identified to have at least one cycle significant at the 5% level.

The important question whether the cycle length of the male indeed matches that of the female can only be answered in another study in which a greater number are studied for a much longer time span than reported here. Such a study would also yield more information about the stability or regularity of a cycle in any given individual.

The next question that arises is whether the occurrence of physical symptoms (pain, autonomic reactions and water retention) is the reason for the individual's experience of other symptoms. The fact that the subjects without pain etc, nevertheless endorse all kinds of symptoms, although some in low frequency, shows that any of these changes can be experienced without feeling low physically. It is possible that in the case of the individual who complains of strong pain/nausea/water retention symptomatology, this distress causes more negative affect impairments to be felt. Another possibility is that the experience of physical symptoms causes an expression of concern with his/her person as in the case in the person's experience of more psycholog-

ically based symptoms. In this case the difference between the women/men who complain of strong physical symptoms and those who do not could be largely a personality characteristic rather than a difference in the physiological processes of the cycle.

The only associations between menstrual symptoms and the personality factors tested are seen in relation to Neuroticism and Psychoticism as measured by the Eysenck personality Questionnaire. Reported menstrual symptomatology for Neuroticism and Psychoticism is presented in Tables 25 and 26. The Neuroticism and Psychoticism score was added together to see whether the profiles differed with respect to the subject's general emotional stability. The N variable indicates the degree of long term emotional stability, i.e. instability "trait" versus the circumspect premenstrual irritability "state". The N variable is described as high when it exceeds or equals 12 (which approximately represents the extreme quartile).

According to Eysenck (1975) the nature of P (Psychoticism) variable can only be guessed at at the present time in the light of the item content of the various parts of the scale, and the experimental studies carried out. However, it may be useful to try to communicate the peculiar flavour of this personality type. "A high scorer, may be described as being solitary and not caring for people; he is often troublesome, not fitting in anywhere. He may be cruel and inhumane, lacking in feeling and empathy, and altogether insensitive. He is hostile to others, even his own kith and kin, and aggressive even to his loved ones. He has a liking for odd and unusual things, and a disregard for danger; he likes to make fools of other people, and to upset them". (Eysenck, 1975).

In spite of the psychiatric nature of the terms (Neuroticism and Psychoticism) used, and their resemblance to other psychiatric concepts, it must be emphasized that the EPQ deals with normal behaviours which become pathological only in extreme cases. High P is here represented by the extreme quartile of the group. As may be seen from Table 25 Neuroticism is not associated with menstrual pain. Female B has a high N score and a high P score. These scores speak

in favour of regarding this woman as emotionally unstable and probably a 'high reactor', i.e. an individual who easily tends to experience a variety of symptoms to a high degree.

As can be seen from Table 25 we have a large preponderance of low N scorers amongst the females, and a large number of high N scorers amongst the males.

Dysmenorrhoea is experienced by six of the females to a moderate degree. It is maximal on the day the period starts and can last for 2-3 days. Menstrual pain is significantly correlated with irritability and depression.

Eight of the males experience pain symptomatology to a greater degree than women and with more severity. Five of these males have a very high Neuroticism score.

Table 26 shows menstrual symptomatology and Psychoticism. It can be seen that most of the subjects maintain an even balance between Neuroticism and Psychoticism. That is, if they score "high" on Neuroticism, they score "high" on Psychoticism; this works similarly with low scorers. Only five subjects differ from this pattern. Female H and males 8 and 9 are low on N but high on P. Subjects H and 8 recorded pain, irritiability and depression; subject 9 reported pain only. Female J and male 3 scored high on N but low on P. Female J experienced premenstrual irritability and depression, but male 3 recorded symptoms across the pain and negative affect scales.

To discover what specifically characterises the good and poor personalities towards physical symptoms (headaches, backaches, cramps etc) and those without, a qualitative analysis of the responses to certain items on the EPQ was made for each subject. Table 27 lists the selected items.

In order to compliment the graphical representation of scores over the 60 days, brief individual case histories were constructed for each subject. They will be found in the Appendix 2.

Age, marital status, occupation and EPQ scores are given on each sheet.

TABLE 9

BACKGROUND DATA ON TOTAL SAMPLE 10 WOMEN AND 10 MEN

FEMALES

	AGE (YRS)	OCCUPATION	MARITAL STATUS	CHILDREN	CYCLE LENGTH (DAYS)
A	25	Health visitor	M	0	25
B	19	Student nurse	S	0	35
C	33	Lecturer	S	0	30
D	20	Student	S	0	29
E	34	Housewife	M	2	30
F	18	Nurse	S	0	25
G	19	Nurse	S	0	28
H	26	Librarian	M	1	30
I	36	Shop assistant	M	2	29
J	24	Typist	S	0	31

MALES

	AGE (YRS)	OCCUPATION	MARITAL STATUS	CHILDREN
1	27	Teacher	S	0
2	27	Teacher	M	1
3	28	Teacher	S	0
4	22	Student	S	0
5	41	Educational psychologist	D	2
6	30	Occupational therapist	M	2
7	23	Student	S	0
8	27	Bookseller	M	1
9	22	Nurse	S	0
10	23	Social worker	S	0

TABLE 10

MEANS AND STANDARD DEVIATIONS OF THE MENSTRUAL DISTRESS QUESTIONNAIRE TAKEN OVER TWO CYCLES (60 DAYS)

MALES

S	PAIN	CONCEN-TRATION	BEHAVIOUR CHANGE	AUTONOMIC REACTIONS	WATER RETENTION	NEGATIVE AFFECT	AROUSAL	CONTROL
1 $\bar{X}$	8.13	8.60	6.20	4.00	4.08	10.98	5.20	6.00
S.D.	1.80	0.98	1.00	0.00	0.28	1.90	0.25	0.00
2 $\bar{X}$	9.35	11.35	7.10	4.52	4.10	10.65	7.90	6.30
S.D.	3.30	2.20	2.70	1.70	0.00	2.44	1.97	0.00
3 $\bar{X}$	9.70	8.36	5.43	4.10	4.00	10.23	8.28	6.50
S.D.	2.74	1.10	1.58	0.00	0.00	2.65	2.85	1.37
4 $\bar{X}$	7.15	8.80	5.80	4.18	4.23	8.72	10.28	6.02
S.D.	1.26	1.31	0.96	0.52	0.13	0.90	1.92	0.00
5 $\bar{X}$	7.10	10.90	5.55	4.03	4.00	10.73	9.40	6.00
S.D.	1.30	2.50	1.10	0.00	0.00	2.70	1.90	0.00
6 $\bar{X}$	7.56	9.26	6.66	4.03	4.00	11.58	11.18	6.02
S.D.	1.30	1.70	1.60	0.00	0.00	4.10	3.70	0.00
7 $\bar{X}$	7.68	9.15	5.76	4.06	4.00	12.55	8.93	6.03
S.D.	2.20	1.70	1.00	0.00	0.00	2.90	3.30	0.00
8 $\bar{X}$	9.70	9.72	6.38	4.00	4.00	13.56	7.46	6.00
S.D.	1.90	2.40	1.50	0.00	0.00	3.70	2.60	0.00
9 $\bar{X}$	6.63	8.36	5.62	4.16	4.00	8.16	5.03	6.05
S.D.	1.90	1.30	2.20	0.97	0.00	1.50	0.00	0.00
10 $\bar{X}$	8.90	11.33	7.65	4.30	4.55	10.72	9.50	6.95
S.D.	2.30	2.70	2.70	0.65	0.65	2.60	3.20	1.40

TABLE 11

MEANS AND STANDARD DEVIATIONS OF THE MENSTRUAL DISTRESS QUESTIONNAIRE TAKEN OVER TWO CYCLES (60 DAYS)

FEMALES

S	PAIN	CONCEN-TRATION	BEHAVIOUR CHANGE	AUTONOMIC REACTIONS	WATER RETENTION	NEGATIVE AFFECT	AROUSAL	CONTROL
1 $\bar{X}$	7.48	8.40	5.35	4.03	4.36	8.83	7.72	6.00
S.D.	1.70	0.79	0.77	0.00	0.64	1.60	2.30	0.00
2 $\bar{X}$	11.88	12.88	9.05	7.05	8.78	14.93	10.43	9.33
S.D.	3.10	3.40	4.60	2.30	3.32	4.80	3.50	3.50
3 $\bar{X}$	7.48	8.76	5.73	4.10	5.22	8.50	5.16	6.00
S.D.	2.10	1.30	1.70	0.34	1.60	1.05	0.37	0.00
4 $\bar{X}$	7.93	9.60	7.16	4.30	5.40	8.82	5.33	6.12
S.D.	3.00	2.40	4.60	0.85	0.76	1.50	1.00	0.66
5 $\bar{X}$	7.86	8.73	5.40	4.10	4.06	11.38	6.85	6.45
S.D.	1.70	1.20	1.30	0.00	0.00	3.90	1.60	0.69
6 $\bar{X}$	9.10	10.60	7.20	5.13	7.36	9.92	11.15	6.60
S.D.	1.90	2.30	1.70	1.03	1.10	1.70	2.20	0.72
7 $\bar{X}$	7.45	8.62	5.40	4.26	4.50	8.80	6.25	6.10
S.D.	1.30	0.84	0.57	0.60	0.50	1.05	1.80	0.44
8 $\bar{X}$	7.80	9.23	6.52	4.15	4.92	11.12	5.98	6.03
S.D.	2.80	2.50	3.20	0.82	1.40	4.90	1.60	1.97
9 $\bar{X}$	7.63	8.86	6.38	4.26	5.43	10.15	6.70	6.00
S.D.	2.30	1.70	1.90	0.66	1.77	3.40	2.00	0.00
10 $\bar{X}$	8.05	9.05	6.43	4.08	5.32	10.78	5.43	6.02
S.D.	2.90	2.10	2.20	0.00	1.70	3.90	0.84	0.00

TABLE 12

MEANS AND STANDARD DEVIATIONS FOR THE MENSTRUAL DISTRESS QUESTIONNAIRE SCALES IN EACH PHASE OF THE MENSTRUAL CYCLE. CYCLES 1 AND 2

MALES

	PREMENSTRUAL		MENSTRUAL		INTERMENSTRUAL	
	C1	C2	C1	C2	C1	C2
PAIN						
$\bar{X}$	8.42	8.29	8.01	8.08	8.24	8.11
S.D.	3.33	1.67	1.14	1.78	2.39	1.63
CONCENTRATION						
$\bar{X}$	9.45	9.50	9.70	9.90	9.73	10.18
S.D.	1.70	1.34	1.37	1.44	1.44	0.78
BEHAVIOUR CHANGE						
$\bar{X}$	6.17	6.09	6.22	6.26	6.23	6.60
S.D.	1.35	1.01	0.70	1.81	0.68	2.03
AUTONOMIC REACTIONS						
$\bar{X}$	4.11	4.01	4.11	4.12	4.08	4.17
S.D.	0.24	0.03	0.16	0.27	0.22	0.44
WATER RETENTION						
$\bar{X}$	4.19	4.20	4.09	4.05	4.04	4.09
S.D.	0.37	0.47	0.20	0.08	0.08	0.27
NEGATIVE AFFECT						
$\bar{X}$	10.28	11.38	10.26	10.85	11.12	11.07
S.D.	1.39	2.74	1.31	2.68	2.21	2.02
AROUSAL						
$\bar{X}$	8.10	7.63	8.01	8.63	9.12	8.77
S.D.	2.06	2.28	2.02	3.16	3.18	2.33
CONTROL						
$\bar{X}$	6.28	6.03	6.16	6.14	6.27	6.09
S.D.	0.70	0.11	0.52	0.45	0.58	0.23

TABLE 13

MEANS AND STANDARD DEVIATIONS FOR THE MENSTRUAL DISTRESS QUESTIONNAIRE SCALES IN EACH PHASE OF THE MENSTRUAL CYCLE. CYCLES 1 AND 2

FEMALES

	PREMENSTRUAL		MENSTRUAL		INTERMENSTRUAL	
	C1	C2	C1	C2	C1	C2
PAIN						
$\bar{X}$	9.70	9.26	9.17	8.38	7.14	7.12
S.D.	2.40	1.85	1.90	2.22	1.03	0.89
CONCENTRATION						
$\bar{X}$	9.97	10.36	9.74	9.46	8.66	8.71
S.D.	1.81	1.60	2.21	1.82	0.76	0.74
BEHAVIOUR CHANGE						
$\bar{X}$	6.95	7.57	7.48	6.09	5.65	5.77
S.D.	1.90	2.36	4.20	0.95	0.62	0.72
AUTONOMIC REACTIONS						
$\bar{X}$	4.97	4.44	4.72	4.15	4.54	4.25
S.D.	1.82	0.45	1.16	2.32	0.97	0.49
WATER RETENTION						
$\bar{X}$	6.66	6.23	5.84	5.67	4.85	4.75
S.D.	1.82	1.48	1.95	2.03	1.53	1.06
NEGATIVE AFFECT						
$\bar{X}$	11.50	11.93	10.84	9.58	9.65	9.42
S.D.	3.17	3.27	3.42	1.88	2.15	1.32
AROUSAL						
$\bar{X}$	7.60	6.40	7.50	7.09	6.79	6.67
S.D.	2.94	2.12	2.70	2.17	2.21	1.51
CONTROL						
$\bar{X}$	7.12	6.26	6.67	6.46	6.27	6.21
S.D.	2.74	0.32	1.53	1.09	0.68	0.45

TABLE 14

EPQ SCORES RECORDED ON DAY 1 AND DAY 60

MALES

	P	E	N	L
1	6	2	13	7
	4	2	13	8
2	2	18	4	0
	5	16	3	0
3	0	8	18	2
	3	10	18	3
4	3	3	10	9
	4	2	12	9
5	6	5	14	2
	5	4	13	1
6	4	13	10	1
	6	13	13	0
7	2	18	7	6
	1	18	4	9
8	4	11	10	5
	5	11	10	6
9	6	19	3	1
	6	19	0	0
10	10	12	11	7
	10	12	11	6

FEMALES

	P	E	N	L
A	2	10	9	1
	2	9	9	2
B	4	14	14	6
	4	10	18	6
C	2	8	8	4
	2	10	10	3
D	2	12	8	3
	2	12	8	2
E	4	10	18	6
	4	12	15	0
F	1	17	5	3
	2	19	5	5
G	2	20	4	9
	0	20	4	9
H	5	15	6	1
	7	14	8	1
I	3	18	10	0
	2	20	10	0
J	2	10	20	4
	1	12	17	2

TABLE 15

CORRELATIONS BETWEEN DAY 1 AND DAY 60
EYSENCK PERSONALITY QUESTIONNAIRE

	P	E	N	L
MALES (10)	.79	.98	.95	.95
FEMALES (10)	.85	.88	.92	.70
TOTAL	.81	.96	.92	.84

Difference between 0.95 and 0.70 male/female lie scores is NOT significant at 5%

0.70 F correlation is significant at P 0.05

0.92 F correlation is significant at P 0.001

The biggest difference to be found is between the two Lie score correlations for Men and Women separately. Using the Formula from Ferguson (1966) (187-8) to compute Z (Table transformation Er to Z r);-

$$Z = \frac{1.783 - 0.877}{\sqrt{\left(\frac{1}{10-3}\right)+\left(\frac{1}{10-3}\right)}} = \frac{0.906}{0.2857} = 1.69$$

TABLE 16

CORRELATIONS BETWEEN CYCLE 1 AND CYCLE 2 MDQ SCORES

MALES	PAIN	CONC	BC	AR	WR	NA	AROUSAL	CONTROL
1	0.069	0.780*	0.140	0.000	-0.540	-0.360	0.210	0.000
2	0.090	-0.130	-0.200	-0.400	-0.480	-0.680*	-0.120	0.160
3	0.290	0.000	-0.940*	0.000	0.000	-0.090	0.850*	0.230
4	0.320	0.910*	0.170	0.500	-0.920*	-0.370	0.850*	0.000
5	-0.090	-0.480	0.029	0.000	0.000	0.300	0.940*	0.000
6	0.210	0.470	0.410	0.000	0.000	0.760*	0.540	0.330
7	0.000	0.660*	-0.860*	0.000	0.000	0.860*	0.430	0.000
8	-0.040	0.240	0.890*	0.000	0.000	-0.930*	0.980*	0.000
9	0.110	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	-0.080	0.690*	-0.970*	-0.060	0.470	-0.160	0.160	0.890*

FEMALES	PAIN	CONC	BC	AR	WR	NA	AROUSAL	CONTROL
1 a	0.990*	0.000	0.860*	0.000	0.990*	-0.360	-0.990*	0.000
2 b	-0.071	-0.430	-0.470	-0.500	-0.008	0.750*	0.800*	0.590
3 c	0.760*	-0.330	-0.430	0.330	0.930*	-0.980*	0.340	0.000
4 d	0.730*	0.110	0.980*	0.000	0.650*	0.090	0.000	0.980*
5 e	0.680*	0.970*	-0.070	0.000	1.000	0.920*	-0.280	0.920*
6 f	0.840*	0.050	0.970*	0.740*	0.930*	0.650*	0.990*	0.770*
7 g	-0.220	0.970*	0.990*	-0.990	0.000	0.110	0.990*	1.000
8 h	0.250	0.970*	0.970*	0.000	0.950*	0.840*	0.180	0.380
9 i	0.880*	-0.050	0.660*	0.500	0.970*	0.900*	0.940*	0.000
10 j	0.990*	0.990*	0.920*	0.000	0.950*	0.790*	0.990*	0.000

*significant at 5% level

TABLE 17

SIGNIFICANT SYMPTOM SCALE CORRELATIONS BETWEEN CYCLE 1 AND CYCLE 2 ON THE MENSTRUAL DISTRESS QUESTIONNAIRE

MALES		FEMALES	
1	Concentration	A	Pain, Behaviour change, Water retention, Arousal
2	Negative affect (-correlation)	B	Negative affect, Arousal
3	Behaviour change(-correlation) Arousal	C	Pain, Water retention, Negative affect (-correlation)
4	Concentration, Water retention (-correlation) Arousal	D	Pain, Behaviour change, Water retention, Control
5	Arousal	E	Pain, Concentration, Negative affect, Control
6	Negative affect	F	Pain, Behaviour change, Autonomic reactions, Water retention, Negative affect, Arousal, Control
7	Concentration, Behaviour change(-correlation)	G	Concentration, Behaviour change, Autonomic reactions(-correlation) Arousal, Control
8	Behaviour change, Negative affect (-correlation) Arousal	H	Concentration, Behaviour change, Water retention, Negative affect
9	No correlations	I	Pain, Behaviour change, Water retention, Negative affect, Arousal
10	Concentration, Behaviour change(-correlation) Control	J	Pain, Concentration, Behaviour change, Water retention, Negative affect, Arousal

TABLE 18

REPORTED SYMPTOMS OF MENSTRUAL DISTRESS DURING PREMENSTRUAL AND MENSTRUAL PHASES FOR 8 SYMPTOM SCALES ON THE MENSTRUAL DISTRESS QUESTIONNAIRE

FEMALES

	PREMENSTRUAL			MENSTRUAL		
PAIN	MILD	MODERATE	STRONG	MILD	MODERATE	STRONG
Muscle stiffness	A, E, F, G, I		D	F, I		A
Headache	B, C, D		H	F	H	D, I
Cramps	C		D	C, E	H	I
Backache	C, D, I			B, I		
Fatique	C, E, I	F, G, H	B, D	A, D, F	C, E, G	B, I
G. aches & pains	E, I	B, F, H	D	B, E, F	D, H	G
CONCENTRATION						
Insomnia	B, F, I			G, H	F	
Forgetfulness	B, G			B, G		
Confusion	B					
Lowered judgement	B, I			C, E, F	B, I	
Difficulty concentrating	C, E, F, G, H	B		C, F, H, I		B
Distractible	C, E, H	I		C, I		B
Accident prone	C	I		C, I		
Clumsy	B, C, D, E	I		B, C, I		
BEHAVIOUR CHANGE						
Lowered school/work performance	C, F, I	B	I	B		
Take naps						
stay in bed	G	H	D	D, H, I	B	
Stay at home			D	D, H, I	B	
Avoid social activities	B	I	D	B, D		
Less capable	C, H, I	I	D	B		

TABLE 19

FEMALES

	PREMENSTRUAL			MENSTRUAL		
AUTONOMIC REACTIONS	MILD	MODERATE	STRONG	MILD	MODERATE	STRONG
Dizziness/ faintness	F			B, F	I	
Cold sweats		D				
Nausea	D, F, I			E, F	C, I	
Hot flushes						B
WATER RETENTION						
Weight gain	C	E	B, H	C	B, F, H	
Skin disorders	C, D, E, G, I	E	B	B, C, D, I	F	
Painful breasts	A	I	B, H	B, F	H, I	
Swelling	C, E	I	B, H	B, C, F	H	I
NEGATIVE AFFECT						
Crying	F, I		B, E	A, E, G, H	I	
Loneliness	E	I	B	A	B	
Anxiety	B	H, I			A, E	B
Restlessness	B, F, G	H		F, H	B, I	
Irritability	E, F, I	B	H	A, C	B, E, H, I	
Mood swings	B, E, F, H, I			F	B	
Depression	E, F	B		A	B	
Tension	F	I	B, H	A, E, F	B, H, I	I

TABLE 20

FEMALES

PRIMENSTRUAL				MENSTRUAL		
AROUSAL	MILD	MODERATE	STRONG	MILD	MODERATE	STRONG
Affectionate	E, F, H	A, G		C, E, I	F, I	A
Orderliness		F	G	F	B	
Excitement	G	A		B	F, I	A
Feelings of well being	F	A, G		B		A, F
Bursts of energy				B	F	
CONTROL						
Feelings of suffocation	B			B		
Chest pains						
Ringing in ears		B		F		
Heart pounding		B		B, F		
Numbness/ tingling		B				B
Blind spots/ fuzzy vision		B				

TABLE 21

REPORTED SYMPTOMS OF MENSTRUAL DISTRESS DURING PREMENSTRUAL AND MENSTRUAL PHASES FOR 8 SYMPTOM SCALES ON THE MENSTRUAL DISTRESS QUESTIONNAIRE

MALES

	PREMENSTRUAL			MENSTRUAL		
PAIN	MILD	MODERATE	STRONG	MILD	MODERATE	STRONG
Muscle stiffness	2,4,6,7	1,8,10	3	1,4,8,10	6,7	9
Headache	3	1	9	1,3,8,10	2,6	
Cramps		8				
Backache	2,3,6,10	8	8	1,10	1,3,6	7
Fatigue	1,2	3,4,7	9,10	7,2,4	5,6,8,10	3
G. aches & pains	2,3,6	10	9	8	6,7	3,9
CONCENTRATION						
Insomnia	1,5,7,8,9			1,2,7,8	5,6	10
Forgetfulness	2,4,8			1,2		7
Confusion	1,2,4,7,8,10			10		7
Lowered judgement	2,4	8,10		2,8		
Difficulty concentrating	1,4,7,8		10	1,2,8	5	
Distractible	4,7,8,10			2,8	5	
Accident prone	8					
Clumsy	4,8				6	
BEHAVIOUR CHANGE						
Lowered school/work performance	1,7		8,9,10	1,2	6,8	
Take naps						
stay in bed	1,7,8	10	9	2,4,8,9	6	
Stay at home	1,2		9	1,2		3
Avoid social activities	1,2	4,9,10			6	3
Less capable	1	4,8	10	1,8		3

TABLE 22

MALES

	PREMENSTRUAL			MENSTRUAL		
AUTONOMIC REACTIONS	MILD	MODERATE	STRONG	MILD	MODERATE	STRONG
Dizziness/ faintness		9				
Cold sweats						
Nausea	9				3	
Hot flushes						
WATER RETENTION						
Weight gain	2			1		
Skin disorders	4					
Painful breasts						
Swelling						
NEGATIVE AFFECT						
Crying				7		
Loneliness	7					7
Anxiety	6,7	8	3	8	6,10	7
Restlessness	1,5,6,7,8	3,10		2,5,8	1,6,10	
Irritability	6,8	2,3	5	1,2,5,8	1,6	
Mood swings	1,4	1,2,3	5	1,2,8	5,6	
Depression	1,10	1,2,3		1,5	1,3,7	
Tension	6,10		3	5,8	7	

TABLE 23

MALES

	PREMENSTRUAL			MENSTRUAL		
AROUSAL	MILD	MODERATE	STRONG	MILD	MODERATE	STRONG
Affectionate	1,7	6,10	4,5	2,4,7,8	5,6,10	4
Orderliness		6,10		2,4,10	6,8	
Excitement	2,6	10	7	8	4,7,10	
Feelings of well being	2,6,7	4,8,10			4,8,10	
Bursts of energy	3,6	7,10	4		10	8
CONTROL						
Feelings of suffocation	1					
Chest pains						
Ringing in ears	10					
Heart pounding				10		
Numbness/ tingling						
Blind spots/ fuzzy vision						

TABLE 24

SUBJECTS (MALES AND FEMALES) REPORTING HIGH PREMENSTRUAL DISTRESS (HPMD) AND LOW PREMENSTRUAL DISTRESS (LPMD) HIGH MENSTRUAL DISTRESS (HMD) AND LOW MENSTRUAL DISTRESS (LMD)

FEMALES

HPMD	LPMD
B	A
D	C
H	E
J	F
	G
	I

MALES

HPMD	LPMD
3	1
8	2
9	4
10	5
	6
	7

HMD	LMD
B	A
D	C
F	E
H	G
J	I

HMD	LMD
3	1
5	2
6	4
7	8
10	9

TABLE 25

REPORTED MENSTRUAL SYMPTOMATOLOGY & NEUROTICISM

FEMALES	LOW NEUROTICISM 12	HIGH NEUROTICISM 12
Dysmenorrhea	A, F, G, H, I	B
Premenstrual irritability	A, C, D, F, G, H, I	B, I
Premenstrual depression	A, F, H	B, E, I
MALES		
Pain	4, 8, 9	1, 3, 5, 6, 10
Irritability	2, 7, 8	1, 3, 5, 6, 10
Depression	2, 7, 8	1, 3, 5, 6, 10

TABLE 26

REPORTED MENSTRUAL SYMPTOMATOLOGY & PSYCHOTICISM

FEMALES	LOW PSYCHOTICISM 4	HIGH PSYCHOTICISM 4
Dysmenorrhea	A, F, G, I	B, H
Premenstrual irritability	A, C, D, F, G, I, J	B, H
Premenstrual depression	A, F, I	B, E, H
MALES		
Pain	3, 4	1, 5, 6, 9, 10
Irritability	2, 3, 7	1, 5, 6, 8, 10
Depression	2, 3, 7	1, 5, 6, 8, 10

TABLE 27

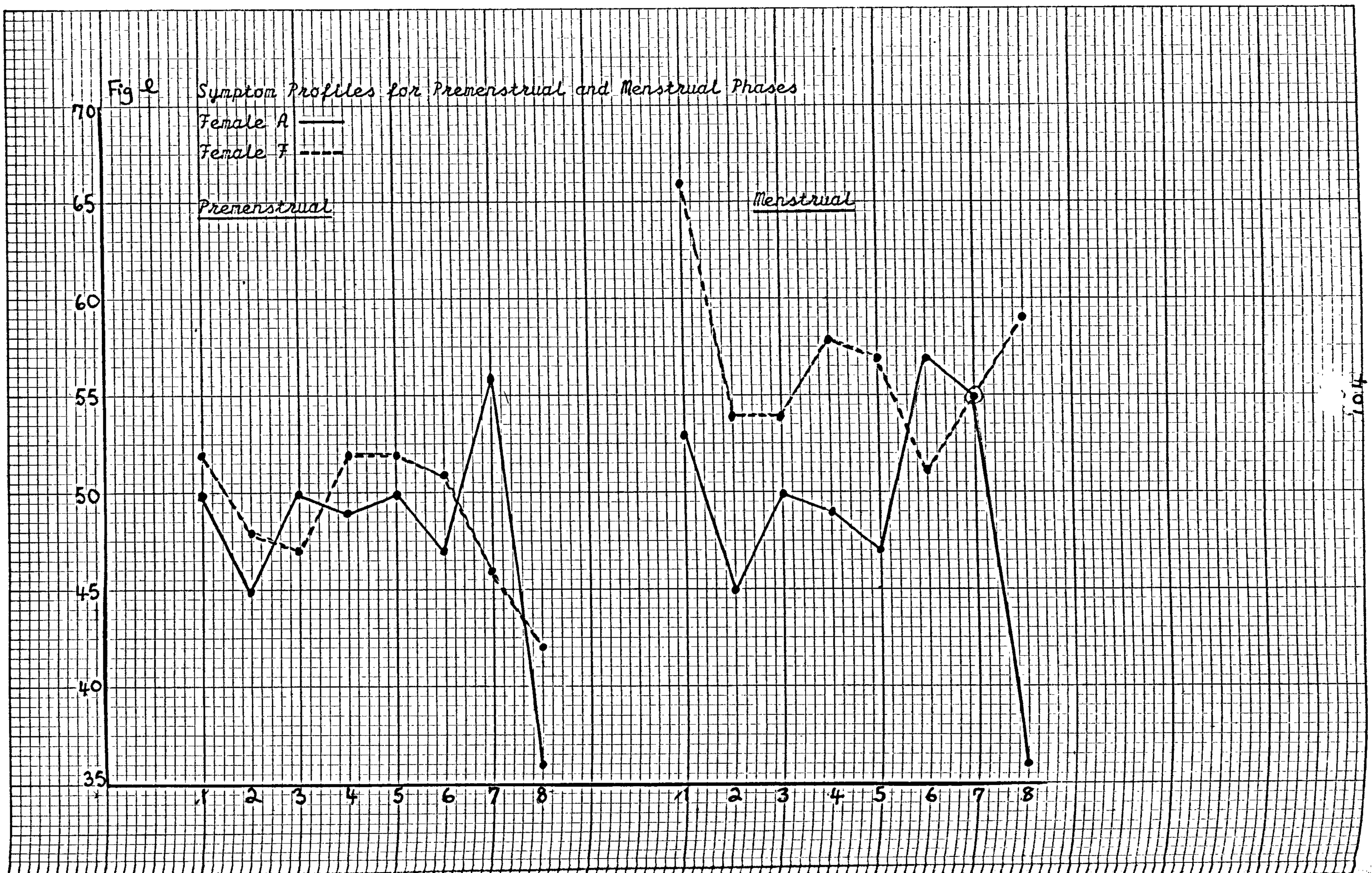
EPQ Items that indicate Emotional Maladjustment

Item No.	
3.	Does your mood ever go up and down ?
7.	Do you ever feel "just miserable" for no reason ?
15.	Are you an irritable person ?
19.	Are your feelings easily hurt ?
31.	Would you call yourself a nervous person ?
38.	Do you worry about the awful things that might happen?
41.	Would you call yourself tense and "highly strung" ?
72.	Do you worry too long after an embarrassing experience ?
75.	Do you suffer from nerves ?
77.	Do you feel lonely ?

Fig 2 Symptom Profiles for Premenstrual and Menstrual Phases

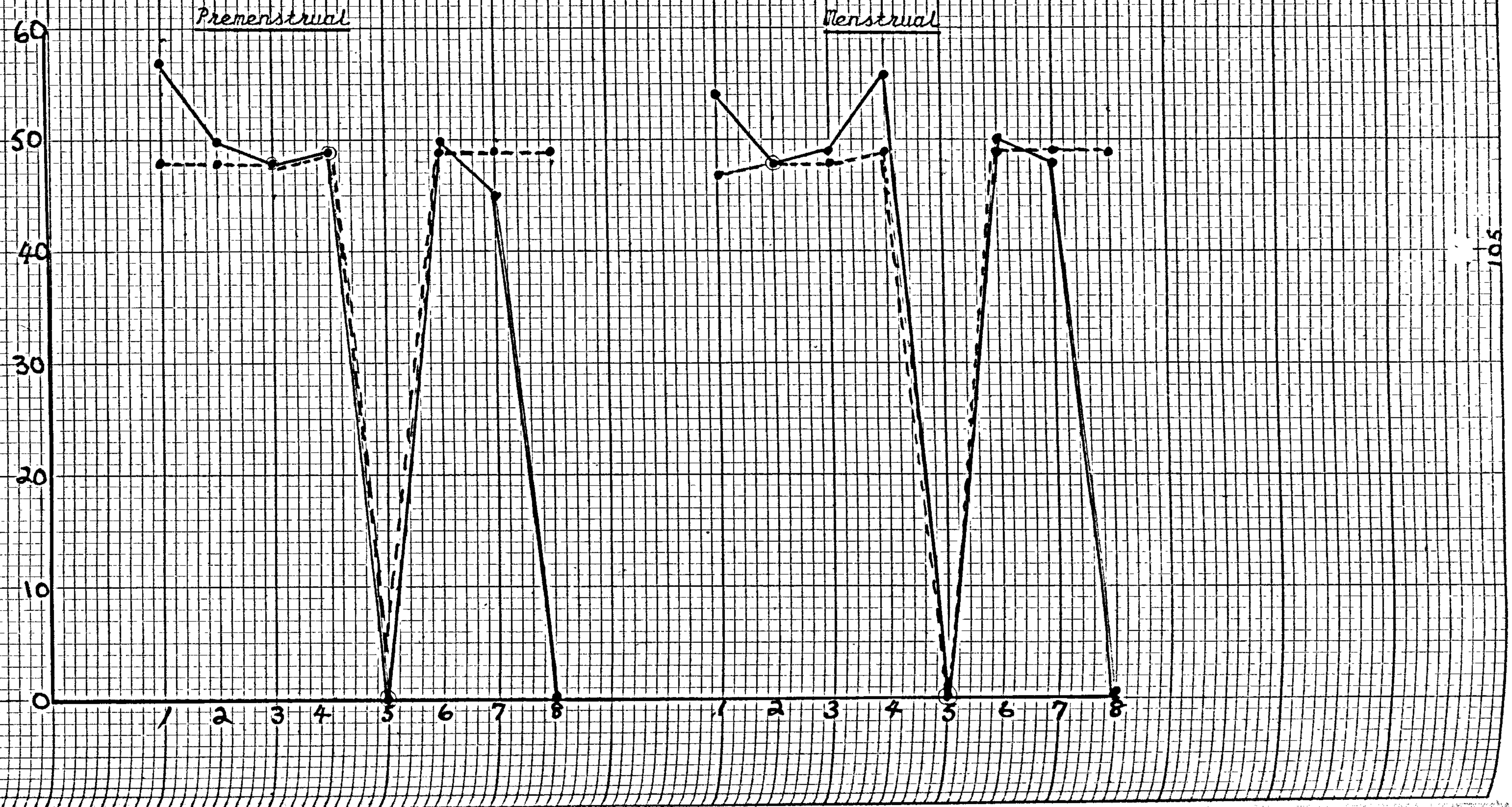
Female A ——

Female F ----



Symptom Profiles for Premenstrual and Menstrual Phases Fig 3

Male 5 ---
Male 9 ——



Symptom Profiles for the Premenstrual and Menstrual Phases Fig n

Female C ——
Female D - - -

Premenstrual

Menstrual

65
60
55
50
45
40
35

1 2 3 4 5 6 7 8

1 2 3 4 5 6 7 8

106

Symptom Profiles for the Premenstrual and Menstrual Phases Fig 0

Male 1 ——
Male 3 2 - -

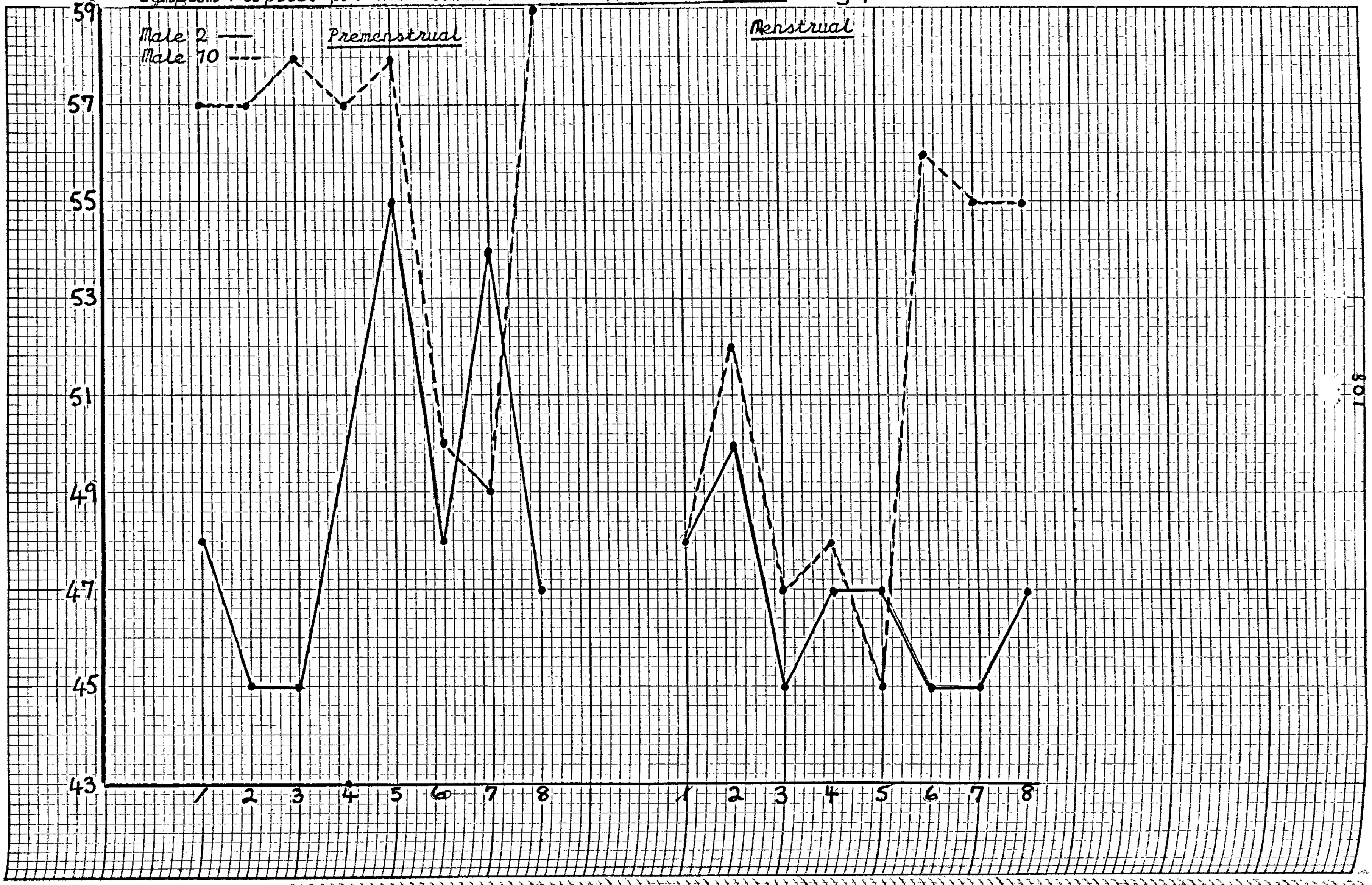
Premenstrual

Menstrual

60
50
40
30
20
10
0

1 2 3 4 5 6 7 8 1 2 3 4 5 6 7 8

Symptom Profiles for the Premenstrual and Menstrual Phases Fig P



Symptom Profiles for Premenstrual and Menstrual Phases Fig 1

Male ?

Female ?

Premenstrual

Menstual

65
60
50
40
30
20
10
0

1 2 3 4 5 6 7 8 1 2 3 4 5 6 7 8

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DISCUSSION

Any investigator engaged in menstrual cycle research has probably been impressed by the complexity and difficulty of generating sound research on the menstrual cycle. Although increasing methodological sophistication and feminist perspectives have combined to promote more thorough and complex studies in recent years, the present day researcher continues to be faced with a challenging dilemma. No matter how thoughtfully the variables for study are chosen, no matter how adequately particular variables are measured and no matter how sophisticated the analytic techniques are applied, a perplexing difficulty remains:- menstrual cycle variables are inherently interactive or interrelated.

This complexity presents numerous problems for the design of studies on the menstrual cycle. Precise measurement of physiological and / or psychological variables relevant to menstruation may interfere with concealing from respondents the study's focus on the menstrual cycle. This will be discussed again later.

Cycle phases across a sample are not likely to be equal, and cycle lengths may vary considerably both within and between subjects. For these reasons it was decided for this study to collect daily reports of mood over a substantial period of time.

The methods used to obtain subjects and the way in which they were utilized may have injected a bias in that a true sampling of individuals may not have been obtained, but rather a sampling of men and women who for various personal and/or psychological reasons were interested and willing to participate in the study. The small number of subjects obtained shows just how few. Even financial inducement could not persuade more people to apply in order to take part in a questionnaire study which required a certain amount of commitment for 60 days. This throws some light onto the 'grey area' of recruitment for studies such as these. On the other hand, the voluntary nature of the participation in the studies described, indicated an interest by the subjects in the experiments, and seemed to lead to the reasonable

assumption that the subjects who did participate would more honestly and willingly express their feelings about the questions asked. It was also hoped that such capitalization on the interest and voluntary nature of the work would result in a high return of the questionnaires. This proved to be the case.

A major issue in both the retrospective and daily studies that I have reported is the ethical situation involved in providing subjects with incomplete information regarding study intent. There was no effort to deceive my subjects but simply an avoidance of direct reference to menstruation. Dates of the menstrual period are required on the Menstrual Distress Questionnaire for the females and in all probability the women would have guessed the nature of the study. However, some researchers have recently concluded that the "informed consent code" (American Psychological Association; 1973) makes results from many experiments dubious. Since demand effect is a major problem in much of the premenstrual syndrome literature, the present investigator opted for providing less specific information to the subjects at the beginning of the two studies she carried out. The second study may have been more meaningful if a third group of subjects had been added who were fully informed as to the study intent.

One of the primary objectives of this investigation was to test the sensitivity and precision of the modified Form T of the Menstrual Distress Questionnaire.

The questionnaire has high internal consistency but test-retest reliability is low when used once a week over a complete cycle. Several factors are implicated here. Firstly, because of the difficulty involved in detecting phases, the likelihood of pinpointing the premenstrual or the intermenstrual phase exactly for every subject was remote. Consequently many of the subjects report a "no experience of symptom" on some scales where at another time in their cycle, they may have endorsed symptoms more strongly.

Secondly, Form T measures the 'here and Now3 experience of symptoms, The daily fluctuations of feelings and emotions do not readily lend themselves to measurement on a weekly basis. So one would not expect a high correlation between one testing and the next. Form T can be given daily over a

period of time to assess the severity/incidence/ and change of symptomatology. It should not be used on an ad hoc basis.

Thirdly, when analyses were carried out within groups between different cycle phases they were nonsignificant, indicating that males, who did not know the purpose of the questionnaire report a higher degree of symptomatology than females who were also naive, but would probably have guessed the nature of the questionnaire. These results have indicated in the first study, that Form T of the MDQ did not significantly differentiate between subjects in the different menstrual cycle phases and should not be used for that purpose.

When the daily scores are taken from Form T and averaged for each individual and <u>then</u> examined for each phase, a totally different picture emerges. For the females premenstrual and menstrual means differed from the post-menstrual and intermenstrual means on the pain, concentration, behaviour change, negative affect and arousal scales of the MDQ. None of the inter-phase means reached significance for the males.

The two scales which received the least endorsement throughout were autonomic reactions and control, with no significant difference discernible. But 4 women did experience symptoms from this scale premenstrually and during menstuation, so it is not entirely unknown. Once again , this shows the need to look at the individual's experience of symptoms. So, Form T of the MDQ is internally consistent and can differentiate between males and females, consequently, emotional and even behavioural changes could be related to the cyclic pattern of hormonal activity and to the discreet changes of hormone supply during the menstrual cycle. We know much less than we would like about the ways in which sex hormones affect women, but we know still less about the ways in which male hormones influence male feelings and actions. Enough is known, however, to say that the pattern of hormone production is different for males than females and that this contributes to sexual differences in physical and emotional experience as well as differnces in behaviour. Men, as far as we know, experience no cyclic alterations comparable to the menstrual cycle and there is no physiological male menopause.

The differences between the males' and the females' report of symptomatology become more apparent as we proceed through the findings of this study. Correlations between cycles 1 and 2 for the 8 symptom scales of the MDQ show a statistical significance for the pain, behaviour change, water retention and negative affect scales. This indicates that for the most part symptoms that are reported in cycle 1 will have a good chance of appearing in cycle 2. There are very few correlations between cycle 1 and 2 for the males and many more negative correlations which indicates experience of symptoms in one cycle but not the other.

Reported symptomatology for females is more stable and with only two negative correlations throughout, this suggests that, on the whole, women tend to complain of consistent symptomatology from one menstrual cycle to the next. Of course, one would need to conduct further research over a much longer time span to establish this finding.

By looking at the incidence/prevalence and severity of reported premenstrual and menstrual distress one again finds evidence which distinguishes the sexes. On the pain scale all females endorse at least one symptom from it. All but one of the males report pain of some description - usually 'general aches and pains' but not one report of 'cramps' which is quite a common feminine complaint at certain times of the cycle.

Fifty percent of the females perceived themselves to be less capable during late premenstruum, early menstruation, and only one female felt strongly affected and this was during the menstrual phase.

This, of course, expresses only the subjects' evaluation of her efficiency. It is interesting that the majority of males frequently endorsed symptoms from the concentration scale. Recent studies have demonstrated that there is no impairment of cognition or motor performance during the premenstrual and menstrual phases of the cycle, (Golub, b; 1976; Rodin, 1976; Parlee, 1973; Sommer, 1972, 1973). Golub researching into sex differences in attitudes and beliefs regarding menstruation found significant sex differences. She found that men were less knowledgeable about menstruation

and they were more likely to believe that menstruation is painful and that it affects womens' thinking processes. The negative attitudes found among male subjects in this study are consistent with Parlee's (1974) finding that males attribute more severe menstrual symptoms to women than do women themselves when completing a Menstrual Distress Questionnaire. The greater knowledgeability of the women studied may be due to the factual information to which they have been exposed in womens' studies, books, magazines and other media, as well as their own experiences.

The women, in Parlee's study, however, were not free of stereotypic thinking about menstruation. They shared with the men the misconceptions about impaired function.
On the basis of the incidence of studies cited it could be proposed that MDQs might appropriately be conceptualized not as accurate self-reports but as measures of stereotypes about the psychological concomitants of menstruation in a group of naive individuals.

In the present investigation the MDQ certainly did not elicit stereotyped beliefs about menstruation in the first study. Correlational analysis of retrospective reports of symptomatology suggest the need for reconsideration of the popular notion of menstrual stereotypes as a reasonable explanation of differences observed. It is more likely that the daily self-report may measure experience that is "real" in the sense that it is what women normally experience when their beliefs about menstruation have not been made usually salient.

Also, women in the longitudinal study were asked every day if they had experienced a period within the previous 7 days or were expecting one in the coming 7 days. Not all women who say they are about to menstruate experienced negative symptoms. Not all women who say they will menstruate within 7 days, do so, and they do not necessarily report a lower positive mood because they are expecting a period.

As part of this reconceptualization it may be necessary to reconsider some of the assumptions and methodological traditions that have led investigators to look only for premenstrual increases in negative moods in women who know

they are participating in a study of the menstrual cycle. Rather than continuing to rely on such methods and assumptions, research is needed that takes into account the psychological effects, not only of the menstrual cycle, but also of other physiological rhythms possibly having different periods, as well as the social-psychological context within which the bodily changes are experienced and given meaning for the individual. Little systematic effort, for example, has been directed toward the study of affective consequences of other rather ordinary physiological "events" such as colds, back-aches and headaches experienced apart from the menstrual cycle.

There may be some substantial degree of correspondence across women in observable or measurable physiological changes which occur with the menstrual cycle. However, the nature of the affective experiences associated with the cycle varied considerably across women. The women in this study were fairly consistent in their report of symptoms. The women who have discomfort premenstrually in the first cycle are more likely to report similar symptoms in the second cycle. Apart from one female, who experiences minimal premenstrual discomfort and high menstrual distress, all the other females in the study group report symptoms in the premenstruum AND the menstruum to a greater or lesser extent.

A different picture emerges for the males, the extent of interindividual variability is large and consequently it is difficult to form any distinct pattern. Two men experience/ reported a high level of discomfort for long periods of time. Similarly, three men had a fairly low level of symptom report formed another group. Another three males had a low time span when a minimal amount of symptomatology was noticed followed by a period of moderate to strong distress. And then there are two males who had the reverse of this, namely, high distress state, followed by relative calm. These patterns are reflected quite nicely in the symptom profiles and once again high-light the individual pattern of response.

Research on menstrually related mood change has had as its primary focus the determination of the bases for this affective change, including a variety of physiological explanations, (Koppel et al, 1969, Little and Zahn, 1974). Almost all of this research has had its beginnings in the observations of

statistically significant differences between subjects' mood measurements taken at various phases of the menstrual cycle. As has been the case with many other studies of human behaviour, researchers have attempted to discover THE underlying factor associated with these differences. In almost all these instances the result has been the postulation of a nearly direct causal relationship between specific physiological processes and mood changes. Little concern has been given to more complex intervening events or mechanisms of change. It is particularly interesting that this continues in spite of research beginning with that of Schacter and Singer, (1962) which would cast doubt on the existence of a direct simple correspondence between specific affects and measurable physiological states.

Individual patterns of response will always be with us, but there is no doubt, also, some degree of correspondence across women in observable and/or measurable changes which would occur with the menstrual cycle. Indeed, I hope the MDQ will prove an invaluable tool for this purpose. But women are living their lives apart from their menstrual cycles, for some women - in spite of their menstrual cycles. They are coping with other life events which must also affect their patterns of responding.

It is highly likely that biological and environmental factors interact to produce the patterns of mood and behaviour sometimes observed during premenstrual and menstrual phases of the cycle and the writer would question the "obviousness" of the two current alternatives which have received the most attention: (a) that biology alone explains premenstrual and menstrual distress, mood and behaviour, and (b) that there is no consistent pattern of mood and behaviour to be explained, (Parlee, 1974; Ruble, 1977).

From a psychological perspective then the menstrual cycle needs to be understood both in the relatively limited context of other behavioural and biological cycles in the individual and in the larger context of bilogical, sociological and psychological changes over time.

Traditionally we have tended to view the study of the menstrual cycle as largely a descriptive undertaking. This implies that behaviours, moods, and even cycle phases and

hormone levels can be arranged somewhere along a continuum of normality - abnormality. Since the context in which these behaviours and moods, cycle phases and hormone levels occur is regularly ignored these variables come to take on an aura of inherent normality or abnormality (Maitland-Schilling, 1978).

Closely related is the implication that women who suffer from menstrual difficulties have neurotic tendencies or that neurotic women are predisposed to premenstrual tension.

In this study it was found that subjects without premenstrual distress are slightly less neurotic than the average man or woman in the sample. As in the case with premenstrual pain, the subjects without menstrual pain have somewhat more stable EPQ scores than those with mild discomfort. From these differences in the EPQ scores it could be concluded that women who do not complain of premenstrual or menstrual distress not only are less conscious of cyclic symptomatology but also are emotionally more stable than the avarage and that complaints of strong/severe distress is indicative of a greater concern (even awareness) with periodic changes as well as a lack of emotional stability.

To find out what characterises specifically personalities of those people who have a tendency toward physical symptoms (headaches, backaches, cramps etc.,) and those without, a qualitative analysis of the responses to certain items on the EPQ was made for each subject.

Firstly, not one subject is completely free from pain symptoms. The question is one of degree:

Secondly, both men and women who are without moderate to strong physical symptoms are <u>generally</u> free from depressed feelings etc., as shown by their response to items (3,.7, 23;) they show a better than average emotional balance, (15,19,77) are lower in certain aspects of inadequacy feeling, (72) have less tendency to withdraw from reality (38) and most of all, consider themselves emotionally stable (31,41, 75).

The total picture of the woman who does not complain of menstrual distress in terms of physical symptomatology, is thus that of the person who appears emotionally well balanced, and in particular, does not easily react with

depression or show emotional or bodily symptoms of strain.

The picture offerred by the subjects who complain of moderate to strong physical distress is in many ways just the opposite. The woman here has frequent spells of moodiness, feels miserable often , considers herself a nervous person, and gets upset easily. In addition to these items, women who have moderate to severe menstrual distress have a tendency to reply in the affirmative to the question "Do you often feel lonely ?" From my sample there are five women in this group, only one of which has an abnormally high Neuroticism score.

A high proportion of males in the study have high Neuroticism scores, four of which have a tendency to complain on a physical as well as on an emotional basis.

The observed correlations between physiological symptomatology and mood/personality dimensions of anxiety, irritability and depression and the differences observed in reported symptoms are by no means surprising, and these findings could probably be characterised as too obvious to warrant investigation. However, it is important to note several separate issues related to these findings.

Firstly, they are too tempered by differential response patterns across women and men, and it is important not to form too early a conclusion about the effects of physical experience any more readily than about emotional experience related to menstrual phenomena.

Examination of the responses for individual subjects reveals a similar pattern of inconsistency across subjects' response charts. As noted, some subjects evidenced strong relationships between Neuroticism variables and physiological/ psychological variables as measured by the MDQ , and others evidenced no such relationships. Secondly, the sample size was very small and the EPQ was completed on two occasions only. It remains for future researchers to design a study which will explain individual variations more fully and replicate the investigation with the addition of an ongoing 'personality monitor' running parallel to a physiological/psychological programme of observation. This may help to untangle the complex biologic, social and psychological influences that affect mood state and behaviour.

More work is also needed to explore what fluctuations

exist in the extent to which age contributes to the relationship between mood, personality and behaviour by studying pre and post menarcheal girls and pre and post-menopausal women. Indeed, the list is not exhaustive; working with parous and nulliparous women, sterilized and those having hysterectomies, as well as those suffering from sexual problems (i.e. vaginismus, frigidity) would go a long way in fulfilling the need which still exists for an accurate specification of the behaviour that appears to correlate with the menstrual cycle.

The assumption that the menstrual cycle represents an "independent" variable which may "cause" or "explain" variance in the independent measures of moods, behaviours and symptoms is a deeply ingrained tenet of the medical-psychiatric approach to menstrual cycle research. The underlying biological variables (e.g. Hormone fluctuations) that menstrual cycle phases are assumed to reflect have typically been viewed as "harder" and more basic variables than moods or behaviours induced by other non-menstrual factors.

It is possible, even likely, that individuals may vary in the extent to which they exhibit cycles in particular moods and in the relative importance of various causal influences as determinants of their psychological states. Such suggestions lack the simplicity of the notion that the menstrual cycle causes "changes in moods" and the related assumptions that individual moods need not be specified and that other causal factors and rhythms with other periods can be disregarded.

Moreover, there is considerable evidence that the menstrual cycle can be influenced by exogenous factors which might be collectively labelled as "stress" (Osofsky and Fisher, 1967; Russell, 1972). It provides an alternative to the traditional view that biology "explains" these behaviours by implicating situational variables as influences or suggests that both the behaviours in question and the phase of the cycle are responsible. Stress, in this view, would "cause" both behaviour and biological state by influencing cycle length (Parlee, 1976; Koeske, 1980). Unfortunately, questions concerning the characteristics of cycles occurring during times of stress (e.g. length, degree or pattern of associative symptomatology, typical physiological parameters) have not been raised in such cross-sectional studies, so it has usually been impossible to evaluate this alternative hypothesis directly.

Future

studies should contain at least some suggestive information on actual cycle characteristics.

Finally, thoughtful consideration and sound research are needed to avoid the pitfalls and hidden assumptions of the "biology-is-destiny" argument about women's behaviour. To suggest that biology may, under certain circumstances, have an influence on behaviour is not identical to saying that behaviour is reducable to biologic variables. It suggests that men and women as groups may bring to bear on their life roles different sets of skills and values that cannot be greatly categorised as "better" or "worse". Appreciation and utilization of these differences, not denial of them, should become a more respectable stance for workers in this field of research.

From the psychologist's point of view, the aim of interdisciplinary research on the menstrual cycle is to explore ways in which biological, psychological, and cultural factors interact to determine women's experiences and behaviour. Various disciplines have traditionally focused on different aspects of these interactions. The biologist tends to emphasise the physiological variables, the sociologist and the anthropologist focus on sociocultural factors, and the psychologist examines the way the individual's past and present interactions with the environment determine behaviour and experience. The differences in emphasis resulting from these different perspectives have sometimes been misinterpreted as competing frameworks for explaining the same phenomenon . There is every reason to think that bodily states, cultural beliefs and individual histories all play roles in determining behaviour and experience, and hypotheses about how variables at one level operate in no way exclude or disconfirm hypotheses about the effects of variables at other levels.

Similarly, there are a great many gaps in our information about the psychological concomitants of the menstrual cycle itself. Once again the determinants of individual and subcultural differences in experience over the course of the menstrual cycle may indeed, need to be considered more seriously than they have been in the past. Paige's (1973)

Data suggesting differences in self-reporting of menstrual symptoms among women with Catholic, Protestant and Jewish backgrounds, for example, pose an intriguing problem for any theoretical explanations of the psychological aspects of menstruation. We should perhaps look further for such individual and subcultural differences among women before we become too enthusiastic about some general theory of the "psychology of menstruation" without attempting to specify for which women and under what circumstances the theory is true.

This is not to say that general theories about the psychological aspects of the menstrual cycle should not be pursued. Some of the most important work on the psychology of the menstrual cycle is the type described by Koeske (1980) and Maitland-Schilling (1979) for example. They are exploring the attributional processes through which altered bodily states acquire psychological meaning for the individual in the context of her total life situation. This work is theoretical in an explicit way, and appears to represent the beginnings of a paradigm that will fill major gaps in existing psychological research on the menstrual cycle.

In addition to research directed towards theory construction, we need to gather descriptive data on the relationship between behaviour associated with menstruation and other cyclic behaviours. For example, we need to know how behavioural and emotional cycles associated with the menstrual cycle are related to psychological rhythms associated with the day, week, month and year. This view is strongly held by Parlee who is currently working in this context.

One of the findings from the present research is that men experience <u>some sort of</u> mood cycle. This is an important area of study and should not be forgotten when we look at the menstrual cycle in relation to the individual. McClintock's (1971) research on menstrual synchrony points to the natural assumption that a man living with a woman, could, in time, parallel her cyclic changes in mood and behaviour. Whatever the physiological mechanisms producing psychological changes over the course of the menstrual cycle, research is needed to provide some context within which to describe such

psychological changes and assess their relative significance in the totality of a woman's and a man's experience and behaviour.

CONCLUSIONS 4:4

The revised Form T of the Menstrual Distress Questionnaire shows promise as a quantitative tool capable of measuring mood/physiological change during the menstrual cycle. However, more information needs to be gathered from a large group of women over a longer period of time for continual refinement of the questionnaire especially to test its reliability.

Form T appears not to deteriorate over time and is internally consistent, indicating that it is suitable for use in longitudinal investigations providing it is used on a daily basis. Form T can be appropriately applied and completed by males with only slight alterations.

It is clear that women do consistently experience different degrees and types of symptoms and that these can, and do, vary from cycle to cycle. Some women are aware of their coming menstrual period, others are not. This casts doubt on the idea that menstrual symptomatology can be explained on the basis of stereotypic responses. It also points to the need for future researchers to draw information gathered from individual and group differences, and to include qualitative as well as quantitative data e.g. case histories and longitudinal investigations.

Research is needed that takes into account the psychological effects not only of the menstrual cycle but of other physiological rhythms, possibly having different periods, as well as the social-psychological context within which the bodily changes are experienced and given meaning for the individual.

It is very apparent from this research that males also show mood changes, and that these changes may also be cyclical and that they may also be related in part to cyclical variations their female partners may or may not be experiencing.

Women who suffer from moderate to severe premenstrual and/or menstrual distress may show mood/behavioural change in everyday life which may well affect husbands, children and friends. Very little information is available on the possible syncronization of physiological, emotional and behavioural patterns associated with men and women living together and their effect on children.

Of pertinence is the development and use of appropriate self-monitoring equipment, such as the Menstrual Distress

Questionnaire, for the early detection of menstrual related difficulties and the determination of appropriate biological markers useful in determining treatment and management of the problem.

Just as important is the transfer of knowledge already available for early detection, such as the establishment of an educational and informational organization for premenstrual tension and menstrual distress to disseminate material and give guidance to women sufferers. Realistic means must be devised of reaching and educating the general population. Patient education must be the goal of therapy.

There is some evidence relating severe menstrual distress to the lack of emotional stability. Women who do not complain of premenstrual and/or menstrual distress not only are less conscious of cyclic symptomatology but appear more emotionally stable (as measured by the Eysenck Personality Questionnaire), and complaints of strong/severe distress is indicative of a greater concern with periodic changes as well as a lack of emotional stability. This finding is based on a very small number of people and would require verification using a much larger sample. The relevance of this finding lies in the possibility of studying intensively symptom prone groups of women utilizing an on-going personality monitor running parallel to a psychological/physiological programme of observation.

If, as a number of investigators have shown, women's reports of menstrual related symptomatology are influenced by attitudes, beliefs and expectations concerning menstruation, the development of these attitudes and beliefs must occur very early- at the time of menarche, possibly before. Parental attitudes, maternal experience and socio-cultural beliefs must influence the preparation for menarche for daughters and for sons. More work is needed to explore the extent to which age and preparation for menstruation contributes to the relationship between mood, personality and behaviour by studying pre and post-menarcheal girls and pre and post-menopausal women.

Finally, in this context, any gynaecological event in the life of a woman (birth, hysterectomy, sexual disorder) will no doubt have a profound effect on her menstrual cycle and as such should be taken into consideration.

APPENDIX 1

1. Means and Standard Deviations for the MDQ scales in each phase of the Menstrual Cycle. Cycles 1 & 2.

2. Total MDQ scores over 60 day period. Males and Females.

3. MDQ scores (T) for 8 symptom scales over 2 cycles. Males and Females.

4. Case Studies. (Males and Females).

TABLE A1

MEANS AND STANDARD DEVIATIONS FOR THE MENSTRUAL DISTRESS QUESTIONNAIRE SCALES IN EACH PHASE OF THE MENSTRUAL CYCLE. CYCLE 1 AND 2

FEMALES

	PREMENSTRUAL		MENSTRUAL		INTERMENSTRUAL	
	C1	C2	C1	C2	C1	C2
PAIN						
A	7.50	7.37	7.87	10.33	6.57	6.85
B	13.12	11.25	12.00	13.50	9.42	9.28
C	7.25	11.14	7.57	8.32	6.42	6.14
D	12.42	8.00	7.85	6.00	6.57	7.28
E	7.71	7.42	9.28	7.85	8.14	7.00
F	9.85	9.42	12.28	9.28	7.57	7.85
G	7.71	7.14	8.35	8.00	7.57	7.00
H	9.00	11.71	9.71	6.71	6.42	6.57
I	9.85	8.14	10.28	7.40	6.28	6.42
J	12.57	11.00	6.57	6.42	6.42	6.85
TOTAL	96.98	92.59	91.76	83.81	71.38	71.24
$\bar{X}$	9.698	9.259	9.176	8.381	7.138	7.124
S.D.	2.400	1.850	1.900	2.220	1.030	0.890

TABLE A2

MEANS AND STANDARD DEVIATIONS FOR THE MENSTRUAL DISTRESS QUESTIONNAIRE SCALES IN EACH PHASE OF THE MENSTRUAL CYCLE. CYCLE 1 AND 2

FEMALES

	PREMENSTRUAL		MENSTRUAL		INTERMENSTRUAL	
CONC	C1	C2	C1	C2	C1	C2
A	8.00	8,50	8.00	9.00	8.00	8.42
B	13.25	11.00	15.00	14.25	9.62	10.00
C	8.25	10.85	9.71	8.32	8.00	8.14
D	9.42	10.14	8.00	9.20	9.28	8.85
E	9.57	9.28	9.28	9.28	8.14	8.00
F	12.85	12.00	11.57	10.57	10.14	8.85
G	8.71	8.71	8.57	8.71	8.71	8.14
H	10.00	13.71	8.42	8.14	8.14	8.57
I	9.00	9.28	10.71	8.40	8.14	8.14
J	10.71	10.14	8.14	8.71	8.42	10.00
TOTAL	99.76	103.61	97.40	94.58	86.59	87.11
$\bar{X}$	9.976	.10.361	9.740	9.458	8.659	8.711
S.D.	1.810	1.600	2.210	1.820	0.760	0.740

TABLE A3

MEANS AND STANDARD DEVIATIONS FOR THE MENSTRUAL DISTRESS QUESTIONNAIRE SCALES IN EACH PHASE OF THE MENSTRUAL CYCLE. CYCLE 1 AND 2

FEMALES

	PREMENSTRUAL		MENSTRUAL		INTERMENSTRUAL	
	C1	C2	C1	C2	C1	C2
BC						
A	5.12	5.37	5.12	6.60	5.00	5.42
B	10.12	6.12	19.12	7.75	6.28	6.14
C	5.00	9.00	5.57	5.66	5.00	5.14
D	8.14	8.00	6.00	5.80	5.28	6.71
E	5.00	5.28	6.71	5.14	5.14	5.00
F	6.57	8.00	7.85	7.71	7.00	7.00
G	5.28	5.42	5.14	5.57	5.85	5.00
H	6.71	13.14	5.85	5.42	5.57	5.42
I	8.27	7.71	7.57	5.40	5.71	5.57
J	9.28	7.71	5.85	5.85	5.71	6.28
TOTAL	69.49	75.75	74.78	60.90	56.54	57.68
$\bar{X}$	6.949	7.575	7.478	6.090	5.654	5.768
S.D.	1.900	2.360	4.200	0.950	0.620	0.720

TABLE A4

MEANS AND STANDARD DEVIATIONS FOR THE MENSTRUAL DISTRESS QUESTIONNAIRE SCALES IN EACH PHASE OF THE MENSTRUAL CYCLE. CYCLE 1 AND 2

FEMALES

	PREMENSTRUAL		MENSTRUAL		INTERMENSTRUAL	
	C1	C2	C1	C2	C1	C2
AR						
A	4.00	4.00	4.00	4.00	4.00	4.00
B	9.87	5.00	7.50	7.62	6.85	4.85
C	4.12	4.00	4.42	4.00	4.00	4.00
D	5.50	4.28	4.00	4.00	4.00	4.28
E	4.14	4.00	4.42	4.00	5.28	4.00
F	5.52	4.71	6.00	5.57	4.00	5.42
G	4.14	4.14	4.00	4.14	5.28	4.00
H	4.00	5.28	4.00	4.00	4.00	4.00
I	4.42	4.57	4.85	4.00	4.00	4.00
J	4.00	4.42	4.00	4.28	4.00	4.00
TOTAL	49.71	44.40	47.19	41.47	45.41	42.55
$\bar{X}$	4.971	4.440	4.719	4.147	4.541	4.255
S.D.	1.820	0.450	1.160	2.320	0.970	0.490

TABLE A5

MEANS AND STANDARD DEVIATIONS FOR THE MENSTRUAL DISTRESS QUESTIONNAIRE SCALES IN EACH PHASE OF THE MENSTRUAL CYCLE. CYCLE 1 AND 2

FEMALES

	PREMENSTRUAL		MENSTRUAL		INTERMENSTRUAL	
	C1	C2	C1	C2	C1	C2
WR						
A	5.00	4.75	5.00	5.20	4.00	4.00
B	10.37	6.50	10.12	10.62	8.71	4.57
C	7.00	8.00	5.57	4.83	4.00	4.00
D	5.42	5.42	5.00	5.20	5.28	5.14
E	4.14	4.14	4.00	4.00	4.00	4.00
F	7.57	7.85	8.14	7.71	6.14	6.57
G	5.28	4.42	4.42	4.42	4.00	4.42
H	6.42	6.28	5.42	4.71	4.14	4.14
I	7.57	7.14	6.57	5.80	4.00	4.00
J	7.85	7.85	4.14	4.28	4.28	6.71
TOTAL	66.60	62.35	58.38	56.77	48.55	47.55
X	6.660	6.235	5.838	5.677	4.855	4.755
S.D.	1.820	1.480	1.950	2.030	1.530	1.060

TABLE A6

MEANS AND STANDARD DEVIATIONS FOR THE MENSTRUAL DISTRESS QUESTIONNAIRE SCALES IN EACH PHASE OF THE MENSTRUAL CYCLE. CYCLE 1 AND 2

FEMALES

	PREMENSTRUAL		MENSTRUAL		INTERMENSTRUAL	
	C1	C2	C1	C2	C1	C2
NA						
A	8.37	10.00	10.00	8.40	8.00	8.14
B	16.50	14.12	19.87	13.37	14.42	10.71
C	8.14	10.00	8.14	8.16	8.14	8.57
D	8.71	9.00	8.00	8.60	8.28	8.71
E	10.14	12.71	10.42	12.71	12.42	10.14
F	10.57	8.25	10.14	9.71	10.42	8.85
G	9.14	8.57	9.28	8.85	8.71	8.71
H	14.85	17.00	11.57	8.71	8.71	9.42
I	12.85	13.00	11.85	9.00	8.42	8.57
J	15.42	16.71	9.14	8.28	9.00	12.42
TOTAL	114.69	119.36	108.41	95.79	96.52	94.24
$\bar{X}$	11.469	11.936	10.840	9.579	9.652	9.424
S.D.	3.170	3.270	3.420	1.880	2.150	1.320

TABLE A7

MEANS AND STANDARD DEVIATIONS FOR THE MENSTRUAL DISTRESS QUESTIONNAIRE SCALES IN EACH PHASE OF THE MENSTRUAL CYCLE. CYCLE 1 AND 2

FEMALES

	PREMENSTRUAL		MENSTRUAL		INTERMENSTRUAL	
	C1	C2	C1	C2	C1	C2
AROUSAL						
A	9.25	6.12	8.87	6.80	7.42	7.57
B	13.25	8.50	11.87	8.62	12.00	6.85
C	5.12	5.00	5.28	5.00	5.00	5.28
D	5.00	5.57	5.00	5.80	5.28	5.57
E	6.71	5.57	6.42	8.71	6.42	7.42
F	10.42	11.71	12.28	12.00	9.14	10.14
G	10.14	5.14	7.57	5.28	5.57	5.00
H	5.42	5.85	5.00	6.28	5.28	7.00
I	5.55	5.28	6.85	7.20	5.71	5.85
J	5.14	5.28	5.85	5.28	6.14	6.00
TOTAL	76.00	64.02	74.99	70.97	67.96	66.68
$\bar{X}$	7.600	6.402	7.499	7.097	6.796	6.668
S.D.	2.940	2.120	2.700	2.170	2.210	1.510

TABLE A8

MEANS AND STANDARD DEVIATIONS FOR THE MENSTRUAL DISTRESS QUESTIONNAIRE SCALES IN EACH PHASE OF THE MENSTRUAL CYCLE. CYCLE 1 AND 2

FEMALES

	PREMENSTRUAL		MENSTRUAL		INTERMENSTRUAL	
	C1	C2	C1	C2	C1	C2
CONTROL						
A	6.00	6.00	6.00	6.00	6.00	6.00
B	14.71	6.50	10.87	9.50	8.14	7.00
C	6.00	6.00	6.00	6.00	6.00	6.00
D	8.00	6.00	6.00	6.00	6.00	6.00
E	6.00	6.85	6.57	6.42	6.57	7.14
F	6.42	6.71	7.28	6.71	6.00	6.00
G	6.14	6.14	6.00	6.00	6.00	6.00
H	6.00	6.28	6.00	6.00	6.00	6.00
J	6.00	6.00	6.00	6.00	6.00	6.00
I	6.00	6.14	6.00	6.00	6.00	6.00
TOTAL	71.27	62.62	66.72	64.63	62.71	62.14
X	7.127	6.262	6.672	6.463	6.271	6.214
S.D.	2.740	0.320	1.530	1.090	0.680	0.450

TABLE B1

MEANS AND STANDARD DEVIATIONS FOR THE MENSTRUAL DISTRESS QUESTIONNAIRE SCALES IN EACH PHASE OF THE MENSTRUAL CYCLE. CYCLE 1 AND 2

MALES

	PREMENSTRUAL		MENSTRUAL		INTERMENSTRUAL	
	C1	C2	C1	C2	C1	C2
PAIN						
1	9.75	8.00	6.87	8.35	6.55	10.14
2	7.12	10.50	7.62	10.75	9.14	8.00
3	11.00	10.62	9.75	9.75	9.00	8.00
4	11.12	8.00	7.00	7.00	6.00	6.71
5	8.25	6.23	8.13	7.00	6.43	6.00
6	7.12	8.62	8.75	7.25	7.00	7.14
7	7.12	6.62	9.37	6.25	10.57	6.00
8	10.00	9.75	8.00	10.87	12.27	10.14
9	6.25	6.00	6.10	6.00	6.00	9.42
10	10.50	8.62	8.50	7.62	9.42	9.57
TOTAL	84.23	82.96	80.09	80.84	82.38	81.12
$\bar{X}$	8.423	8.296	8.009	8.084	8.238	8.112
S.D.	3.330	1.670	1.140	1.780	2.390	1.630

TABLE B2

MEANS AND STANDARD DEVIATIONS FOR THE MENSTRUAL DISTRESS QUESTIONNAIRE SCALES IN EACH PHASE OF THE MENSTRUAL CYCLE. CYCLE 1 AND 2

MALES

	PREMENSTRUAL		MENSTRUAL		INTERMENSTRUAL	
	C1	C2	C1	C2	C1	C2
CONC						
1	8.12	8.25	8.75	8.62	8.42	9.42
2	10.25	10.75	11.37	12.12	11.71	11.28
3	8.00	8.00	8.00	8.00	11.71	11.28
4	9.25	9.00	9.00	8.50	8.71	8.42
5	11.00	11.63	11.63	11.50	11.57	10.29
6	8.75	11.37	9.12	9.37	8.71	8.57
7	9.37	9.12	9.80	10.62	8.28	8.42
8	8.37	9.62	10.00	10.75	9.57	11.57
9	8.00	8.00	8.00	8.62	8.00	10.28
10	13.38	9.25	11.37	10.87	10.50	11.28
TOTAL	94.49	94.99	97.04	98.97	97.28	101.81
$\bar{X}$	9.449	9.449	9.704	9.897	9.728	10.181
S.D.	1.700	1.340	1.370	1.440	1.440	0.780

TABLE B3

MEANS AND STANDARD DEVIATIONS FOR THE MENSTRUAL DISTRESS QUESTIONNAIRE SCALES IN EACH PHASE OF THE MENSTRUAL CYCLE. CYCLE 1 AND 2

MALES

	PREMENSTRUAL		MENSTRUAL		INTERMENSTRUAL	
	C1	C2	C1	C2	C1	C2
BC						
1	5.75	6.00	5.85	6.37	6.71	7.00
2	5.85	6.37	6.12	8.12	6.42	5.85
3	6.00	5.00	6.62	5.37	6.42	5.85
4	5.87	5.75	5.87	6.25	5.28	5.71
5	5.38	5.25	5.50	5.63	6.00	6.00
6	5.75	8.00	7.25	7.12	6.28	6.28
7	5.87	5.50	6.25	5.00	6.28	5.14
8	6.37	6.87	6.75	6.25	6.42	6.28
9	5.00	5.00	5.00	5.10	5.00	9.85
10	9.87	7.25	7.00	7.37	7.42	8.00
TOTAL	61.73	60.99	62.21	62.58	62.23	65.96
$\bar{X}$	6.173	6.099	6.221	6.258	6.233	6.596
S.D.	1.350	1.010	0.700	1.810	0.680	2.030

TABLE B4

MEANS AND STANDARD DEVIATIONS FOR THE MENSTRUAL DISTRESS QUESTIONNAIRE SCALES IN EACH PHASE OF THE MENSTRUAL CYCLE. CYCLE 1 AND 2

MALES

	PREMENSTRUAL		MENSTRUAL		INTERMENSTRUAL	
	C1	C2	C1	C2	C1	C2
AR						
1	4.00	4.00	4.00	4.00	4.00	4.00
2	4.00	4.10	4.00	4.87	4.00	4.00
3	4.00	4.00	4.25	4.00	4.00	4.00
4	4.25	4.00	4.50	4.00	4.14	4.14
5	4.00	4.00	4.13	4.13	4.00	4.00
6	4.00	4.00	4.00	4.00	4.00	4.00
7	4.12	4.00	4.12	4.00	4.00	4.00
8	4.00	4.00	4.00	4.00	4.00	4.00
9	4.00	4.00	4.00	4.00	4.00	5.42
10	4.75	4.00	4.10	4.25	4.71	4.14
TOTALS	41.12	40.10	40.10	41.25	40.85	41.70
$\bar{X}$	4.112	4.010	4.010	4.125	4.085	4.170
S.D.	0.240	0.030	0.160	0.270	0.220	0.440

TABLE B5

MEANS AND STANDARD DEVIATIONS FOR THE MENSTRUAL DISTRESS QUESTIONNAIRE SCALES IN EACH PHASE OF THE MENSTRUAL CYCLE. CYCLE 1 AND 2

MALES

	PREMENSTRUAL		MENSTRUAL		INTERMENSTRUAL	
	C1	C2	C1	C2	C1	C2
WR						
1	4.00	4.00	4.00	4.12	4.14	4.00
2	4.25	4.35	4.00	4.12	4.00	4.00
3	4.00	4.00	4.00	4.00	4.00	4.00
4	4.50	4.12	4.62	4.00	4.00	4.10
5	4.00	4.00	4.00	4.00	4.00	4.00
6	4.00	4.00	4.00	4.00	4.00	4.00
7	4.00	4.00	4.00	4.00	4.00	4.00
8	4.00	4.00	4.00	4.00	4.00	4.00
9	4.00	4.00	4.00	4.00	4.00	4.00
10	5.12	5.50	4.25	4.25	4.25	4.85
TOTAL	41.87	41.97	40.87	40.49	40.39	40.95
X	4.187	4.197	4.087	4.049	4.039	4.095
S.D.	0.370	0.470	0.200	0.080	0.080	0.270

TABLE B6

MEANS AND STANDARD DEVIATIONS FOR THE MENSTRUAL DISTRESS QUESTIONNAIRE SCALES IN EACH PHASE OF THE MENSTRUAL CYCLE. CYCLE 1 AND 2

MALES

	PREMENSTRUAL		MENSTRUAL		INTERMENSTRUAL	
	C1	C2	C1	C2	C1	C2
NA						
1	11.37	11.25	9.25	10.37	11.85	13.42
2	10.12	11.25	9.37	10.25	11.00	11.14
3	11.37	10.12	9.50	9.62	11.00	11.14
4	8.37	9.00	8.75	8.75	8.57	8.85
5	10.50	10.00	10.88	10.50	11.43	10.57
6	9.62	17.00	10.75	9.75	13.28	10.28
7	10.25	12.25	12.37	15.25	12.14	12.57
8	12.62	15.12	11.37	16.25	15.14	14.71
9	8.00	8.62	8.00	8.37	8.00	8.10
10	10.62	9.25	12.37	9.37	8.85	10.00
TOTAL	102.84	113.86	102.61	108.48	111.26	110.78
X	10.284	11.386	10.261	10.848	11.126	11.078
S.D.	1.390	2.740	1.310	2.680	2.210	2.020

TABLE B7

MEANS AND STANDARD DEVIATIONS FOR THE MENSTRUAL DISTRESS QUESTIONNAIRE SCALES IN EACH PHASE OF THE MENSTRUAL CYCLE. CYCLE 1 AND 2

MALES

	PREMENSTRUAL		MENSTRUAL		INTERMENSTRUAL	
	C1	C2	C1	C2	C1	C2
AROUSAL						
1	5.12	5.00	6.00	5.12	5.00	5.00
2	8.75	6.62	6.75	8.00	8.71	10.00
3	8.00	7.12	6.25	10.62	8.71	10.00
4	9.87	8.87	10.37	10.25	11.57	10.85
5	8.50	9.88	9.00	9.34	9.86	8.57
6	11.50	11.87	9.62	14.12	10.42	12.00
7	8.87	7.50	8.00	8.25	10.28	10.00
8	6.37	6.25	8.00	5.87	10.14	8.57
9	5.00	5.00	5.00	5.25	5.00	5.00
10	9.00	8.25	11.12	9.50	11.57	7.71
TOTAL	80.98	76.36	80.11	86.32	91.26	87.70
$\bar{X}$	8.098	7.636	8.011	8.632	9.126	8.770
S.D.	2.060	2.280	2.020	3.160	3.180	2.330

TABLE B8

MEANS AND STANDARD DEVIATIONS FOR THE MENSTRUAL DISTRESS QUESTIONNAIRE SCALES IN EACH PHASE OF THE MENSTRUAL CYCLE. CYCLE 1 AND 2

MALES

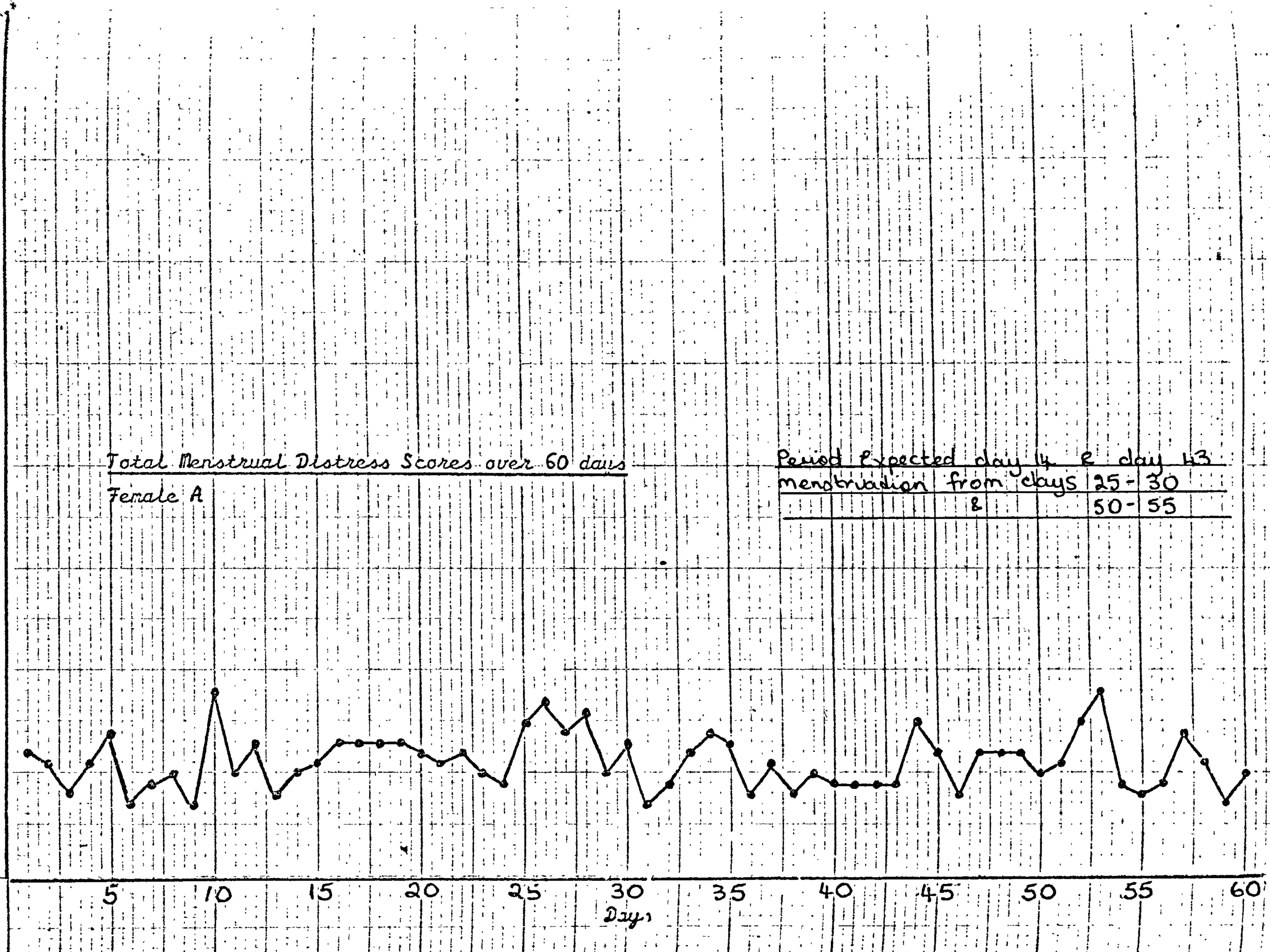
	PREMENSTRUAL		MENSTRUAL		INTERMENSTRUAL	
	C1	C2	C1	C2	C1	C2
CONTROL						
1	6.00	6.00	6.00	6.00	6.00	6.00
2	6.00	6.00	6.00	6.00	6.57	6.00
3	6.25	6.00	6.00	6.00	7.83	6.00
4	6.12	6.00	6.00	6.00	6,00	6.00
5	6.00	6.00	6.00	6.00	6.00	6.00
6	6.00	6.00	6.00	6.00	6.00	6.00
7	6.25	6.00	6.00	6.00	6.00	6.00
8	6.00	6.00	6.00	6.00	6.00	6.00
9	6.00	6.00	6.00	6.00	6.00	6.25
10	8.25	6.37	7.62	7.42	6.28	6.71
TOTAL	62.87	60.37	61.62	61.42	62.68	60.96
X	6.287	6.037	6.162	6.142	6.268	6.096
S.D.	0.700	0.110	0.520	0.450	0.580	0.230

Total Menstrual Distress Scores over 60 days

Female A

Period Expected day 14 & day 43

menstruation	from days	25 - 30
	&	50 - 55



Female B

PE —— M days 1 – 6
PE day 37 M days 42 - 47

126
116
106
96
86
76
66
56
46

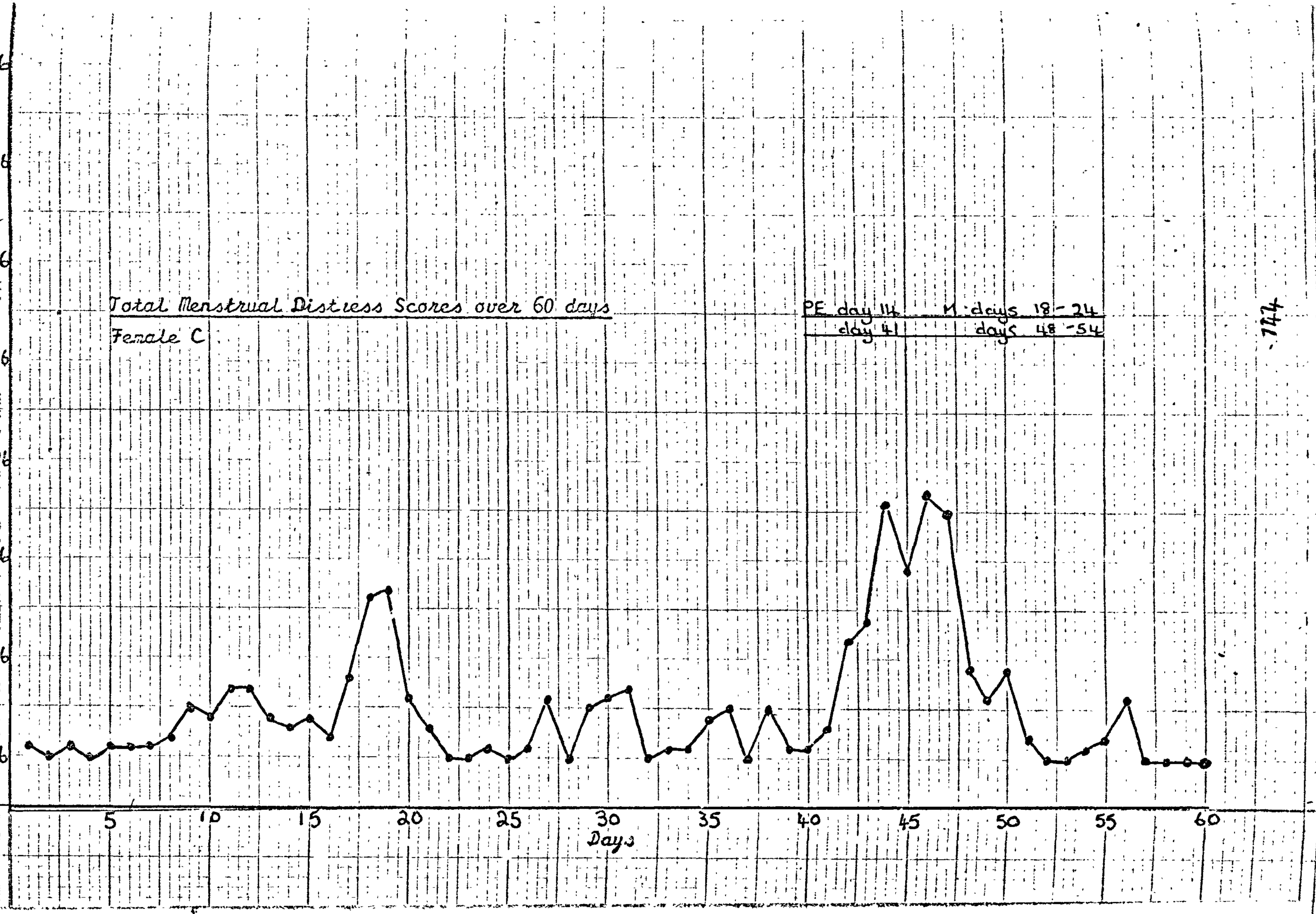
5 10 15 20 25 30 35 40 45 50 55 60
days

143

Total Menstrual Distress Scores over 60 days

Female C

PE day 14 M days 18-24
day 41 days 48-54



Total Menstrual Distress Scores over 60 days

Female D

PE day 6
day 42

M days 21-27
days 50-55

116
106
96
86
76
66
56
46

5 10 15 20 25 30 35 40 45 50 55 60

Days

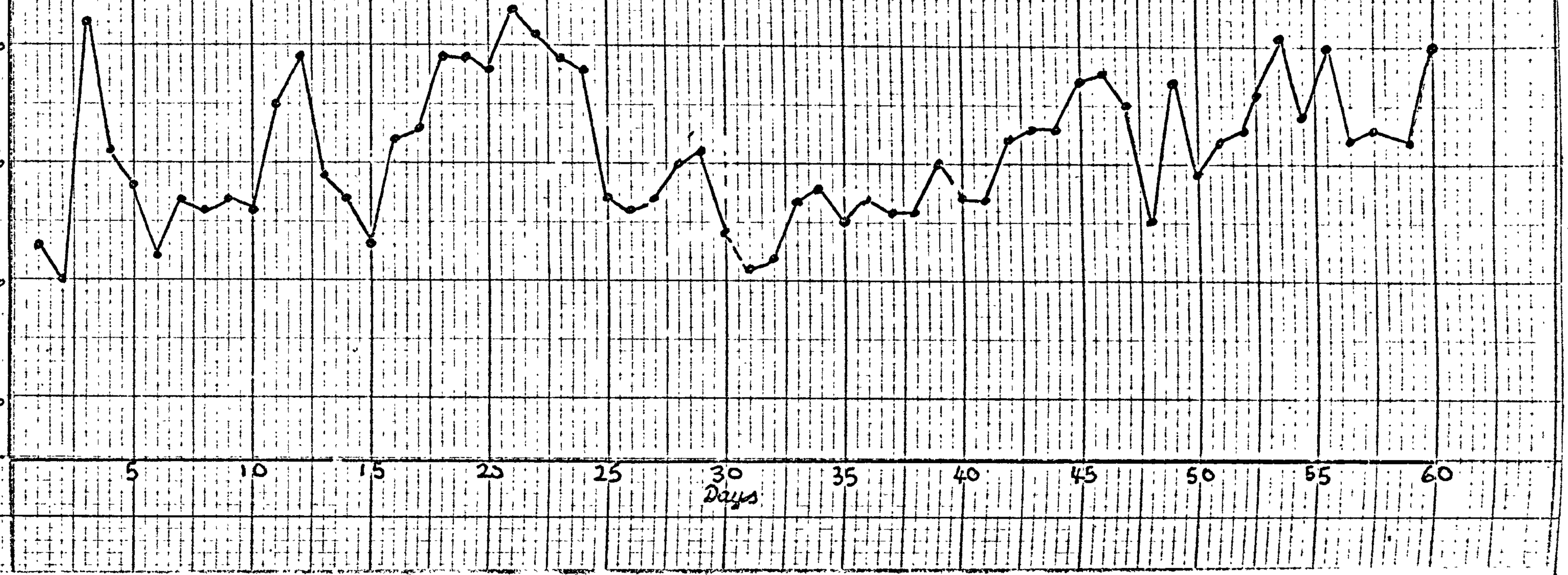
145


Total Menstrual Distress Scores over 60 days
Female E
PE day 8 M days 11-17
day 34 days 41-47
126
116
106
96
86
76
66
56
46
5
10
15
20
25
30
35
40
45
50
55
60
Days

Total Menstrual Distress Scores over 60 days

Female F

PE day 9 M days 18-25
day 39 days 42-49

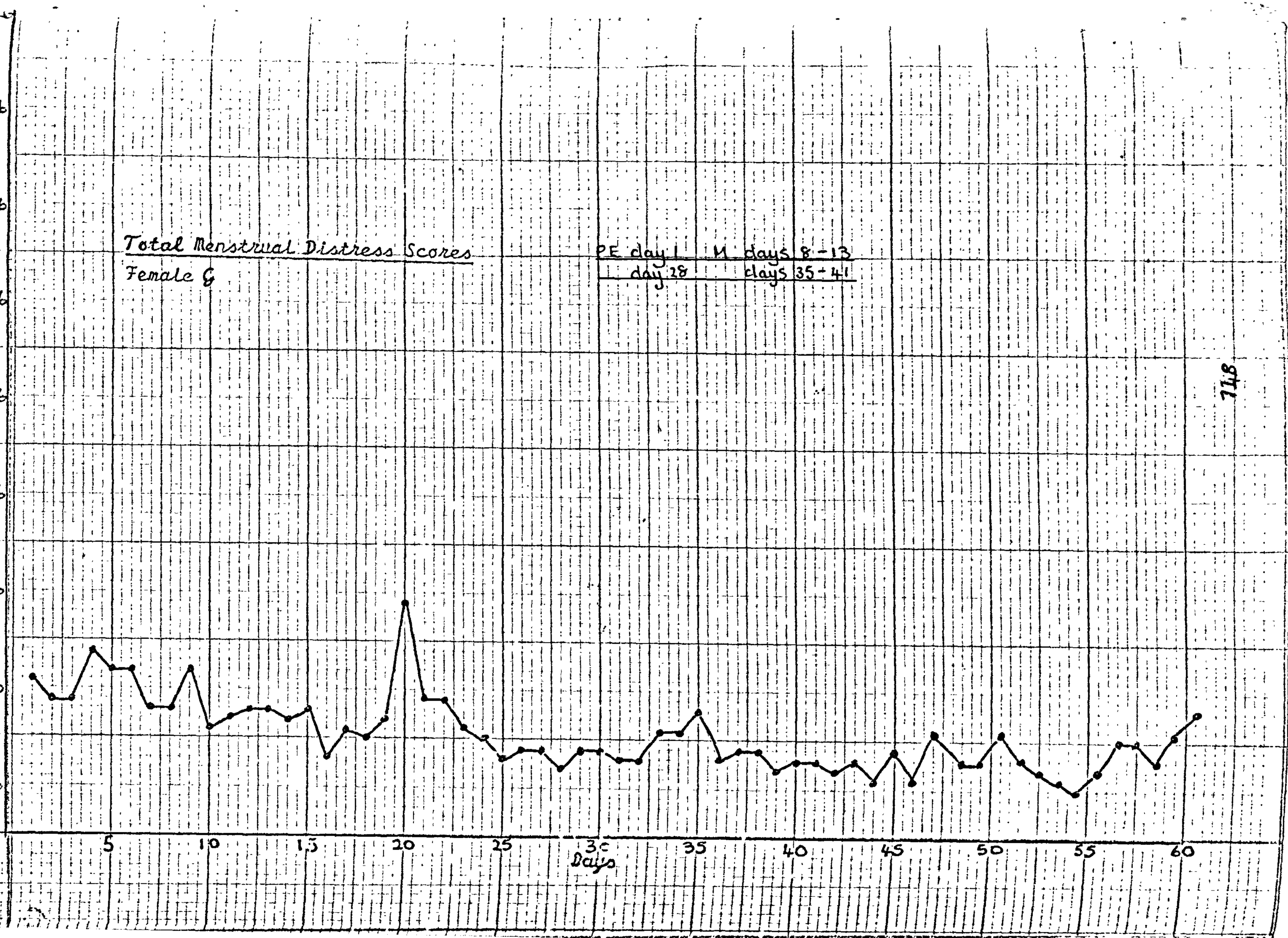


747

Total Menstrual Distress Scores

Female G

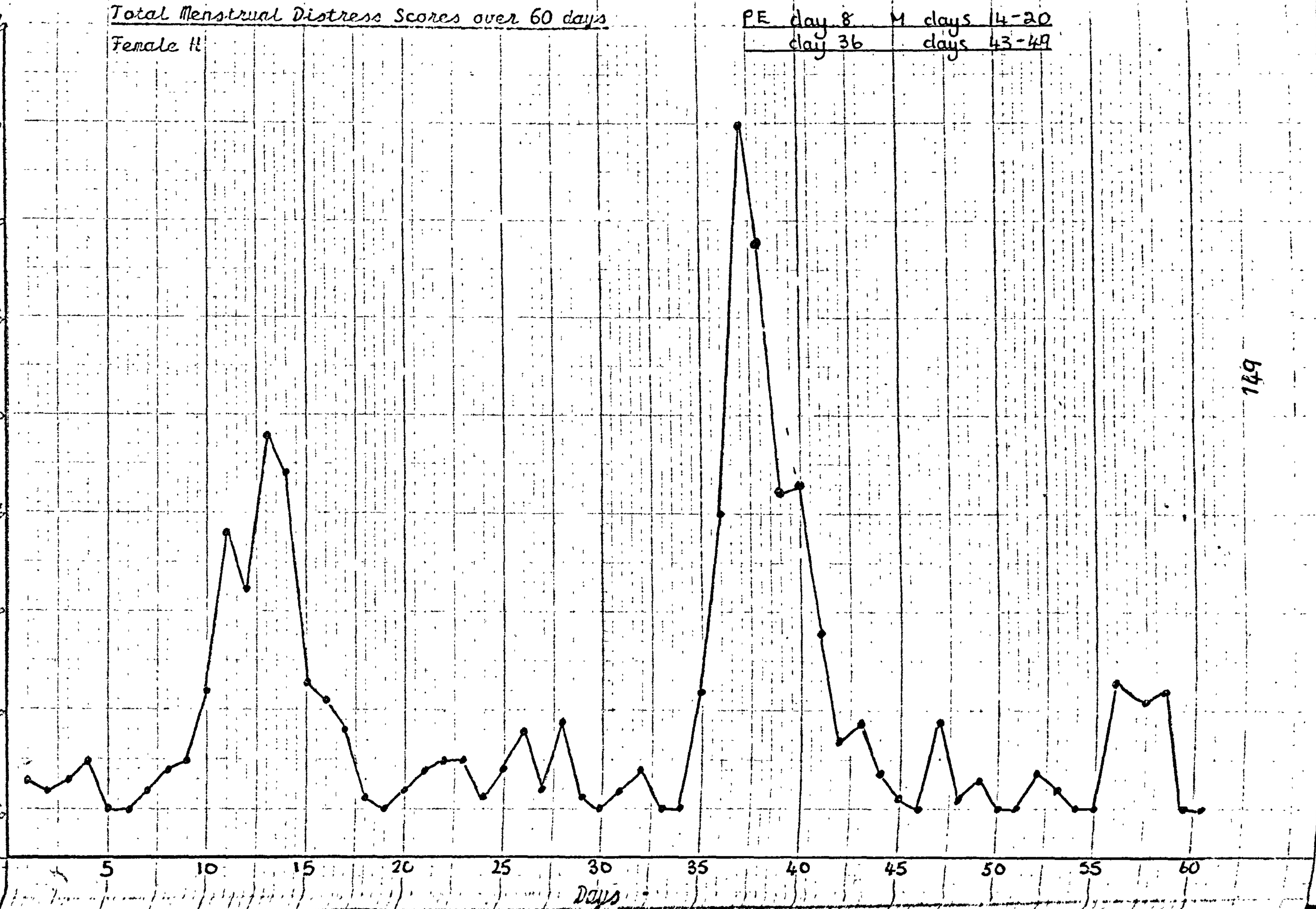
PE day 1 M days 8-13
day 28 days 35-41



Total Menstrual Distress Scores over 60 days

Female H

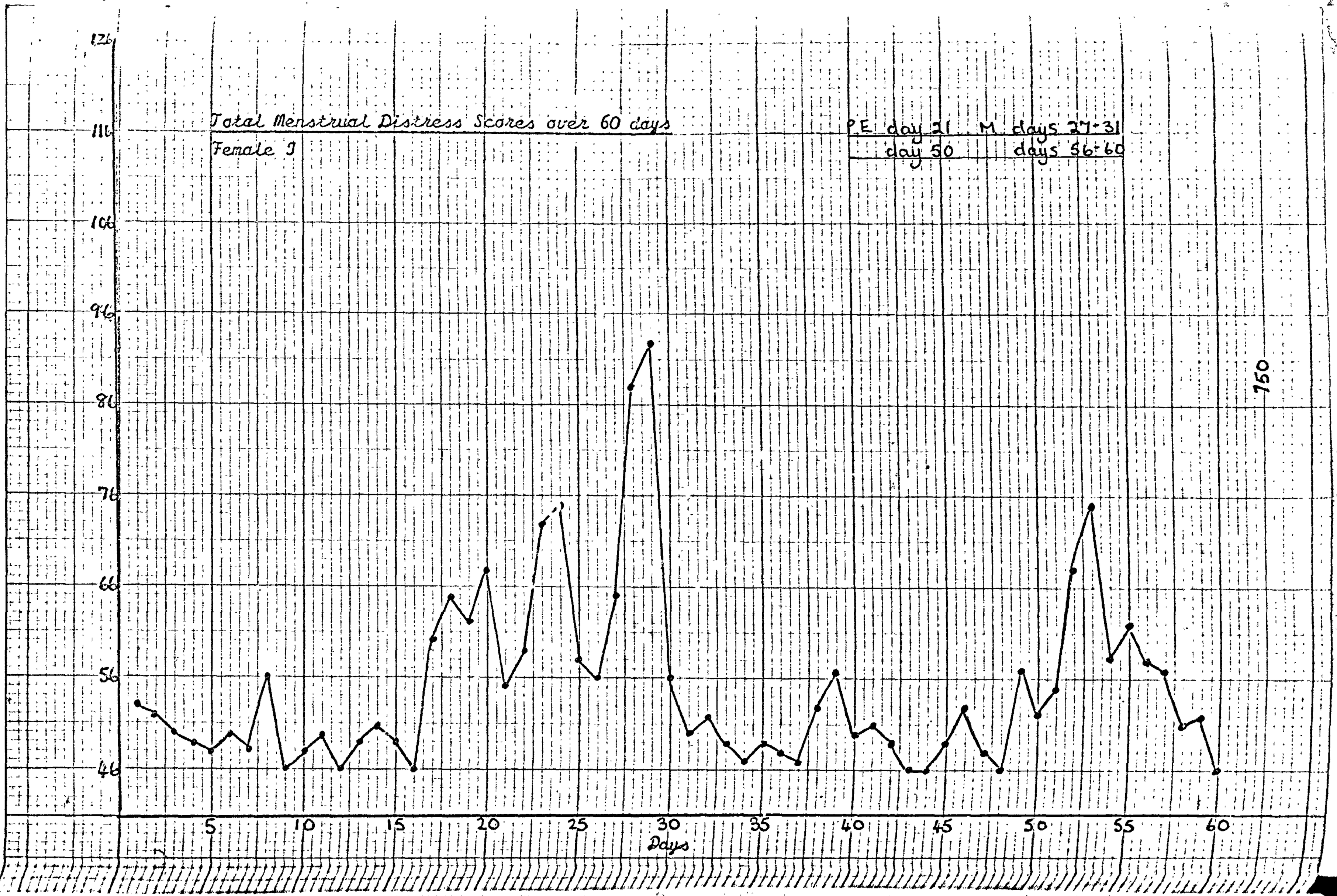
PE day 8 M days 14-20
day 36 days 43-49



Total Menstrual Distress Scores over 60 days

Female I

P.E day 21 M days 27-31
day 50 days 56-60



Total Menstrual Distress Scores over 60 days

Female J

PE day 1 M days 4-9
day 26 days 35-40

126
116
106
96
86
76
66
56
46

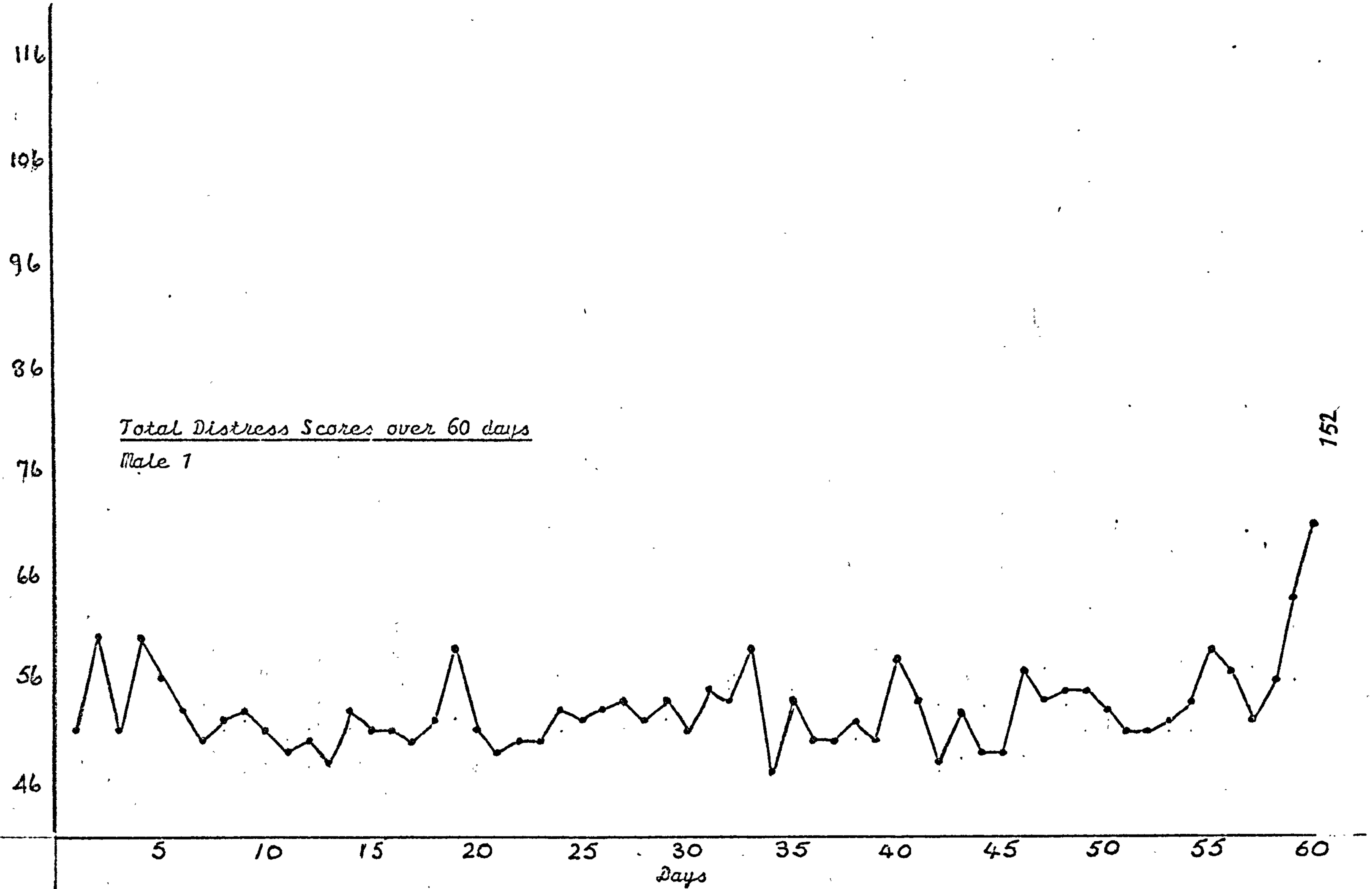
5 10 15 20 25 30 35 40 45 50 55 60

Days

151

Total Distress Scores over 60 days

Male 1



Total Distress Scores over 60 days

Male 2

126
116
106
96
86
76
66
56
46

5 10 15 20 25 30 35 40 45 50 55 60

Days

753

Total Distress Scores over 60 days

Male 3

116
106
96
86
76
66
56
46

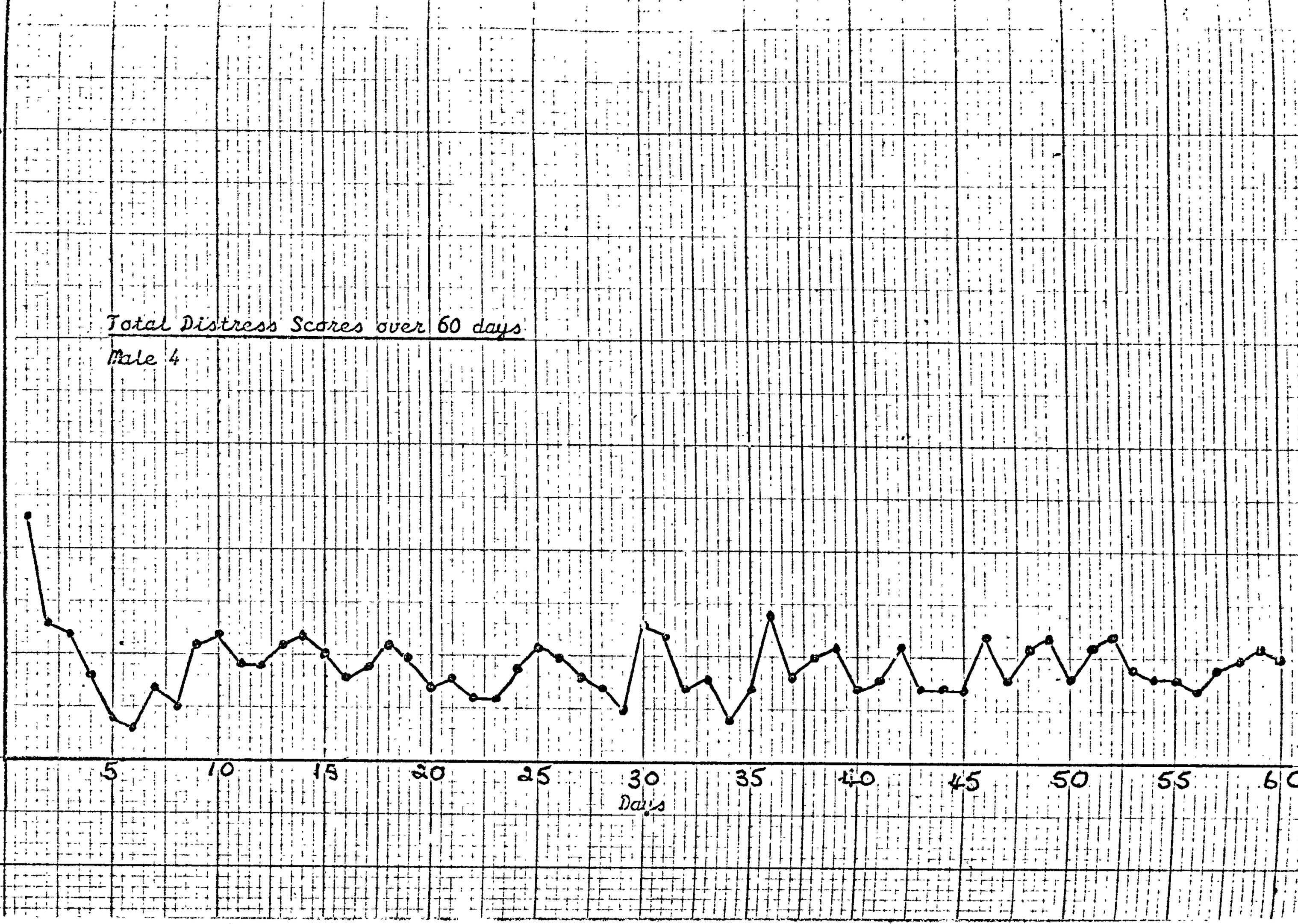
5 10 15 20 25 30 35 40 45 50 55 60

Days

154

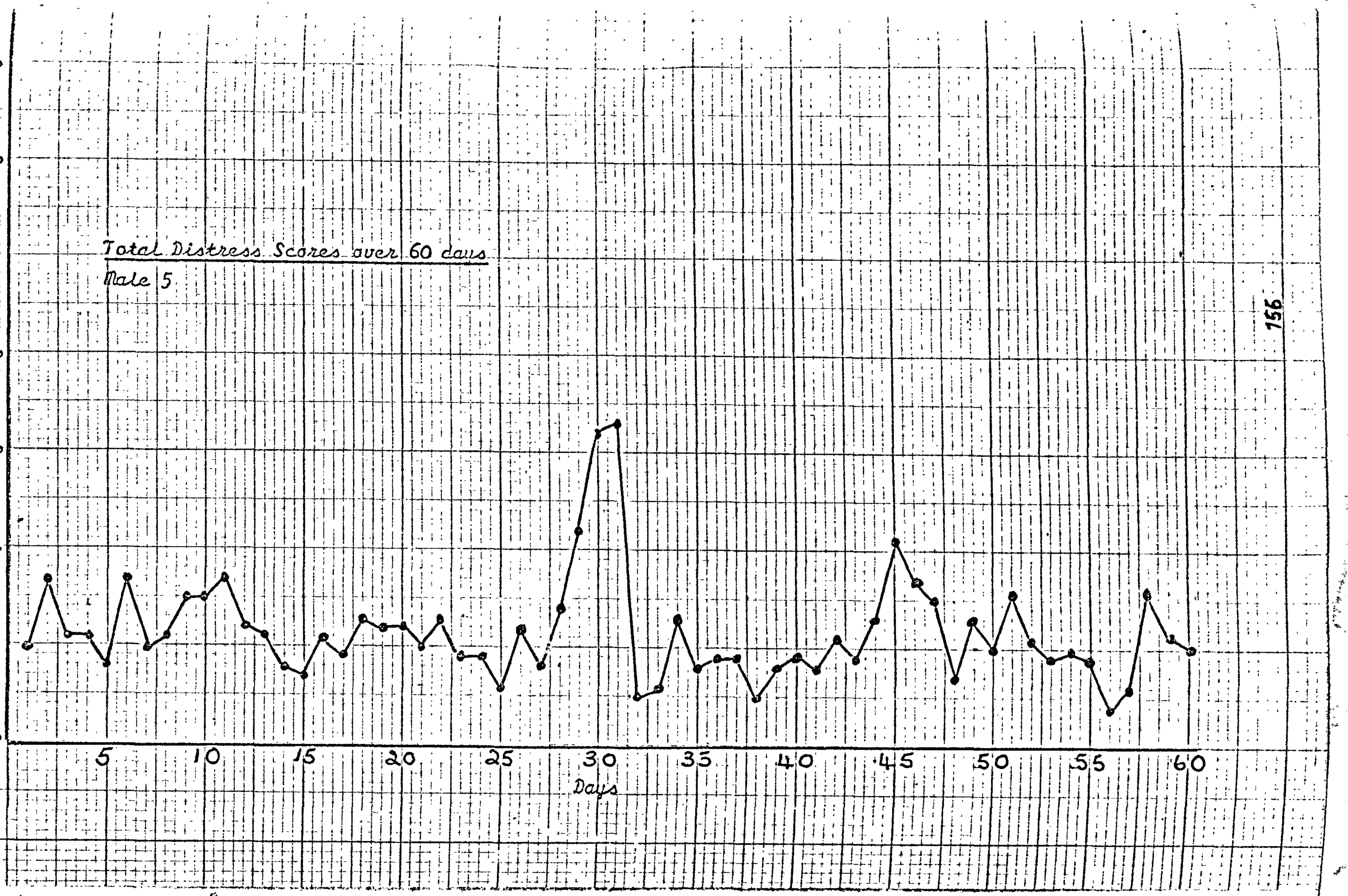
Total Distress Scores over 60 days

Male 4



Total Distress Scores over 60 days

Male 5



Total Distress Scores over 60 days

Male 6

116
106
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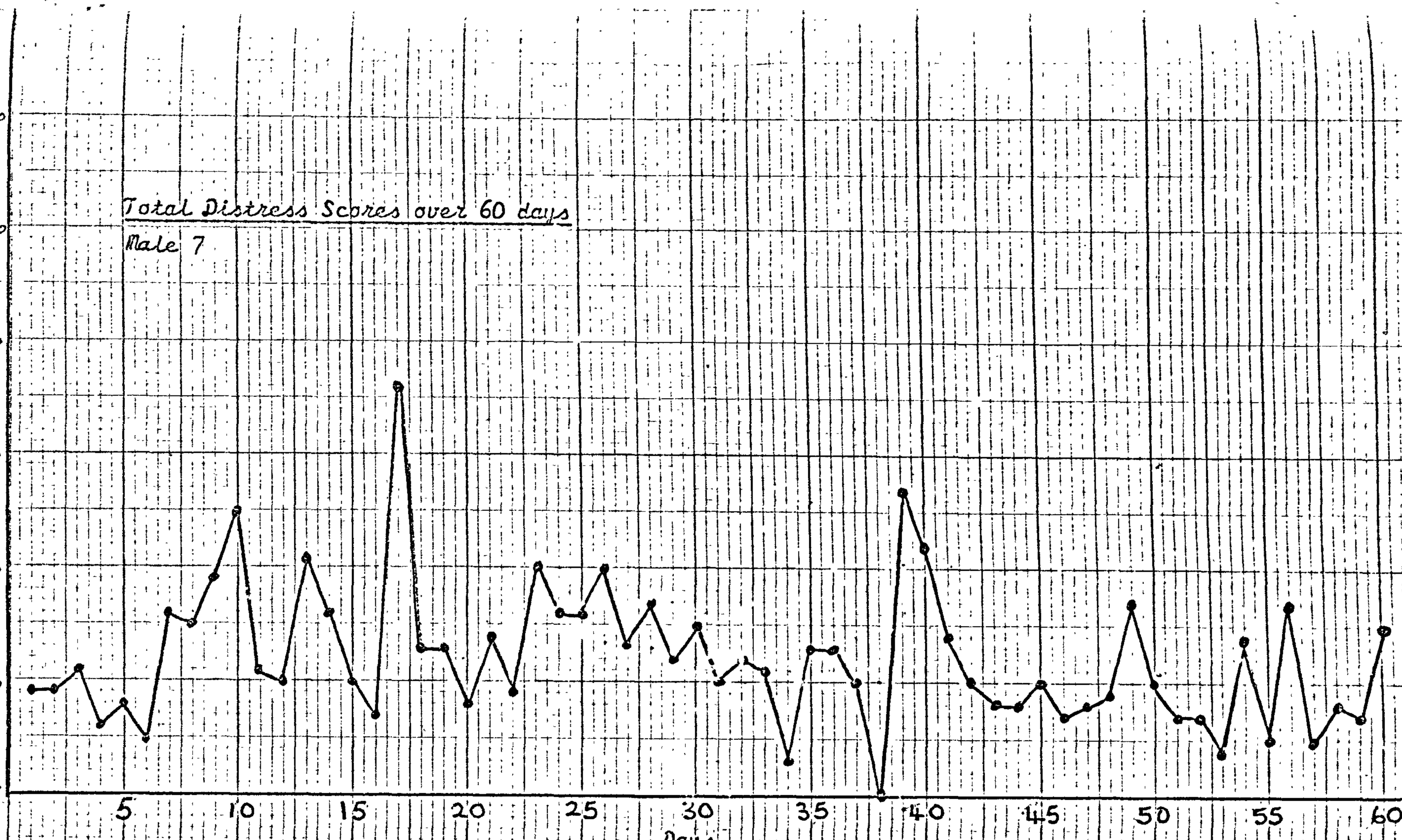
5 10 15 20 25 30 35 40 45 50 55 60

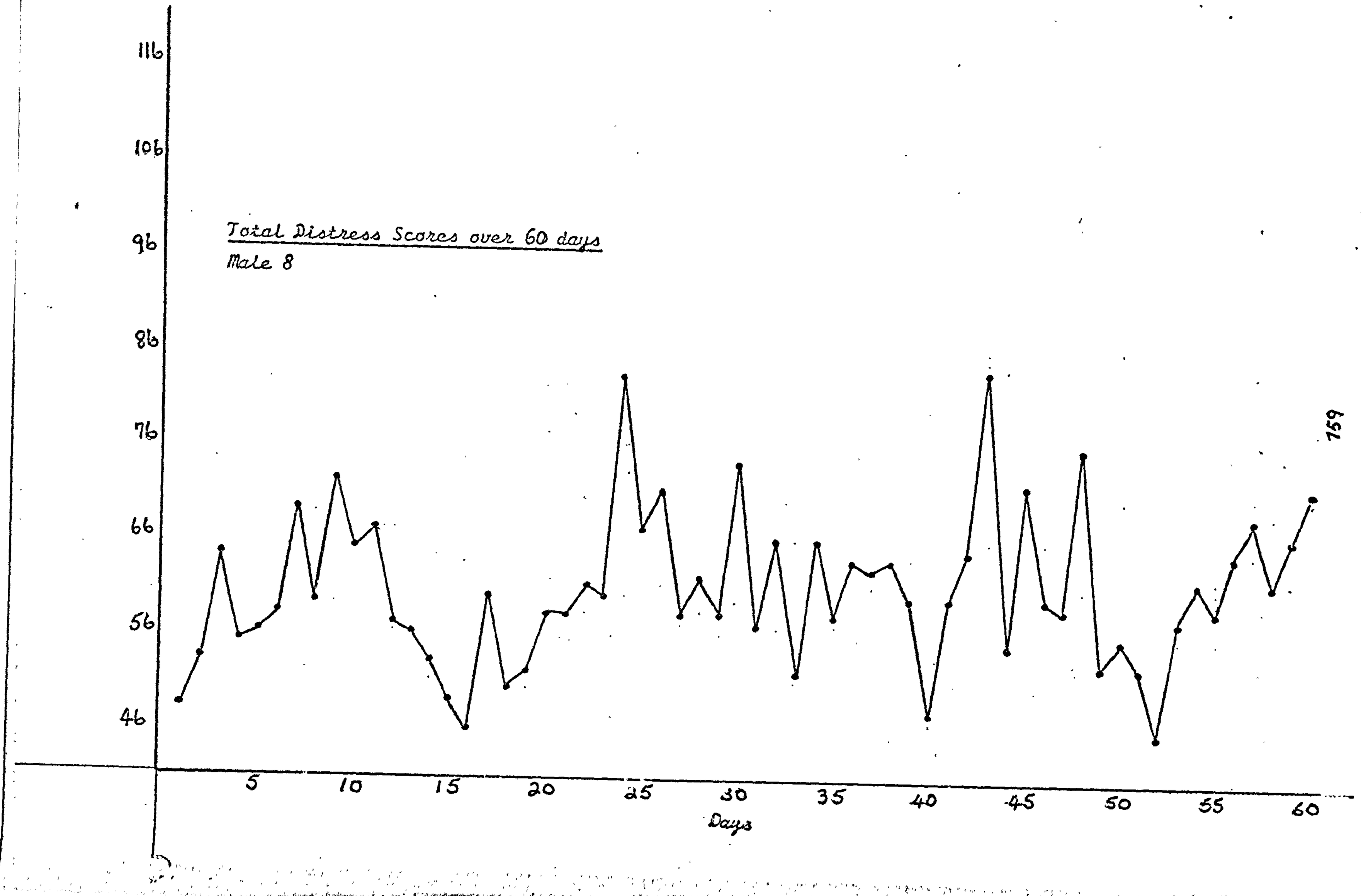
Days

759

Total Distress Scores over 60 days

Male 7




Total Distress Scores over 60 days
Male 8
116
106
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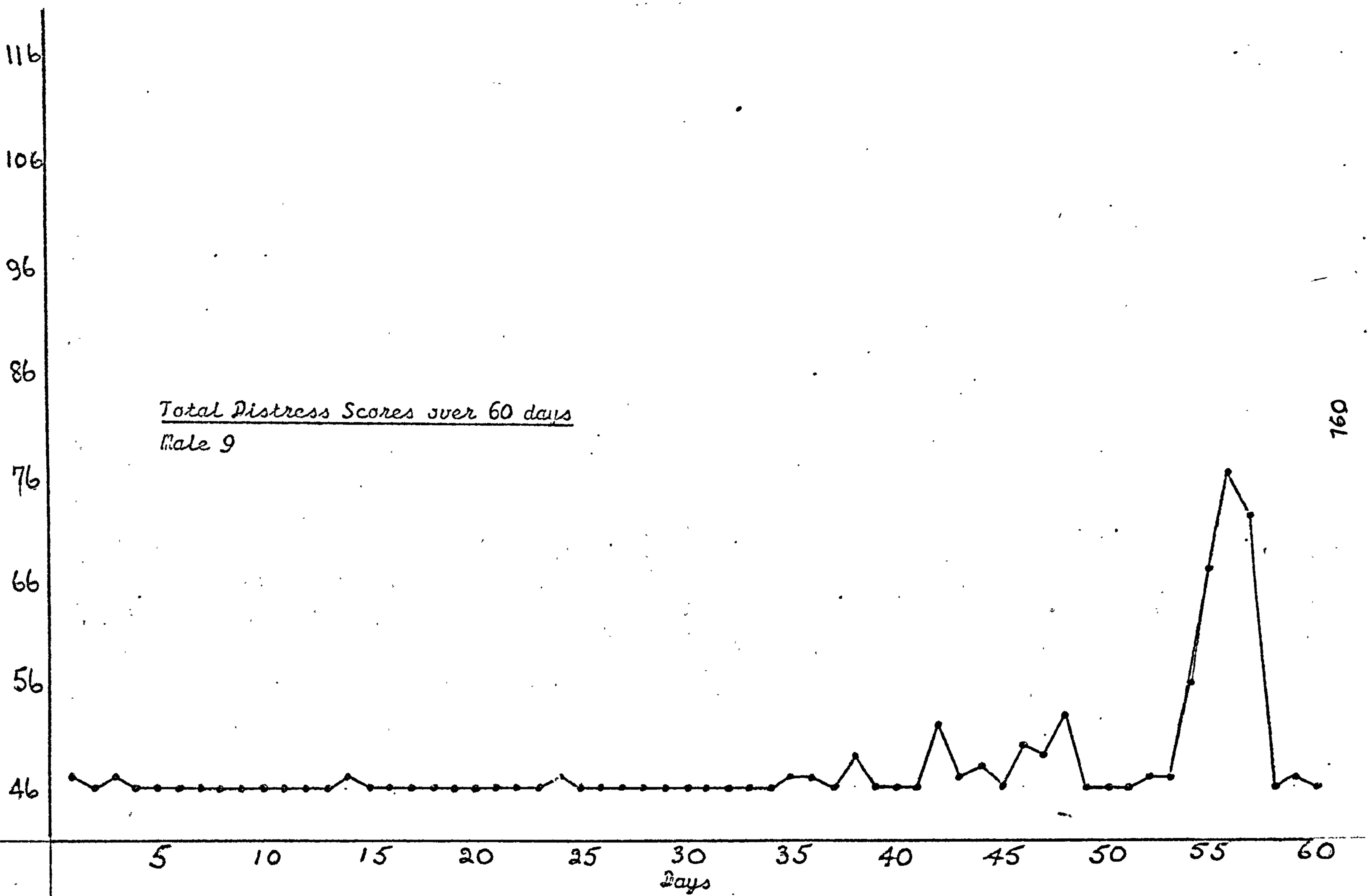
55
60
Days
159

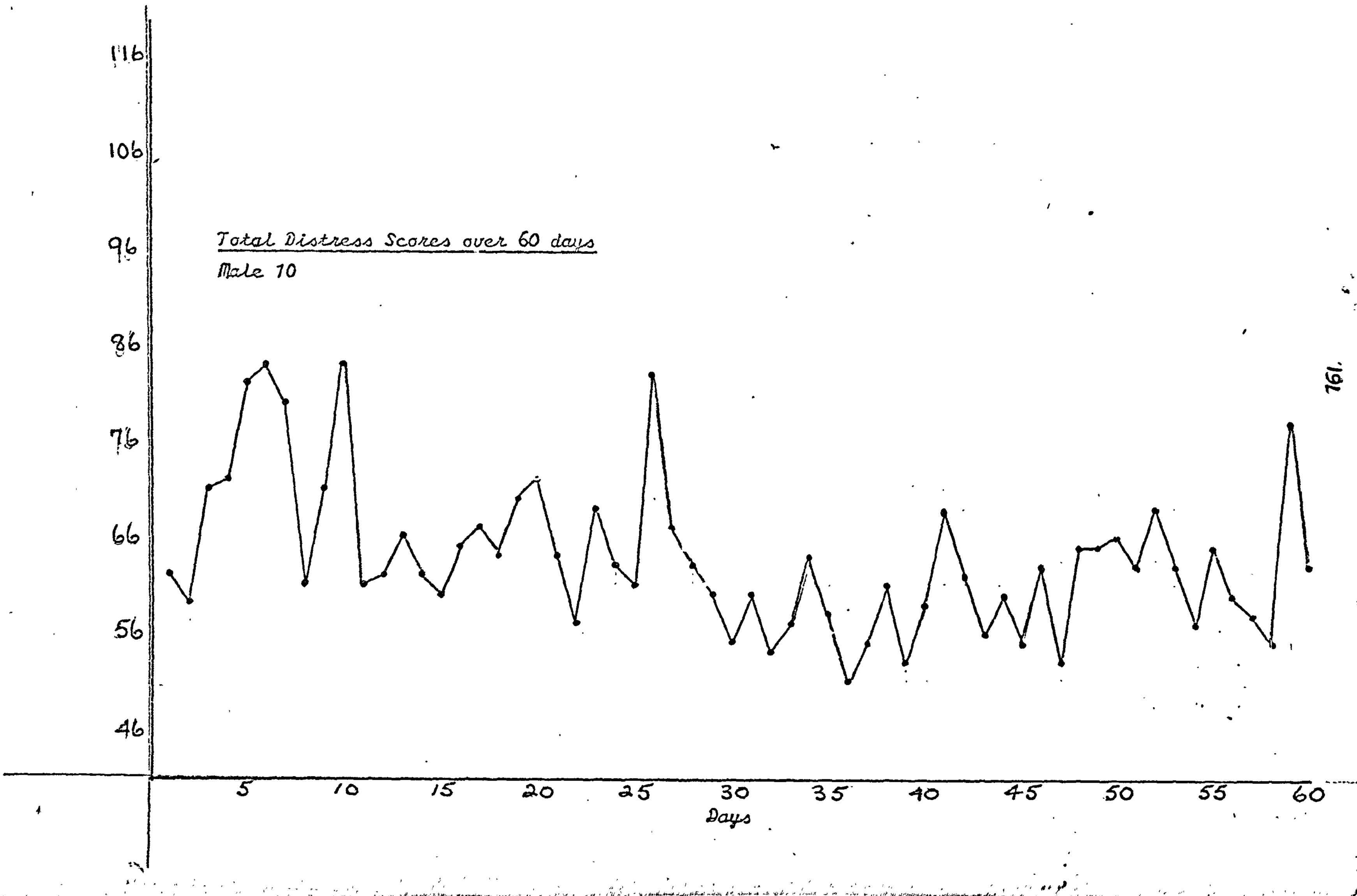
Total Distress Scores over 60 days

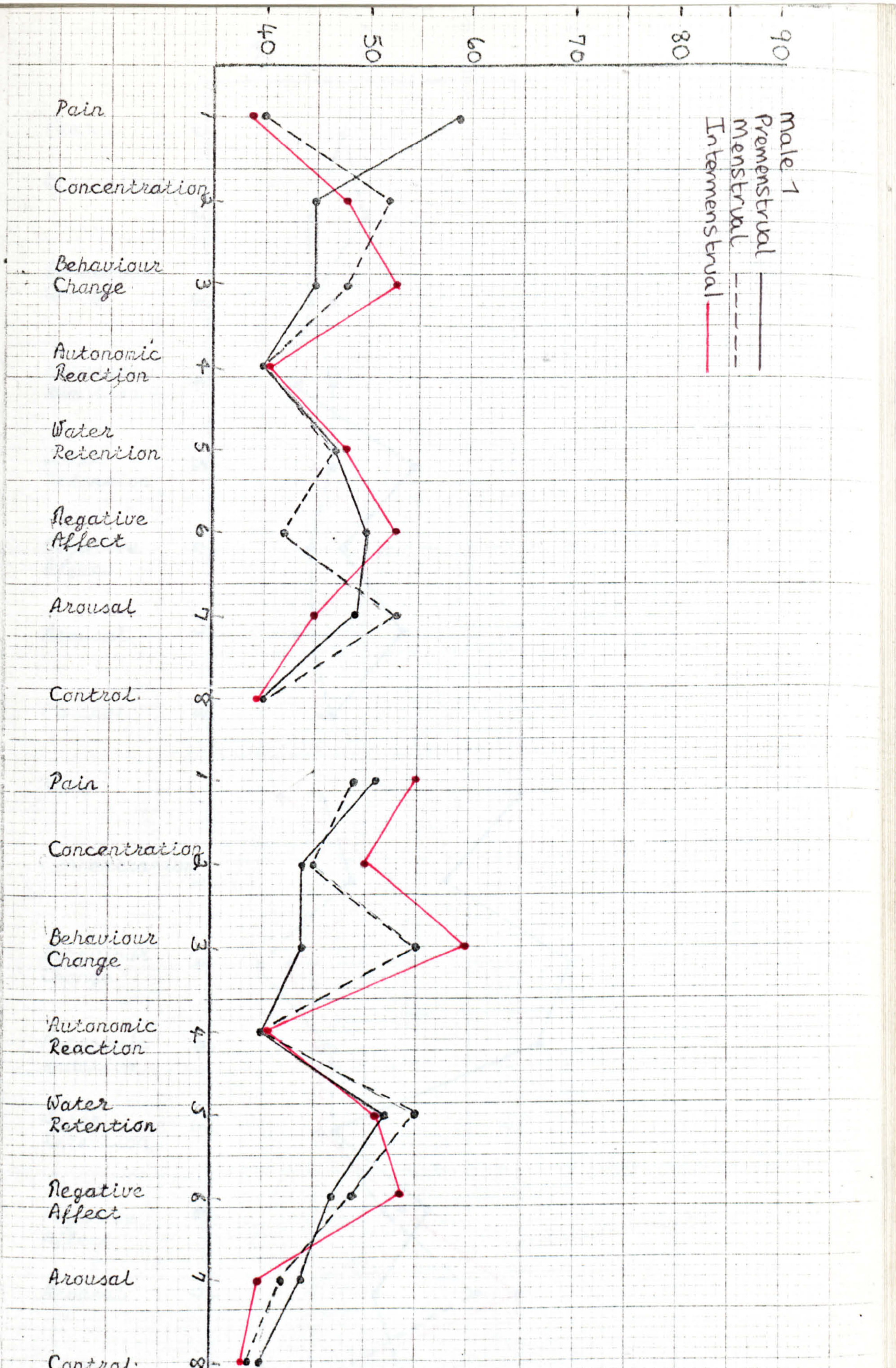
Male 9



Total Distress Scores over 60 days

Male 10

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Male 1
Premenstrual
Menstrual
Intermenstrual
Pain
Concentration
Behaviour Change
Autonomic Reaction
Water Retention
Negative Affect
Arousal
Control
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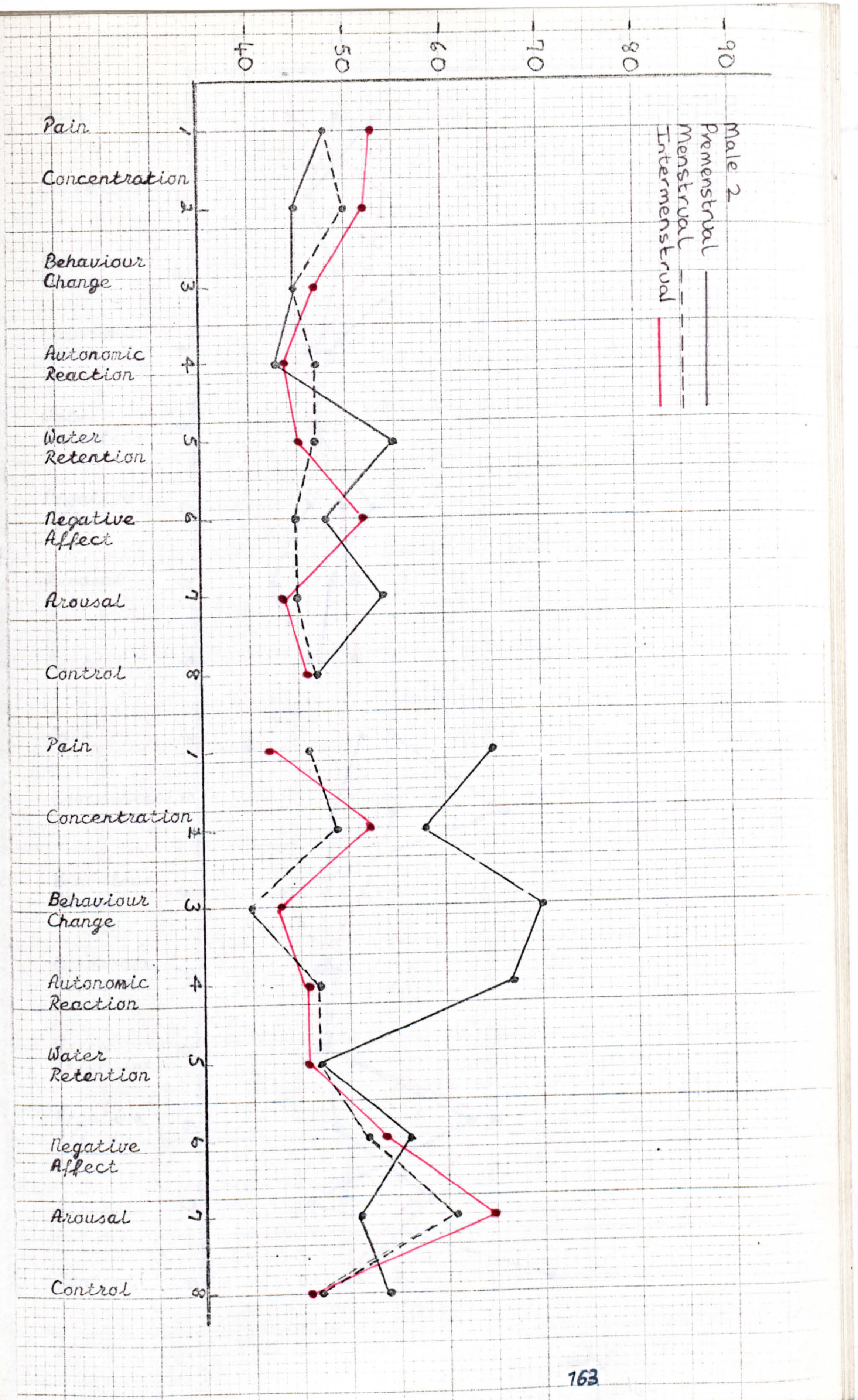
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Premenstrual
Menstrual
Intermenstrual
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Concentration
Behaviour Change
Autonomic Reaction
Water Retention
Negative Affect
Arousal
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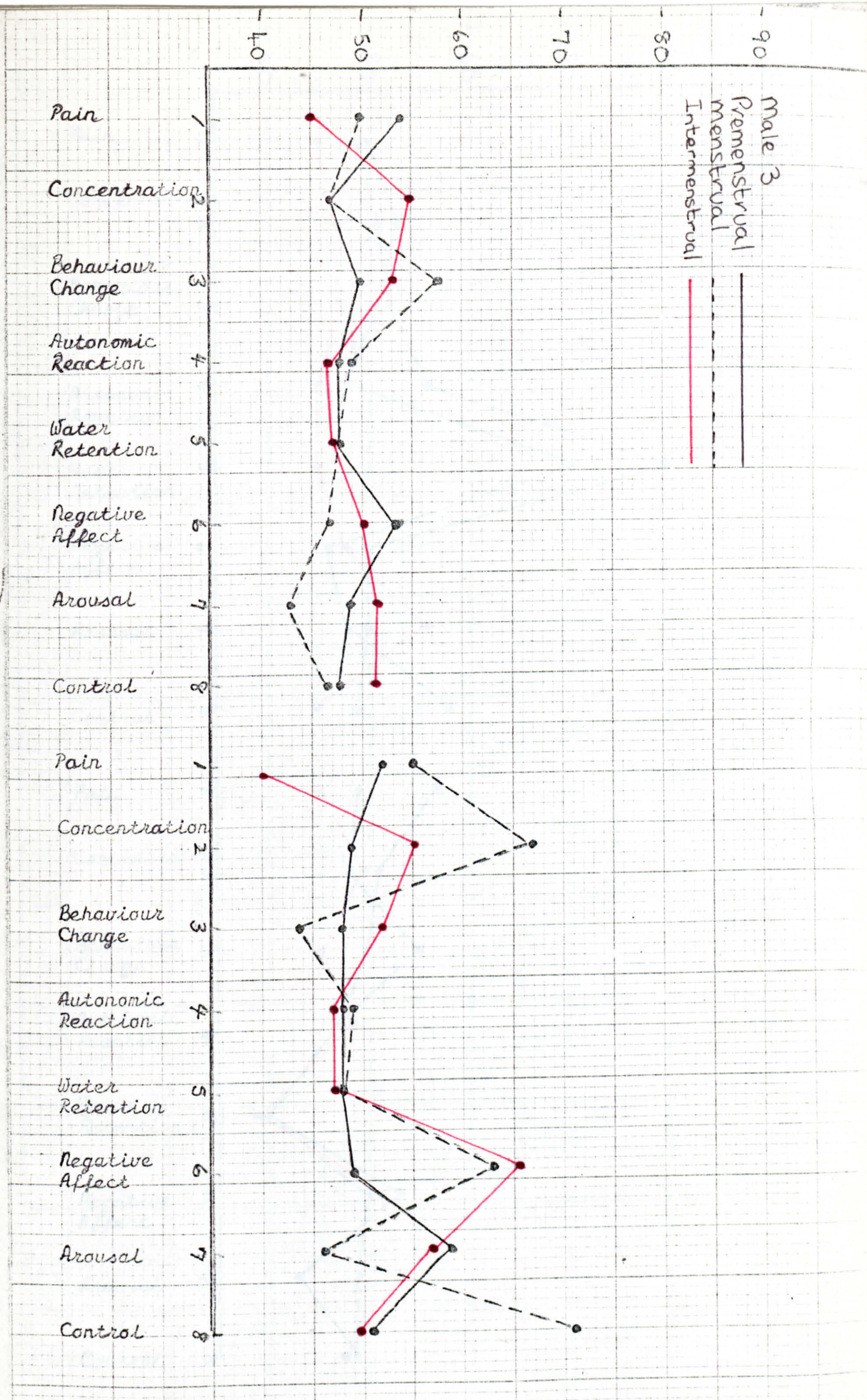
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Male 3
Premenstrual
Menstrual
Intermenstrual
Pain
Concentration
Behaviour Change
Autonomic Reaction
Water Retention
Negative Affect
Arousal
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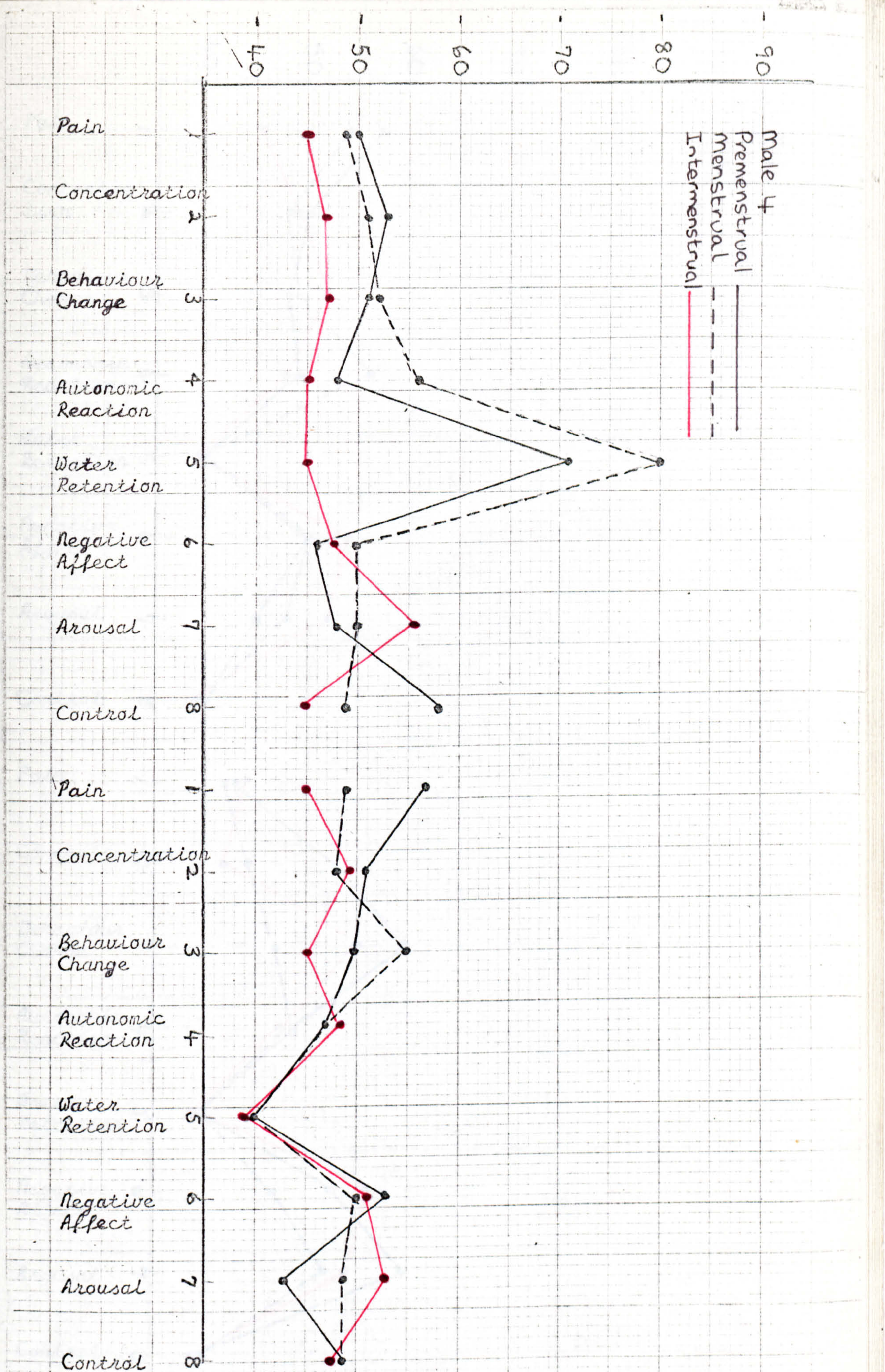
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Male 4
Premenstrual
Menstrual
Intermenstrual
Pain
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Concentration
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Behaviour Change
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Autonomic Reaction
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Water Retention
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Negative Affect
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Arousal
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Control
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Pain
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Autonomic Reaction
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Water Retention
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Arousal
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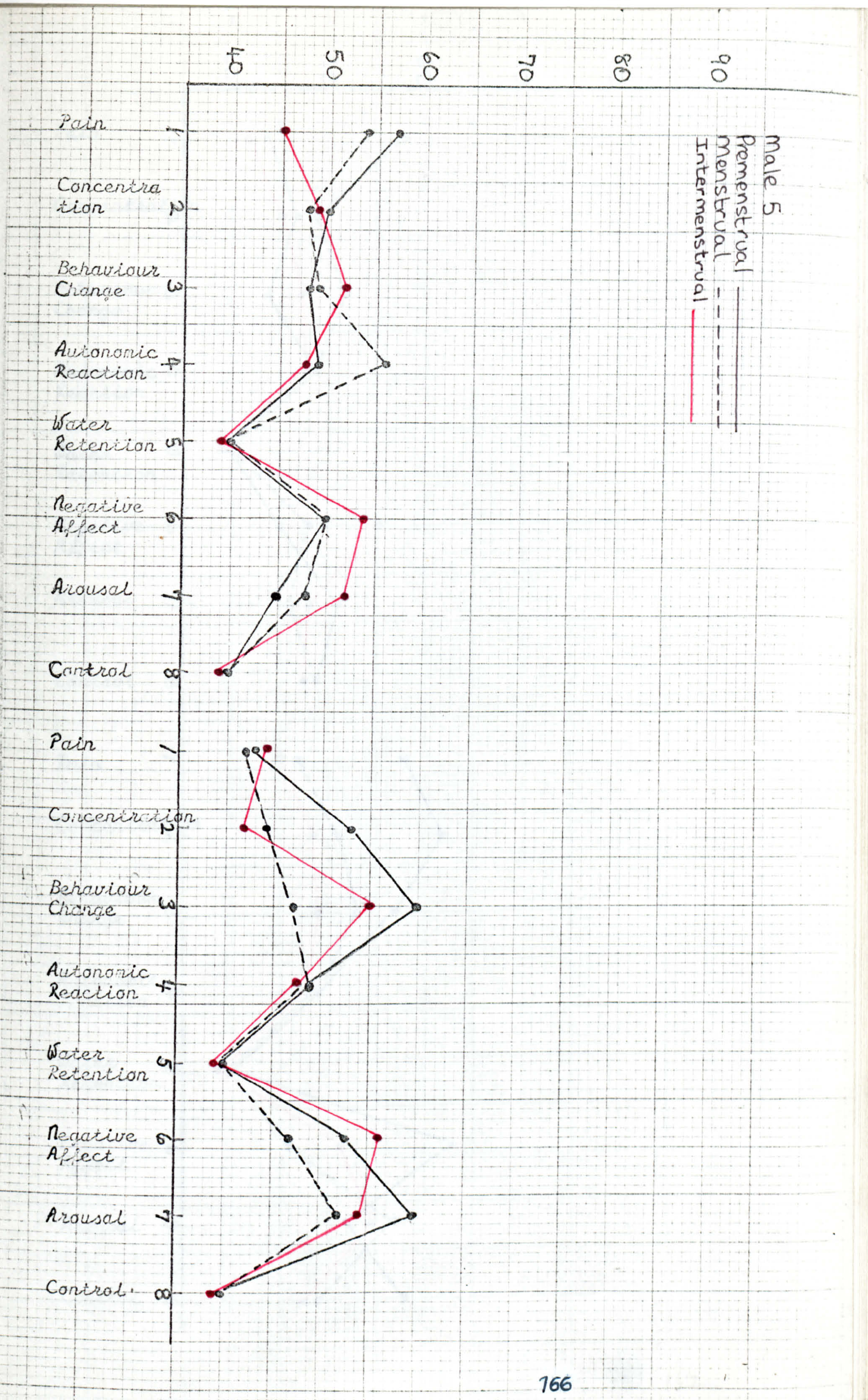
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Male 5
Premenstrual ——
Menstrual - - -
Intermenstrual
Pain 1
Concentration 2
Behaviour Change 3
Autonomic Reaction 4
Water Retention 5
Negative Affect 6
Arousal 7
Control 8
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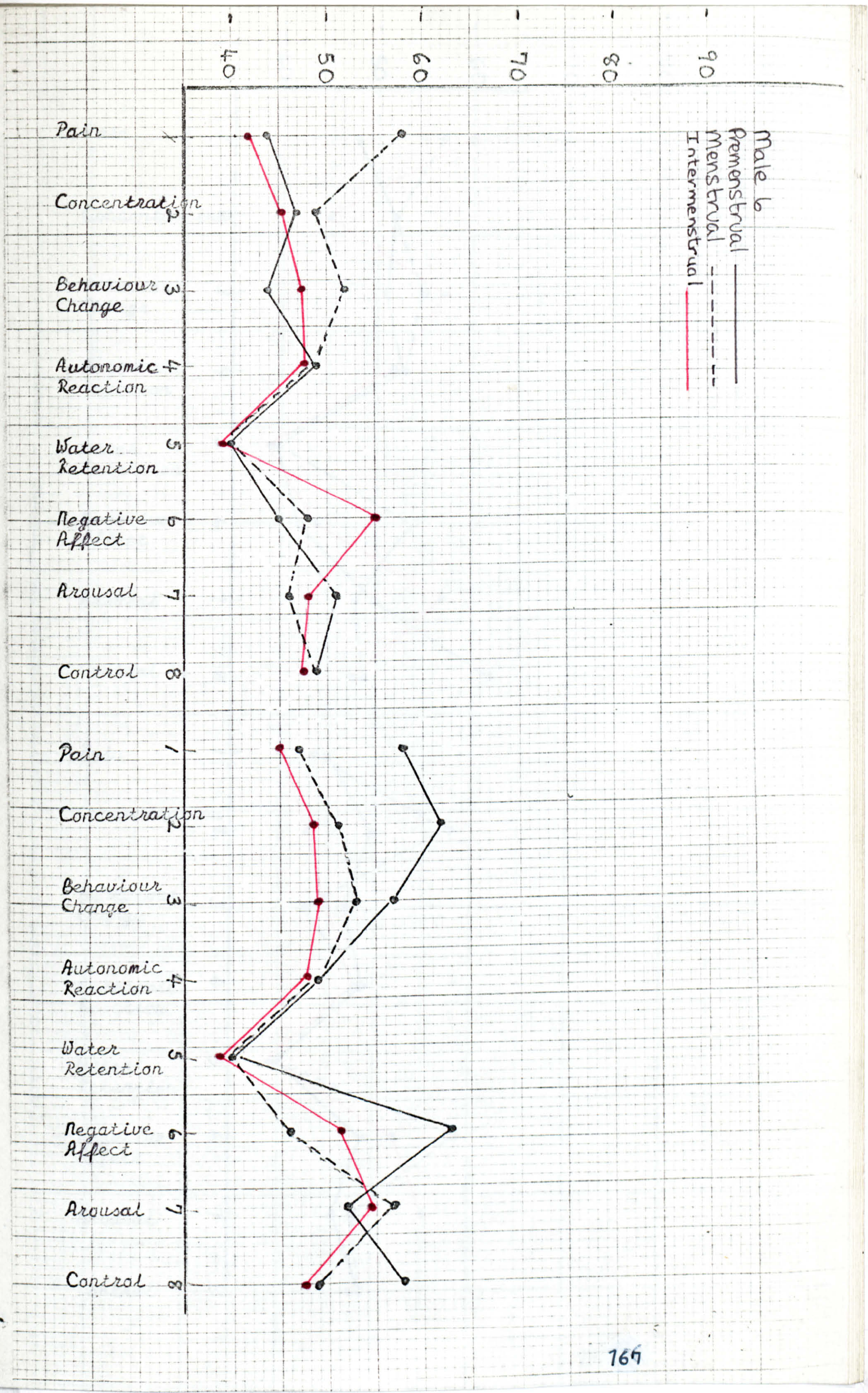
Concentration 2
Behaviour Change 3
Autonomic Reaction 4
Water Retention 5
Negative Affect 6
Arousal 7
Control 8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Male 6
Premenstrual
Menstrual
Intermenstrual
Pain 1
Concentration 2
Behaviour Change 3
Autonomic Reaction 4
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Negative Affect 6
Arousal 7
Control 8
Pain 1
Concentration 2
Behaviour Change 3
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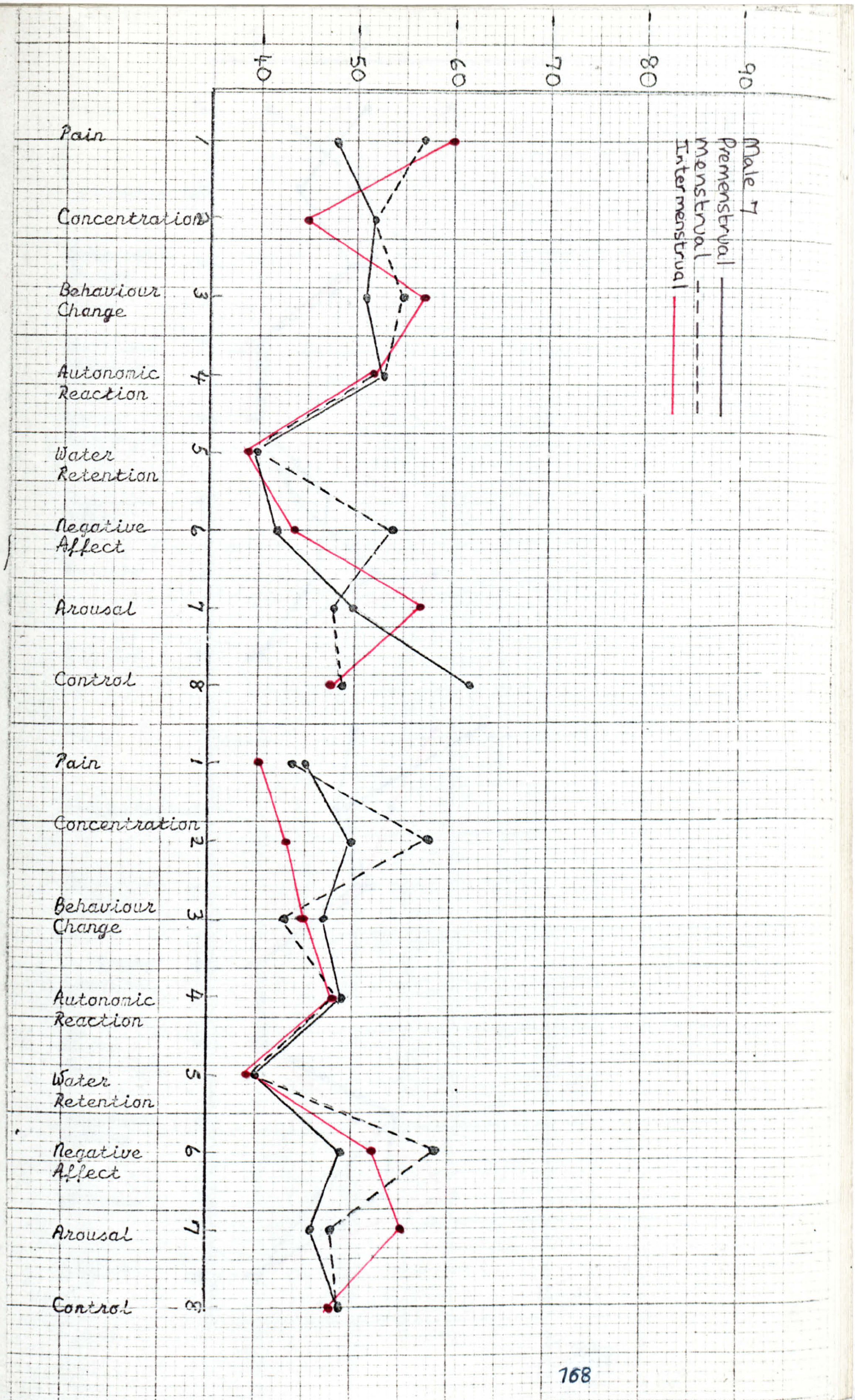
Water Retention 5
Negative Affect 6
Arousal 7
Control 8


Male 7
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Intermenstrual
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Behaviour Change
Autonomic Reaction
Water Retention
Negative Affect
Arousal
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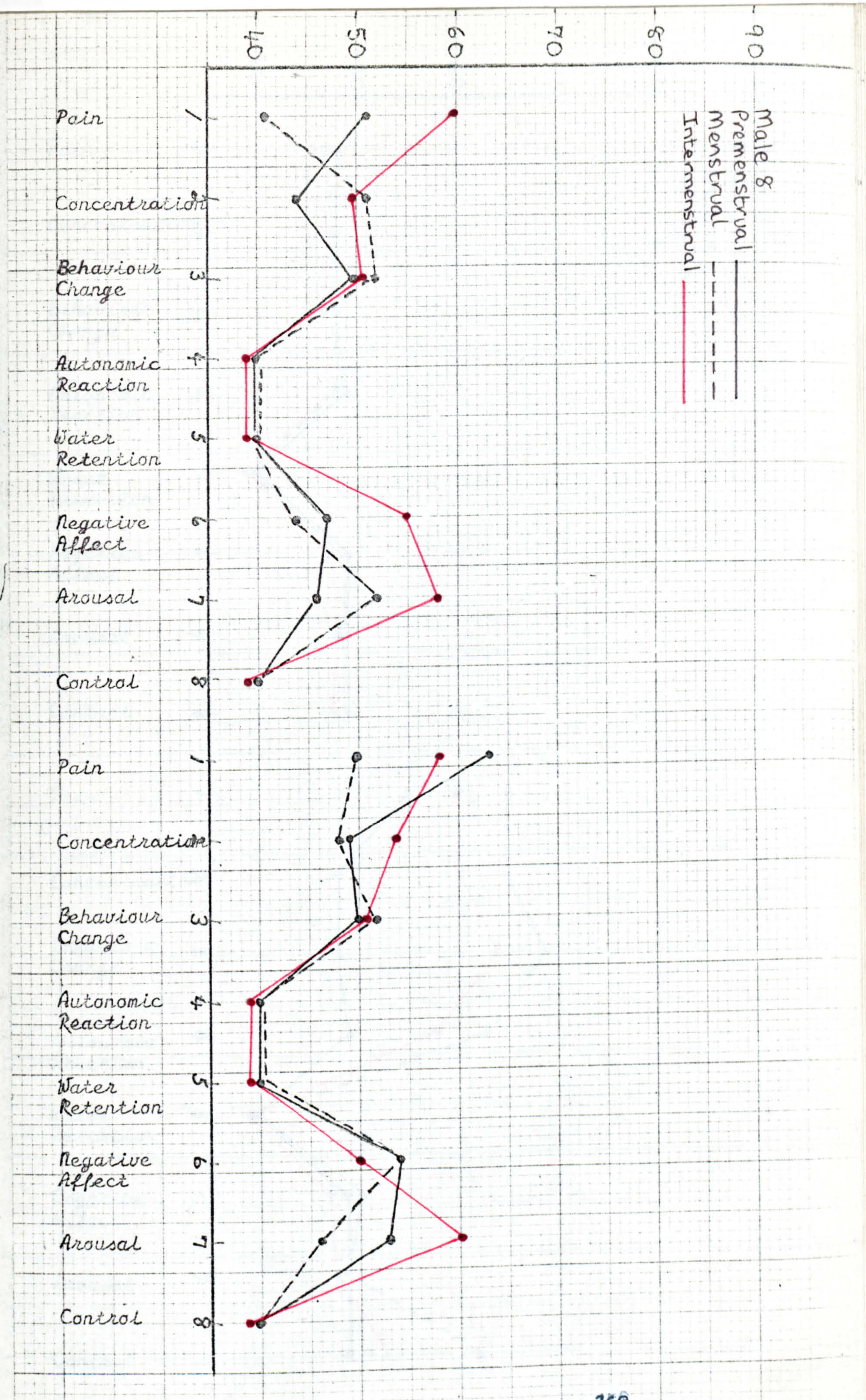
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Male &
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Intermenstrual
Pain
Concentration
Behaviour Change
Autonomic Reaction
Water Retention
Negative Affect
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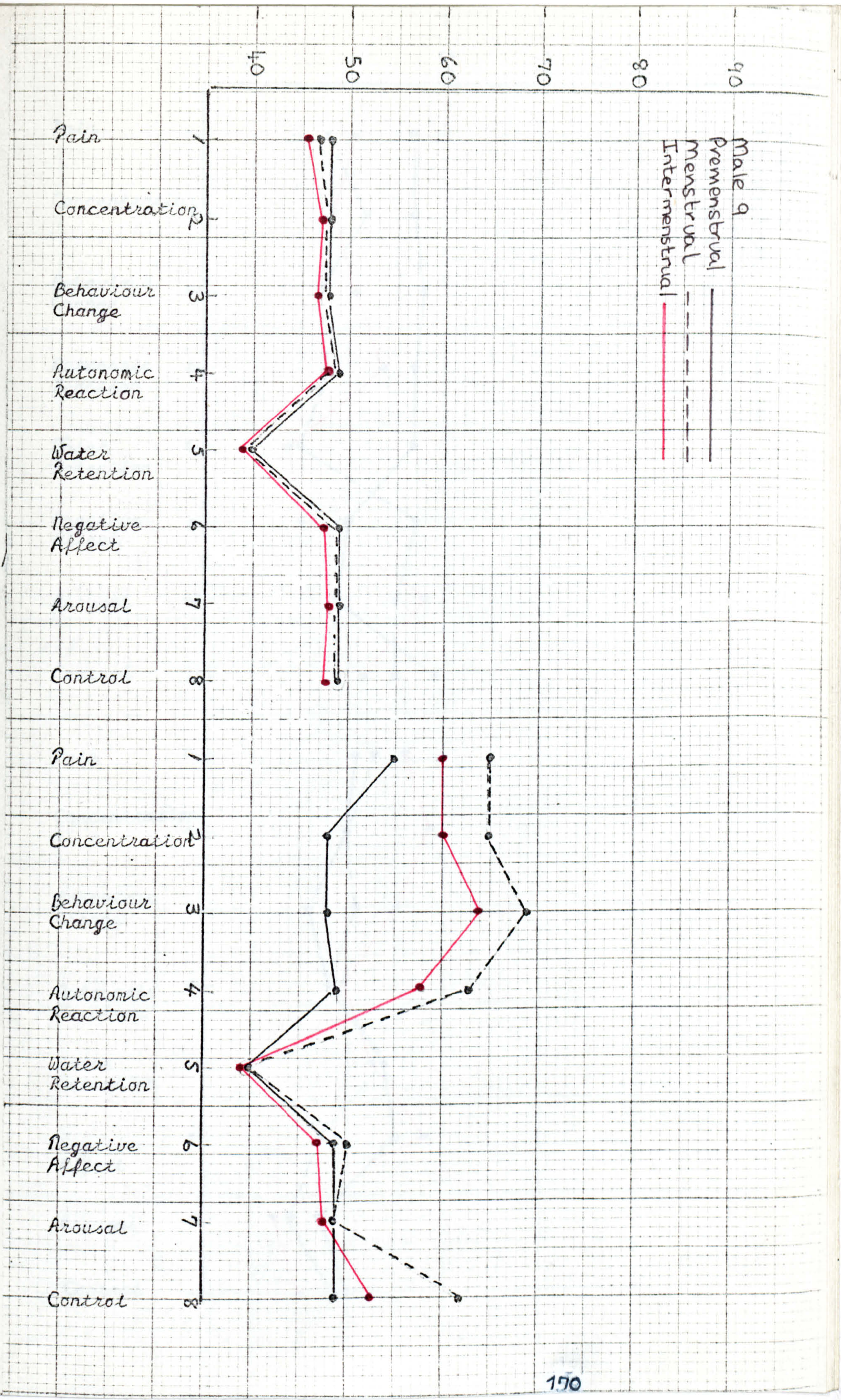
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Premenstrual
Menstrual
Intermenstrual
Pain
Concentration
Behaviour Change
Autonomic Reaction
Water Retention
Negative Affect
Arousal
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Concentration
Behaviour Change
Autonomic Reaction
Water Retention
Negative Affect
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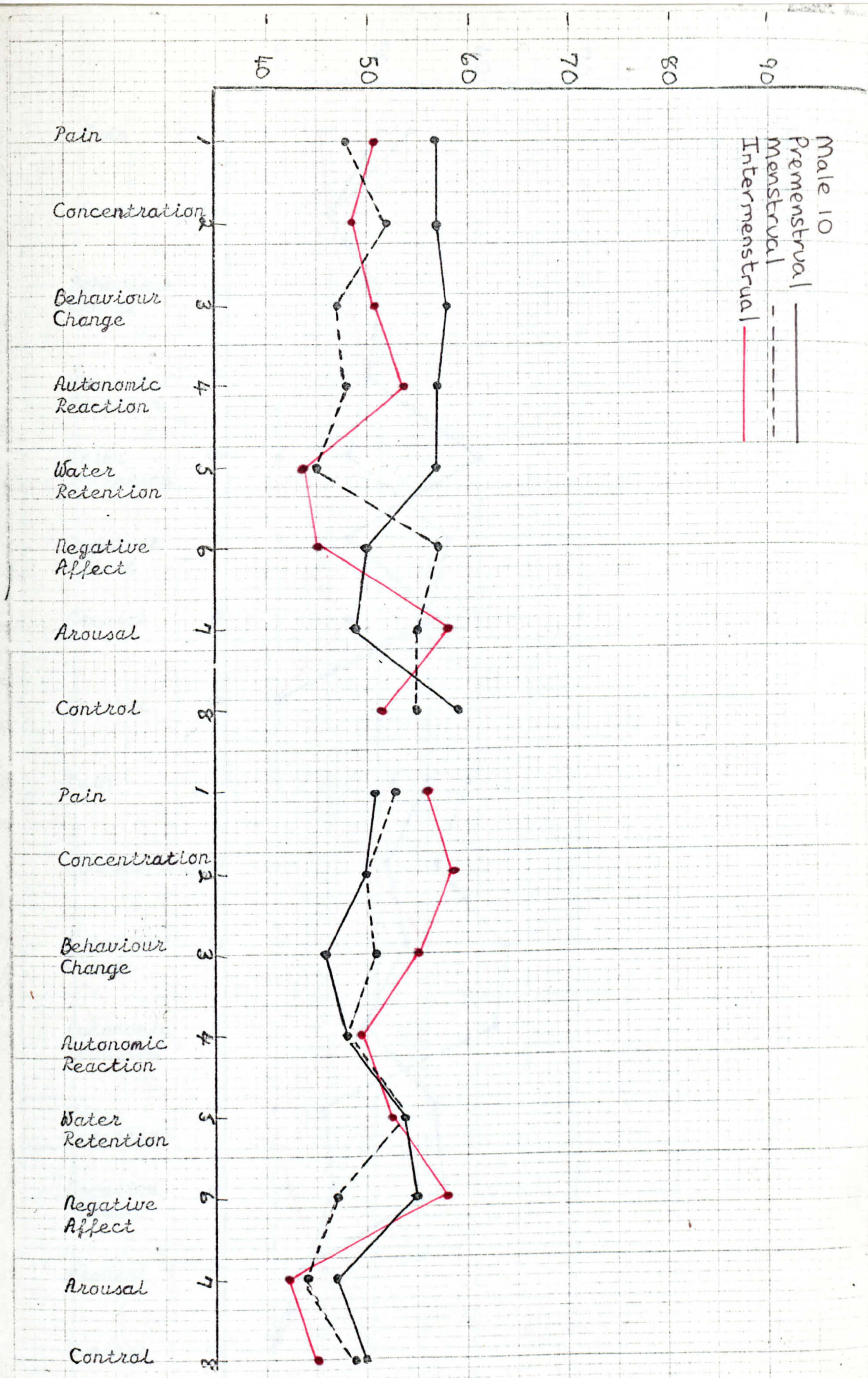
Male 10
Premenstrual
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Autonomic Reaction
Water Retention
Negative Affect
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Concentration
Behaviour Change
Autonomic Reaction
Water Retention
Negative Affect
Arousal
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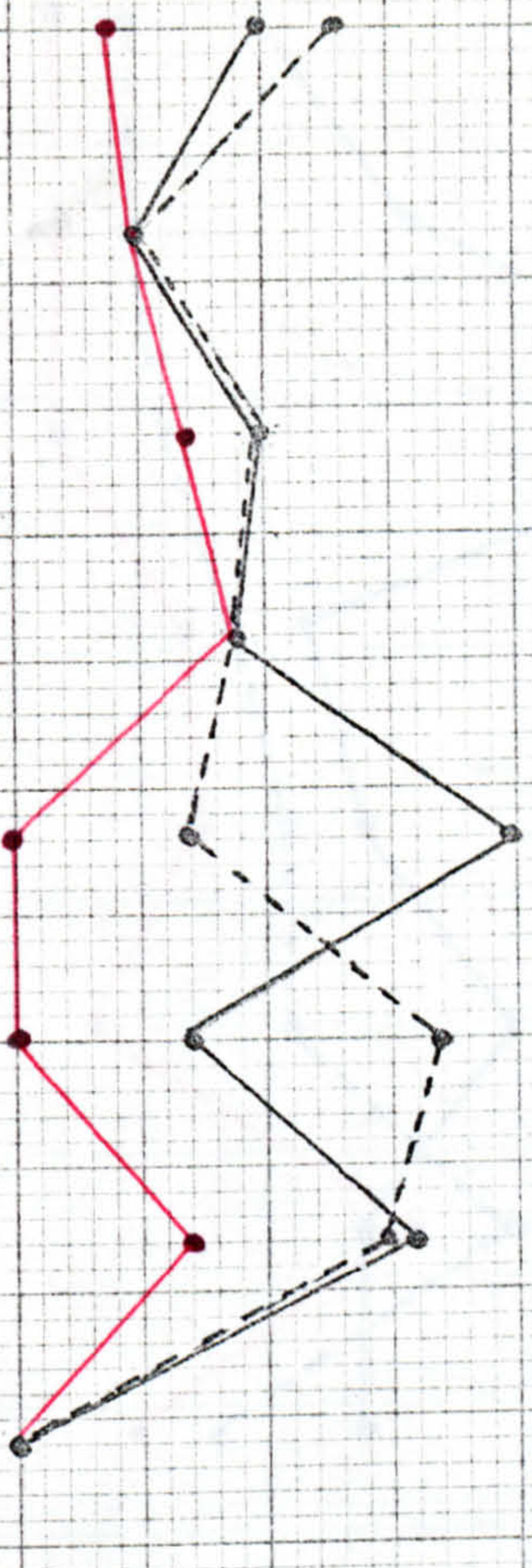
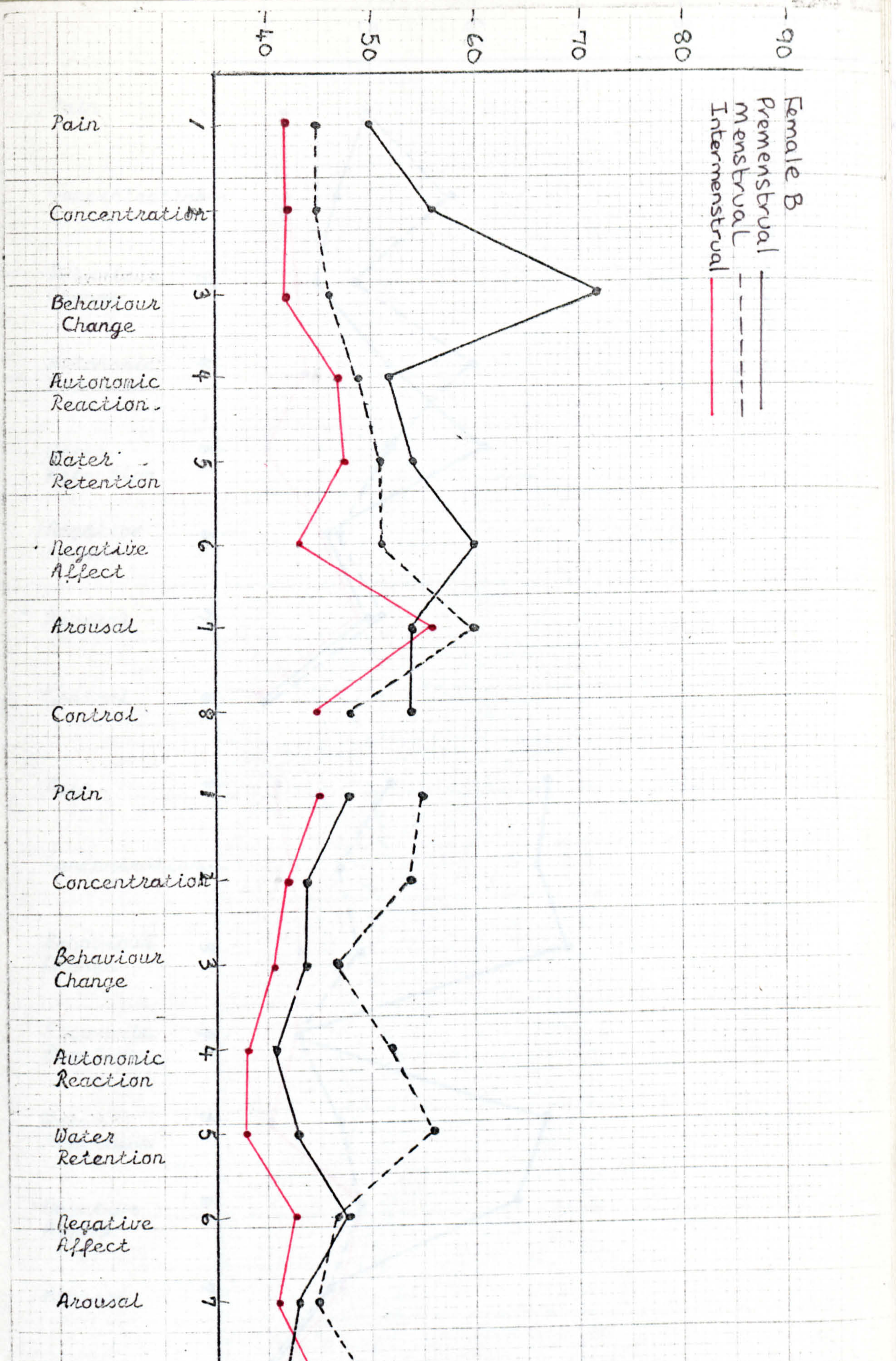
40 50 60 70 80 90

Female A
Premenstrual ——
Menstrual - - - -
Intermenstrual

Pain 1
Concentration 2
Behaviour Change 3
Autonomic Reaction 4
Water Retention 5
Negative Affect 6
Arousal 7
Control 8



Pain 1
Concentration 2
Behaviour Change 3
Autonomic Reaction 4
Water Retention 5
Negative Affect 6
Arousal 7
Control 8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Female B
Premenstrual
Menstrual
Intermenstrual
Pain
Concentration
Behaviour Change
Autonomic Reaction
Water Retention
Negative Affect
Arousal
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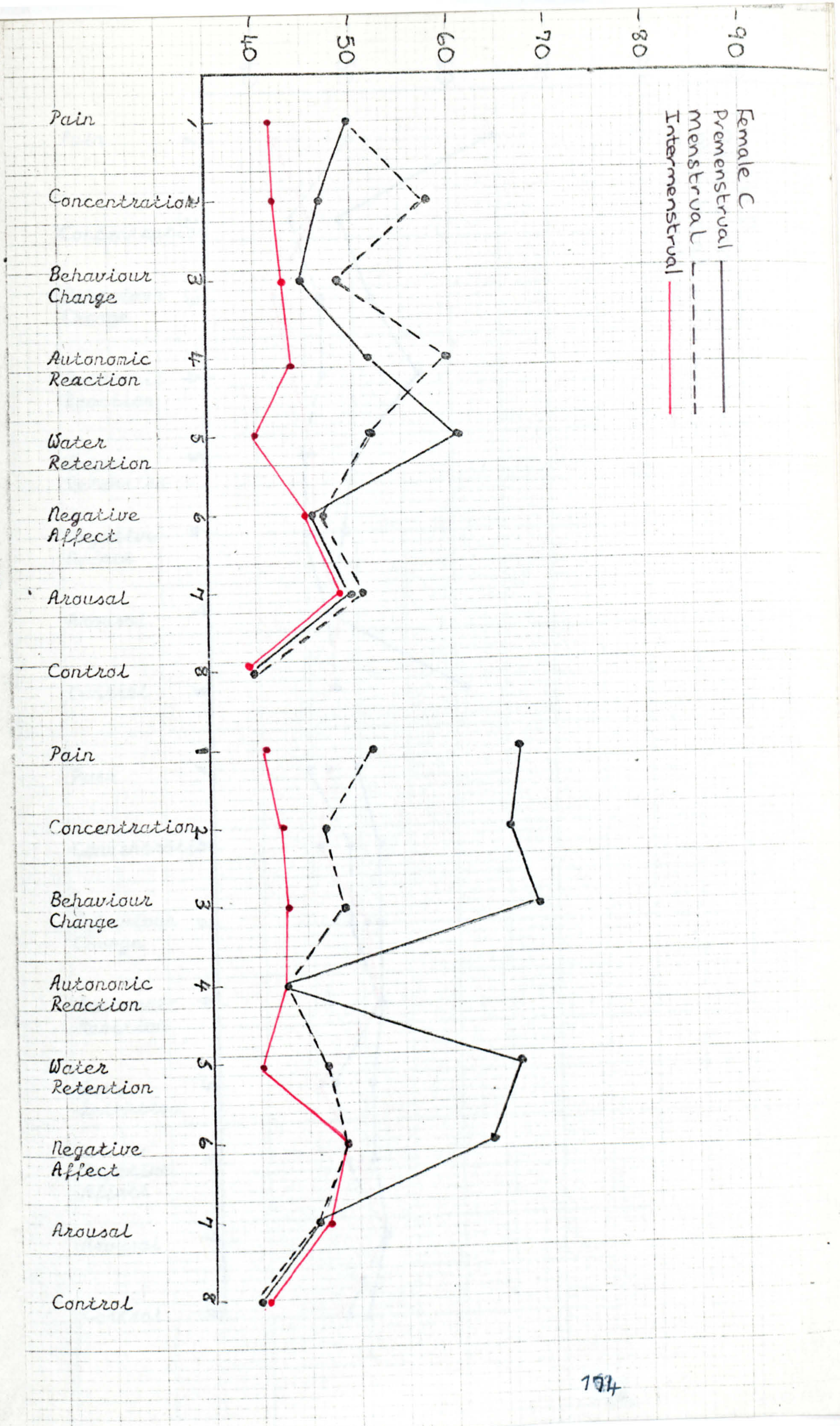
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Female C
Premenstrual
Menstrual
Intermenstrual
Pain
Concentration
Behaviour Change
Autonomic Reaction
Water Retention
Negative Affect
Arousal
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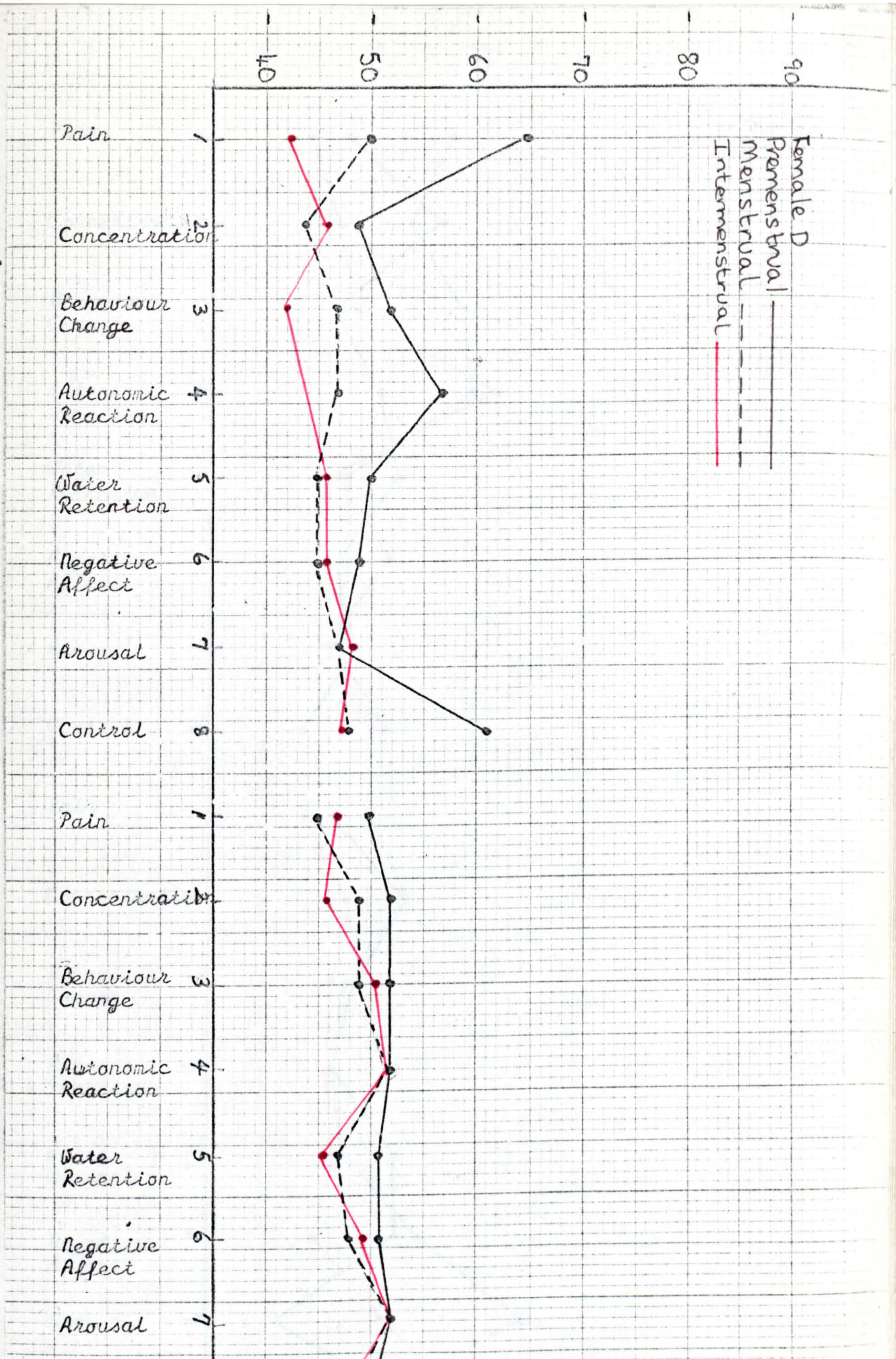
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Premenstrual
Menstrual
Intermenstrual
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Concentration
Behaviour Change
Autonomic Reaction
Water Retention
Negative Affect
Arousal
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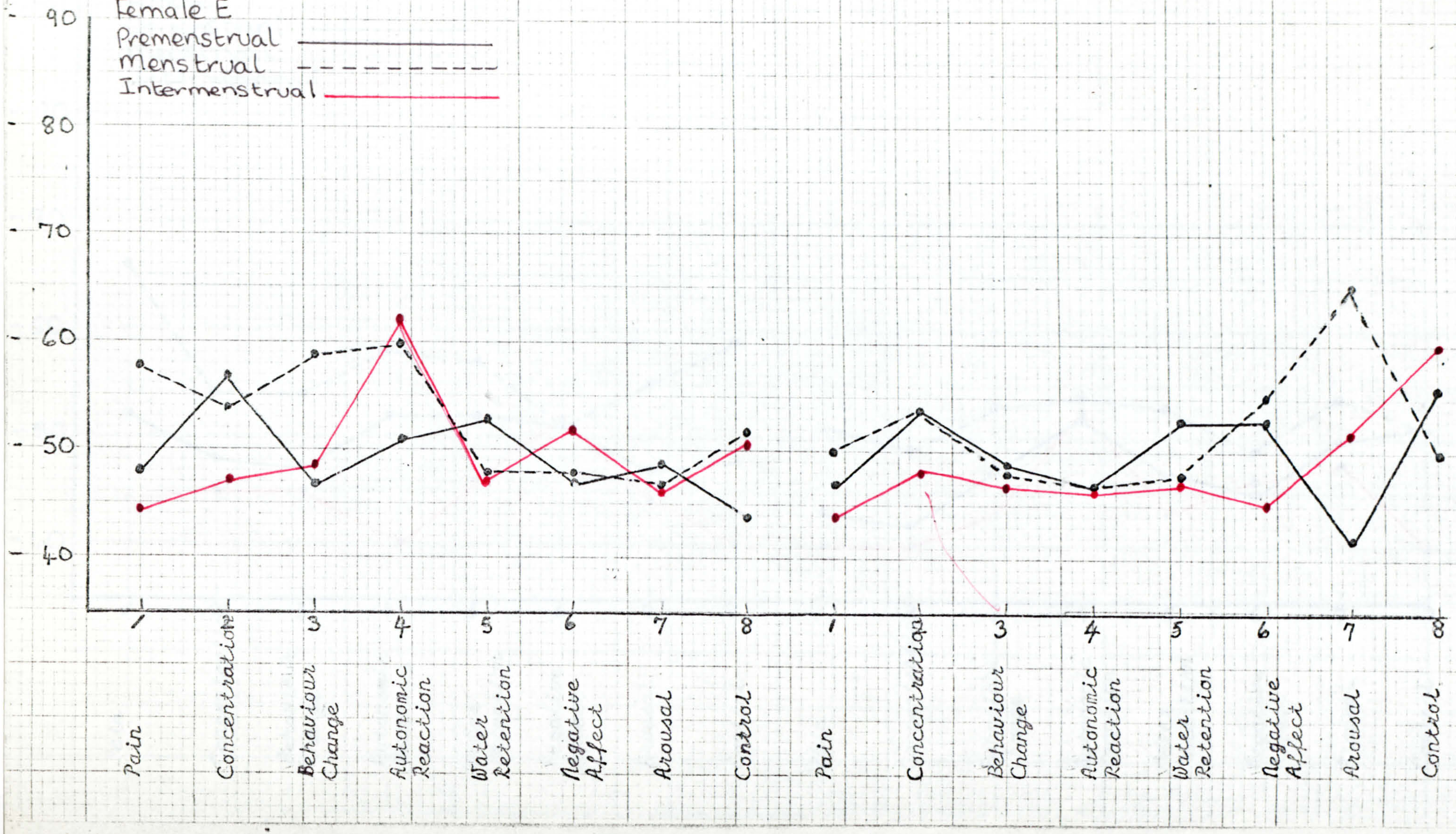
Female E

Premenstrual ——————

Menstrual - - - - - - - - -

Intermenstrual ——————



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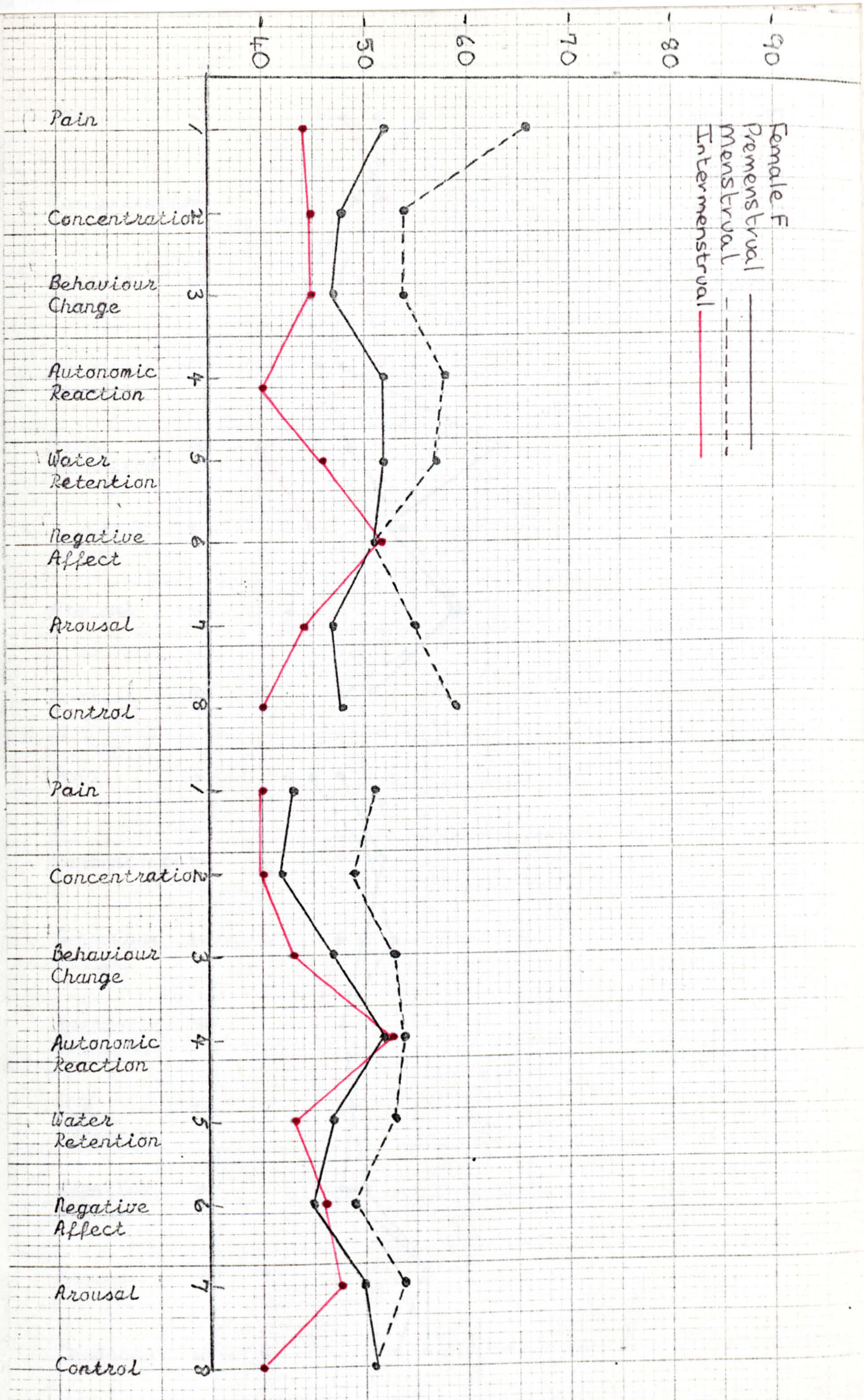
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Female F
Premenstrual
Menstrual
Intermenstrual
Pain
Concentration
Behaviour Change
Autonomic Reaction
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Negative Affect
Arousal
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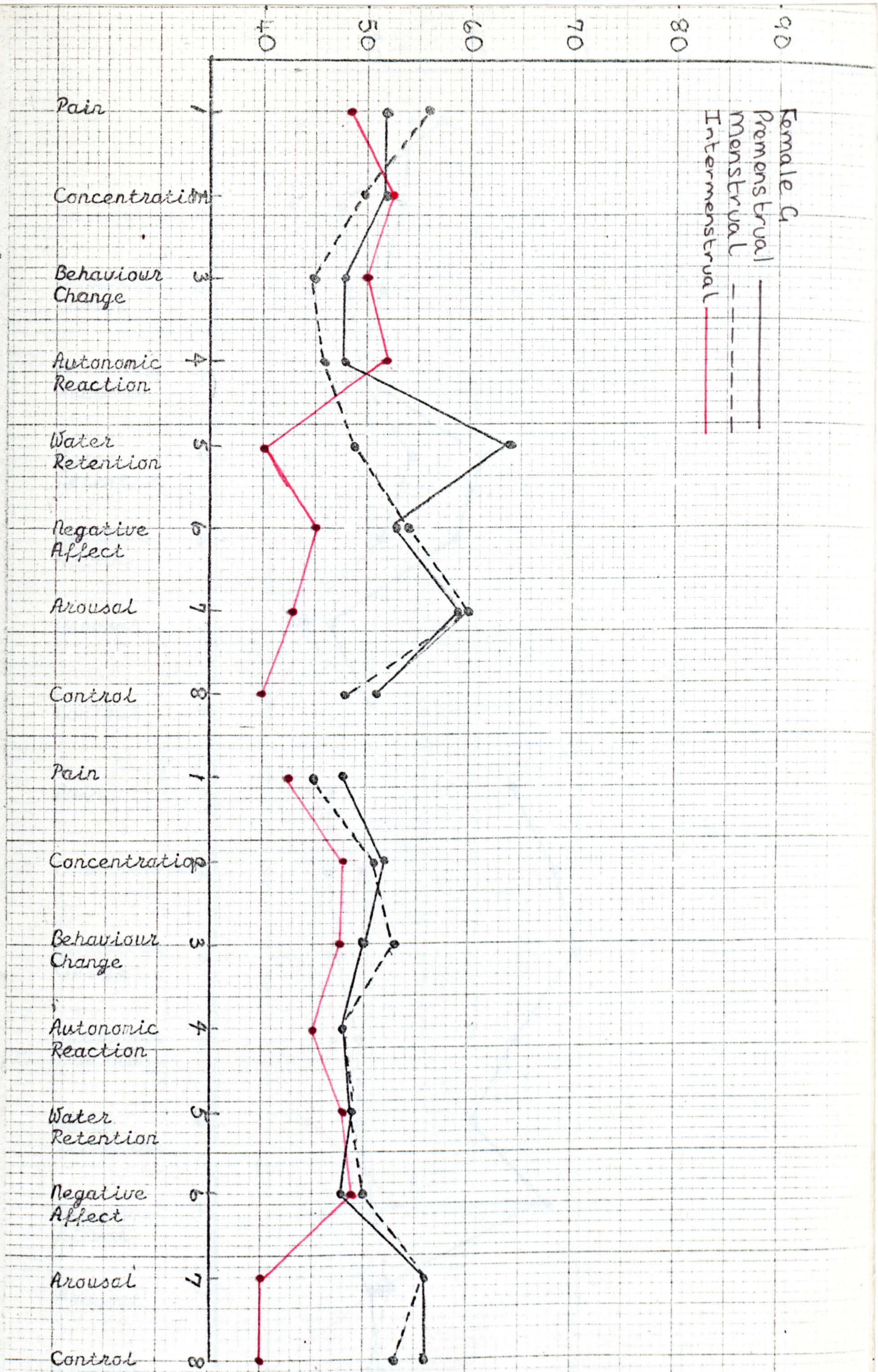
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Female C
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Autonomic Reaction
Water Retention
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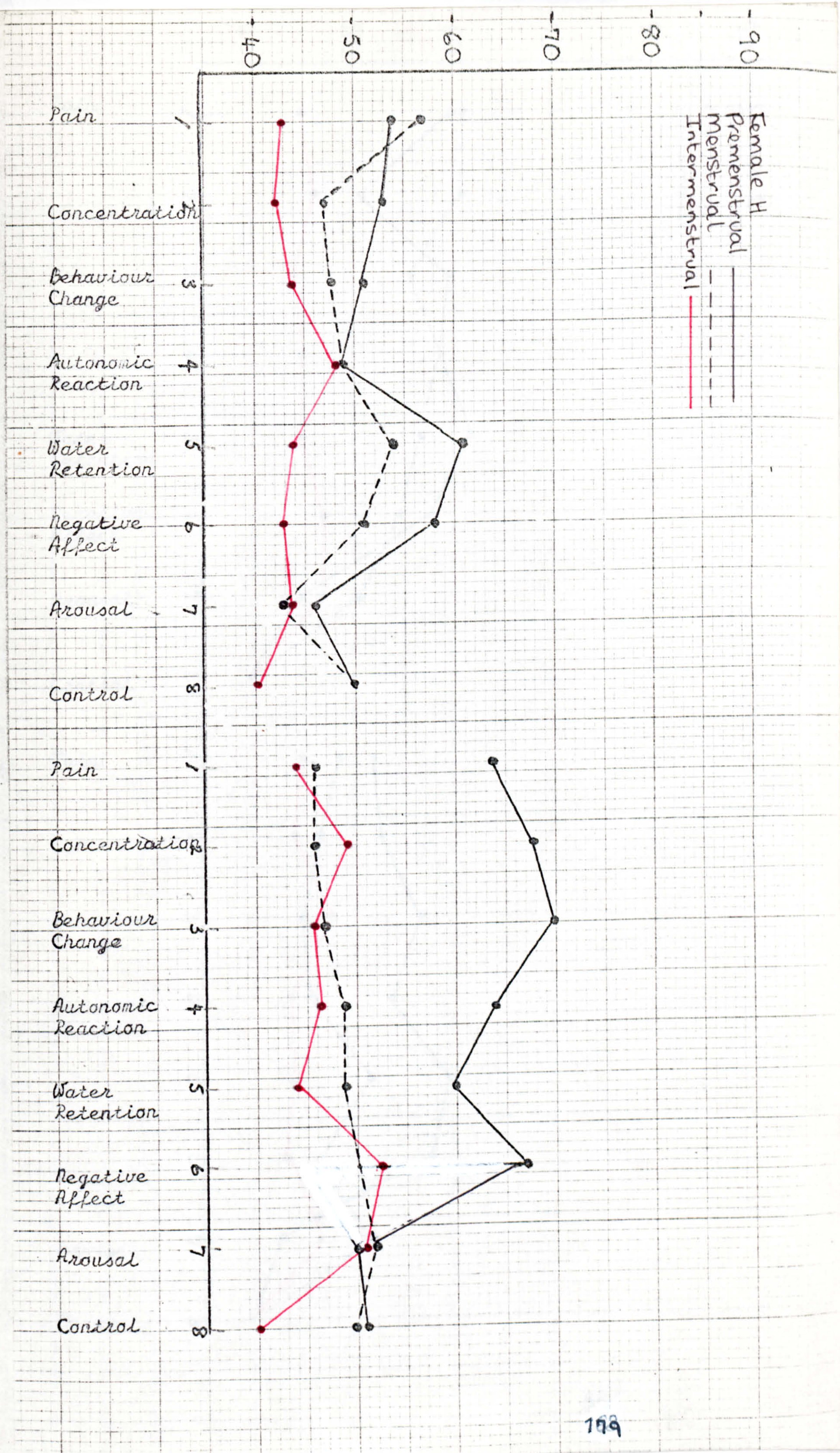
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Pain
Concentration
Behaviour Change
Autonomic Reaction
Water Retention
Negative Affect
Arousal
Control
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Female H
Premenstrual
Menstrual
Intermenstrual

Female I
Premenstrual ——————
Menstrual - - - - - - - -
Intermenstrual ——————

90
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40

1 Pain
2 Concentration
3 Behaviour Change
4 Autonomic Reaction
5 Water Retention
6 Negative Affect
7 Arousal
8 Control

1 Pain
2 Concentration
3 Behaviour Change
4 Autonomic Reaction
5 Water Retention
6 Negative Affect
7 Arousal
8 Control

780

Female J
Premenstrual ——————
Menstrual - - - - - - - -
Intermenstrual ——————

·90
·80
·70
·60
·50
·40

1 Pain
2 Concentration
3 Behaviour Change
4 Autonomic Reaction
5 Water Retention
6 Negative Affect
7 Arousal
8 Control

1 Pain
2 Concentration
3 Behaviour Change
4 Autonomic Reactions
5 Water Retention
6 Negative Affect
7 Arousal
8 Control

781

Female A	25 yrs old		Married	Health Visitor

EPQ scores	P	E	N	L
day 1	2	10	9	1
day 60	2	9	9	2

According to Eysenck's (1975) age norms this subject is slightly low on extroversion, low on neuroticism and very low on the lie scale.

For the first 11 days of the study there were mild fluctuations in symptom reporting on the pain, concentration and arousal scales. By day 14 the subject stated that a menstrual period is expected within the coming 7 days. Mild to moderate symptoms are reported from the pain scale and a high degree of excitement with bursts of energy are experienced from days 15 to 22. Feelings of fatness and painful breasts are reported between days 16 - 23.

Days 25 - 30 menstration takes place. Mild degree of pain, but severe irritability, depression and tension are reported. Also, during the period the subject has strong feelings of affection and excitement.

No significant report of symptoms until day 43 of the study when this subject states that she is due a period within the coming 7 days. She experienced mild degrees of discomfort on the pain scale and had difficulty concentrating by day 47. She had moderate feelings of anxiety and irritability and depression. Days 47 - 49 brought feelings of weight gain, swelling and painful breasts. The subject begun to menstruate on day 50 and her reports of pain, mild distractibility and behaviour change persisted for 3 days into the period.

There are no significant reporting of symptoms after this.

Female B	19 yrs old		Single	Student Nurse
EPQ scores	P	E	N	L
day 1	4	14	14	6
day 60	4	10	18	6

The psychoticism score is slightly elevated and the N score of 18 is high when age and occupation are taken into consideration.

This subject was menstruating for the first 3 days of the study and she complained of strong to acute symptomatology across all scales. She continued to complain unreservedly throughout the remainder of the study, but her water retention score did appear to be markedly higher during menstuation than at other times. This 'type' of woman would no doubt be labelled by Moos as a constant complainer with a tendency to react all the time. The high N score could be implicated.

Female C	33 yrs old		Single	Lecturer
EPQ scores	P	E	N	L
day 1	2	8	8	4
day 60	2	10	10	3

For Eysenck's age norms this subject is slightly low on extroversion and neuroticism and very low on the lie scale. For her occupation she is within the normal range.

Little reporting of symptomatology until day 9 of the study when the subject complained of weight gain, painful breasts and slight irritability. On day 14 we are told that a period is due within 7 days. By day 17, complaints of cramps and muscle stiffness begin to appear, the subject was forgetful and had difficulty concentrating; she continued to experience weight gain symptoms.

On day 18 menstruation commenced and symptoms from the pain, concentration, behaviour change and water retention scales played a significant role until day 22 when they disappeared completely. Menstruation, however,,continued until day 24.

All is calm until day 31 when the subject complained of mild headache, general aches and pains and had difficulty concentrating. Minor ripples in the pain scale occurred until day 41 when we discover that a period is expected and weight gain/swelling symptoms are strongly reported. Between days 42 to 47 there are dramatic increases in the reporting of symptomatology from the pain, concentration, behaviour change, water retention, and negative affect scales. On day 48 menstruation begun and there was a slight decrease in pain, behaviour change and water retention and concentration returned to normal. Water retention and concentration returned to normal. Water retention symptoms continued to cause mild irritation 3 days into the menstrual period but then ceased. The remaining 3 days of menstruation gave no concern.

No reported experience of symptoms during the post menstrual phase.

Female D	20 yrs old		Single	Student
EPQ scores	P	E	N	L
day 1	2	12	8	3
day 60	2	12	8	2

For Eysenck's age norms this woman by comparison is low on neuroticism and on the lie scale. When judged by her occupation she falls within the normal range.

Initially, between days 1 and 6, the MDQ revealed minor fluctuations in the pain scale i.e. general aches and pains. But there are large upheavals in the concentration, behaviour change, water retention and negative affect scales. On day 6 the subject declared that a period was due during the coming week.

Between day 8 to 14 the subject expressed a moderate degree of discomfort mainly from physical symptoms of bloatedness, cramps, headaches and dizziness. This gave rise to a couple of days in bed.

The report of pain symptoms is low and mild until day 18 when they became severe and disabling. On day 20 the subject had dizzy spells and was confined to bed, also complained of blind spots and fuzzy vision. On the 21st day menstruation begun and continued until day 27. There was a significant tail off of reported symptomatology once menstruation was under way.

Apart from the invariable 'off-day' there is no significant report of symptoms for the next 14 days. By day 42 the subject, once again, expects a period. There is a notable, steady build up of symptom severity on all symptom scales except arousal and control. By day 48 the subject appeared to be in some distress complaining of nausea headaches, cramps, dizziness, lowered NAUSEOUS motor co-ordination and irritability and she had the need to stay in bed.

Menstruation occurred between days 50 and 55 and there appeared a remarkable reduction in reported symptoms. For the first two days of the menstrual period there remained a mild degree of distractibility and tension but this disappeared as menstruation continued.

No experience of symptoms thereafter.

Female E 34 yrs old Married Housewife
2 children

EPQ scores	P	E	N	L
day 1	4	10	18	6
day 60	4	12	15	0

High psychoticism and neuroticism score both for her age and occupation. What is very unusual is the dramatic drop in the lie score from day 1 to the day 60 completion.

For the first two days of completion of the MDQ this subject showed herself to be moderately aroused and reported feelings of excitement and well-being. These pleasant emotions are replaced on day 3 by moderate degrees of tension and mood swings. Days 4 and 5 brought general aches and pains, reports of lowered judgement and lack of concentration, and <u>yet</u> there are also reports of excitement and bursts of energy.

On day 8, the subject told us that a period was due and she continued to have general aches and pains plus a strong awareness of anxiety and depression.

The subject begun to menstruate on day 11 and large variations in the pain, concentration, behaviour change and negative affect scales are seen. In mid-menstruum the subject experienced affection and excitement.

During the post menstrual phase, tension, depression and anxiety persisted and reached acute levels on day 20. The high reports of pain and symptoms from the negative affect scales, I feel, may be due to illness which is a additive factor.

Between days 34 and 40 a period is due. The black mood continued and moderate degrees of depression, anxiety and tension are much in evidence, as are reports of a concentration deficit.

The subject begun to menstruate on day 41. For the first 3 days of the period, symptoms from the pain, concentration and negative affect scales are present and the subject maintained that she was acutely depressed and anxious. <u>BUT</u> her scores on the arousal scale are high and show increases in affection and excitement. Scores on the arousal scale stay high until the end of the period.

Between days 48 and 53 reports on the arousal scale diminish significantly and the negative affect scales came to the fore with reports of acute anxiety depression and tension. There is a

sudden abatement of negative affect symptoms on day 53 but they returned in a striking way when they reappeared on day 56 and the subject once again becomes severely anxious.

No experience of symptoms between days 57 to 60.

Female F $18\frac{1}{2}$ yrs old Single Nurse

EPQ scores	P	E	N	L
day 1	1	17	5	3
day 60	2	19	5	5

Higher than average extroversion score and a very low neuroticism score and the lie scale score is also low. It is interesting that the N score remained stable over time whereas all the other scales showed a variation.

For the first 8 days of completing the MDQ, minor fluctuations are shown in the pain, behaviour change and negative affect scales, but there are large upheavals in the water retention and concentration scales. One assumes that the subject is over weight and inclined to spots and pimples as she complained of weight gain and skin disorders thoughout the study. There are reports of strong to acute feelings of excitement, affection and bursts of energy.

Between days 9 and 17 strong to acute aches and pains, cramps and backache are reported. For two days, 16 and 17, the subject experienced lowered motor co-ordination and distractibility to a strong degree and states that her period is imminent. For the first time symptoms from the autonomic reaction scale became evident; the subject felt faint and nauseas. Water retention symptoms continued to present problems and by day 14 they are considered acute. The subject was vaguely irritable and depressed during this week and yet maintained a high degree of arousal. Between day 18 and 25 menstruation took place, and there are complaints of symptoms from all scales to a high degree. In spite of reports of numbness, blind spots and fuzzy vision, the subject maintained her high state of arousal; in fact there is a marked increase in accounts of affection, excitement, feelings of well-being and bursts of energy.

Between days 26 and 34 there are still moderate reports of pain and minor changes in behaviour but significant reductions in severity. Water retention symptoms are consistently related, as are feelings of high arousal.

Except for the ever present water retention and arousal scale

symptomatology there are no adverse manifestations until day 39 when we learn that a period is anticipated. She experienced headaches and cramps and had mild concentration problems. Efficiency decreased, blind spots and fuzzy vision are felt to a mild degree, but consistently for most of the week.

The menstrual period arrived on day 42 and lasted for 7 days, subject experienced a moderate amount of pain, particularly headaches and cramps. The headaches appeared to be of a migraine nature as they are accompanied by nausea and dizziness.

Concentration was moderately affected, as was the behaviour change and negative affect scales. Water retention scores double during the menstrual phases of the period but arousal remained high.

During the post menstrual phase scores on water retention are extremely high. The subject became tense and irritable but to a mild extent only.

Minor upsets on most of the scales until the end of the intermenstrual stage.

Female G	19 yrs old		Single	Nurse
EPQ scores	P	E	N	L
day 1	2	20	4	9
day 60	0	20	4	9

The nil psychoticism score for day 60 is remarkable, as is the low neuroticism but they are consistent within themselves. Extroversion is excessive and is negatively related to the P score. The lie score is also extremely high.

At the commencement of the study this subject stated that she was expecting a period and the scale that showed high scores was that of arousal. Feelings of well-being and excitement are coupled with affection and bursts of activity. Milder degrees of upheaval are shown in the pain, concentration and water retention scales. Two days before the start of menstruation there was a marked increase in the report of painful breasts and swelling.

Menstruation begun on day 8 and pain in the form of cramps and backache reached their peak on the second day of the period and thereafter diminish, leaving a feeling of mild fatigue. Distractibility also became evident on the second day of menstruation and then ceased to be a problem. Water retention symptoms disappeared as soon as menstruation commenced and arousal weakens a little but continued to remain moderate until 2 days cessation of menstruation.

There was no significant report of symptoms until day 20 when the subject complained of headaches and muscle stiffness to a strong degree. Her concentration was impaired and she stayed at home. A moderate degree of irritability and restlessness was apparent also. This, however, disappeared after a day.

By day 28 menstruation was expected within the coming 7 days. Very mild fluctuations in pain, water retention and negative affect scales. Menstruation begun on day 35 and lasted for 6 days. This is a much milder period than the previous one, mild aches and pains coupled with painful breasts are the only symptoms accounted for.

On day 49 the subject experienced mood swings and became irritable, stated that a period was due. General aches and pains, mild

breast discomfort and irritability became more evident towards the end of the study period.

Female H	26 yrs old		Married 1 child	Librarian
EPQ scores	P	E	N	L
day 1	5	15	6	1
day 60	7	14	8	1

The psychoticism score here is abnormally high whilst neuroticism is very low as is the lie score. Aggressiveness and hostility, which are two of the main contributors to P (Eysenck 1970) are traditionally male characteristics, and consequently we would expect men to have higher P scores than women. Standardization data (Eysenck 1975) indicates that this theory is borne out very clearly. One would expect these traits and related ones to merge in a person's sexual attitude, and analyses conducted by Eysenck (1975) indicates that there is indeed a close connection between P and masculine patterns of attitudes and behaviours. This female respondent would no doubt be interested to learn in this connection that criminality is related to high P scoring. Female criminals have been found to have excessively high P scores, even exceeding those of male criminals! That this may not be a true psychotic personality is indicated by the fact that psychotics tend to have elevated lie scores and a high N component. Neither is true in this case.

During the first week of filling out the MDQ female H was subject to mood swings and slight depression. She revealed on day 8 that a menstrual period was due and there was a gradual increase in symptom severity from day 10 when backache fatique and cramps are experienced to a moderately high degree. The subject felt accident prone, forgetful and motor co-ordination was lowered. All this resulted in a general decreased efficiency and the subject stayed at home. Symptoms from the water retention scale are heavily endorsed as are acute feelings of loneliness and anxiety. The subject appeared very depressed and cried a lot.

This subject menstruated between days 14 and 20. The pain symptoms persisted at a high level, as did symptoms from the negative affect scale for the first 4 days of the period, thereafter disappeared. Lack of concentration and decreased efficiency are experienced on the first 2 days of the period only. Feelings of bloatedness are also moderately felt for the first 2 days and

then tail off. By the last day of the period a mild restlessness was the only symptom remaining.

Between days 21 and 35 there are moderate degrees of affection and excitement. On day 35 the subject became depressed and tense. Between days 36 and 42 all scales except arousal and control are heavily endorsed. There are reports of severe pain, distractibility, dizziness and nausea coupled with swelling, painful breasts, depression mood swings and irritability. All have a very debilitating effect and the subject spent 3 days in bed. By day 41 all symptoms seemed to have decreased dramatically and only moderate feelings of tension remained.

Menstruation began on day 43 and lasted 6 days. Very little report of symptoms except those from the water retention scale which remained moderately high for the first 2 days of menstruation and then disappeared.

From days 50 - 60 the subject simultaneously reported high anxiety, restlessness, affection and orderliness. Thereafter there was no significant report of symptoms.

Female I	36years old		Married 2 Children	Shop Assistant

EPQ Scores	P	E	N	L
Day 1	3	18	10	0
Day 60	2	20	10	0

The Extroversion score for female I is high by about 8 points according to Eysenck's age and occupation norms, and the Neuroticism score is comparitively low but only by 3 points. The most interesting result here is the nil return for the Lie scale which is most unusual. It is clear that the Lie scale possesses a considerable degree of factorial unity, with individual items having high loadings on this factor, and on no other; however, there are certain difficulties in regarding scores as nothing but indicators of dissimulation. The main difficulty seems to be that in addition to measuring dissimulation, the L scale also measures some stable personality factor which may possibly denote some degree of social naivete. Unfortunately little is known about the precise nature of this factor.

During the first 10 days of the study the subject was moderately aroused in terms of orderliness, bursts of energy and excitement. Only on day 8 was work performance lowered and irritability and depression experienced. Between days 11 and 19 there was an almost imperceptible rise in the report of symptomatology across the spectrum. Mild aches and pains and lowered concentration together with a feeling of faintness, weight gain, skin disorders and tense irritability. In spite of all this, the subject reported a high degree of orderliness and bursts of energy.

On day 21 the subject reported the imminent arrival of a period and her general condition appeared to worsen with reports of increased weight gain, fatique and headaches. Concentration was affected and the subject took naps and avoided social activities. Symptoms from the negative affect scale are reported on an escalating degree until they reach acute levels on days 23 and 24.

Menstruation commenced on day 27. Pain and negative affect symptoms are strong enough to warrant confinement to bed. This subject experienced very high weight gain and painful breasts. Nearing the end of the menstrual period feelings of well being and affection begun to reappear.

Except for an increase in feelings of affection and excitement, there was no significant report of adverse symptoms until day 49, when there was evidence of slightly impaired concentration and behaviour change in the form of decreased efficiency and avoidance of social activities. Water retention was also slightly higher.

Between days 50 and 55 a menstrual period was impending and the report of water retention symptoms begun to increase in severity as do degative affect symptomatology and by day 52 they are strong to severe. Reports from the pain, concentration, behaviour change and autonomic reaction scales also showed a marked increase.

Menstruation took place between days 56 to 60. For the first 2 days of the period, pain, water retention and negative affect stayed at a fairly moderate level, but then diminished as the flow continued. Arousal symptoms increased in strength as menstruation comes to a close.

Female I	24 yrs old		Single	Typist
EPQ scores	P	E	N	L
day 1	2	10	20	4
day 60	1	12	17	2

Here, of course, the first noticeable score is neuroticism which is high. Secondly, scores from each of the EPQ scales alter from one completion to the next. This subject was in her premenstruum when she begun to fill out the MDQ which could account for the elevated scores on the EPQ for the first time.

Symptoms from the pain scale are heavily endorsed from day 1 and these affect concentration and behaviour (avoids social activities). There was a gradual increase in tension and irritability which became high by day 3.

Menstruation begun on day 4 and all reports of adverse symptoms ceased almost immediately.

There was no significant report of symptoms until day 26 when another menstrual period was expected. There was an increase in the report of symptoms especially in the areas of pain, behaviour change, water retention and negative affect scales. These increased in strength and became severe about 3 days before menstruation. Complaints from the concentration scale join those already mentioned and are experienced strongly.

On day 35 menstruation commenced and as before there was a drastic fall in the report of symptoms. Irritability and mood swings affected the subject to a mild extent for the first 3 days of the period and a lowered work performance was felt, but thereafter, all was calm.

Between days 49 and 54 there was a characteristic slow build-up of adverse reaction on all scales except autonomic reactions, arousal and control.

The subject expected a period and symptoms from the pain, concentration, water retention and negative affect scales are confirmed once again.

Male 1	27 years old			Single	Teacher
EPQ Score	P	E	N	L	
Day 1	6	2	13	7	
Day 60	4	2	13	8	

According to Eysenck's age and occupation norms the psychoticism score on the first completion for the subject is 3 points above the norm. The extroversion score borders on the abnormal and would be more appropriate for a hermit ! However, for the first 10 days of the study this subject complained to a very high degree on the pain and negative affect scales. There are miniscule ripples in the concentration and arousal scales until day 14. In fact, those few days marked the high spot of this man's study time span, because by day 19 his concentration is badly affected and he becomes slightly irritable and depressed.

From day 25 to 31 symptoms from the negative affect scale are very much in evidence and experienced to a strong degree. All other scales on the Menstrual Distress Questionnaire remained stable until day 33 when symptoms from the behaviour change scale are reported and the subject's irritability and depression increased. By day 39 symptoms from the pain scale are once more being reported although only on a mild basis. A moderate degree of moodiness and tension accompany these feelings. This low state lasts for 10 days and reports of pain symptoms become less. Strong feelings of depression, however, are with this subject until the end of the study.

Male 2 27 years old Married Teacher
1 child

EPQ Scores	P	E	N	L
Day 1	2	18	4	0
Day 60	5	16	3	0

When one looks at the EPQ scores for this subject, we are immediately drawn to., firstly, the change in scores over time, particularly the psychoticism score, which goes up by 3 points. Secondly, the neuroticism score is extremely low and the lie score non-existent. At the same time the extroversion score is slightly high, but not abnormally so. All this points to a carefree, optimistic type, fairly sociable and outgoing. The low N score indicates a thoughtful and reliable person. The relatively high psychoticism score for day 60 reflected on an extrovert personality reveals that this subject could be restless, aggressive and change able at times. The nil lie score, although unusual, is not unknown and is sometimes apparent in the discerning subject who 'reads' the test items very carefully.

During the first 8 days of report on the MPQ a mild degree of pain, moderate fluctuations in the concentration and behaviour change scales are shown. In spite of strong feelings of fatigue, tension and irritability during the first 2 days of the study, large upheavals are apparent in the arousal scale.

During the following 10 days arousal increased and concentration decreased, thereafter a fairly stable equilibrium was maintained until day 20 when concentration, once again, deteriorated and the subject became tense and depressed. Between days 25 and 53 reports from the pain and concentration scales fluctuated continuously, sometimes reaching levels of strong and acute. During this 18 day period of time there are definite changes happening in the other scales. For 8 days (36-44) the subject stayed at home and avoided social activities.

Between days 39 and 42 acute feelings of moodiness and depression are noted and these gave way to feelings of well-being and bursts of energy on day 43.

This subject's emotions appeared to be in constant flux, difficulty in concentration and strong arousal are never far away, as are reports of restlessness and tension.

Male 3 28 years old Single Teacher

EPQ Scores	P	E	N	L
Day 1	0	8	18	2
Day 60	3	10	18	3

The first notable score on the EPQ is the one of neuroticism which is high by Eysenck's standards by 9 points. It is very interesting that the N score remained stable whereas scores on all other scales varied, for example, the P score comes from zero to 3, the E scale score gained 2 points and the lie scale lost 1. Eysenck (1960) maintains that the N factor is closely related to the inherited degree of lability of the autonomic nervous system while the E factor is closely related to the degree of excitation and inhibition prevalent in the central nervous system. The high N score here, operates almost to the exclusion of the extroversion factor revealing an anxious individual, moody and frequently depressed. This personality is demonstrated further when the daily scores on the Menstrual Distress Questionnaire are reviewed.

For the first 3 days of the study the subject reported acute depression and feelings of anxiety accompanied by strong pain which continued for a further 5 days. Symptoms from the arousal scale during this time, appeared and disappeared from day-to-day. On day 4 strong feelings of affection and excitement are reported. Relative calm existed until day 12 when headaches and feelings of fatique are reported together with anxiety, depression and tension. Feelings of well-being and affection make an appearance between days 17 and 19.

Once again there is a lull with no significant report of symptoms until day 31 when endorsements from the pain scale are frequent and moderate in severity, lasting for 5 days. The subject feels moody and uneasy from day 40, but reports from the arousal scale became more frequent and strong and his emotional well-being is assured until day 56 when general aches and pains, poor concentration, feeling irritable and tense, even heart pounding and chest pains conspire to lower his outlook.

Male 4 22 years old Single Student

EPQ Scores	P	E	N	L
Day 1	3	3	10	9
Day 60	4	2	12	9

The lie score is high and the extroversion score very low. According to Eysenck there is considerable evidence to show that a score of 10 or above on the lie scale shows that 'faking good' is likely to have occurred and that the E and particularly the N scores should be regarded with scepticism. It is clear that the scale possesses a considerable degree of factorial unity, with individual items having high loadings on this factor, and on no other (Michaelis and Eysenck, 1971). However, there are certain difficulties in regarding scores as nothing but indicators of dissimulation.. The main difficulty seems to be that in addition to measuring dissimulation, the Lie scale also measures some stable personality factor which may denote some degree of social naivete. Unfortunately, little is known about the precise nature of this function. However, when the scores on the MDQ are examined, a very stable, controlled individual is described.

For the first 2 days of the study the subject reported general aches and pains, distractibility and decreased efficiency. As for the rest of the study his report of symptomatology rarely fluctuates beyond one point either way. However, he maintained a high state of arousal throughout the 60 day period, being very affectionate and excited, while maintaining a state of well-being with high bursts of energy.

Between days 11 and 17 this subject was troubled by a skin disorder which loaded the water retention scale for that time.

Male 5	41 years old		Divorced 2 children	Psychologist

EPQ Scores	P	E	N	L
Day 1	6	5	14	2
Day 60	5	4	13	1

The very low Extroversion score for this subject is inconguent with the high Psychoticism and Neuroticism scores. Aggressiveness and hostility, which are two of the main contributors to P, are traditionally male characteristics, and consequently we would expect men to have higher P scores than women. Eysenck's standardization data bear this out clearly. One would also expect these traits and related ones of impersonal attitudes, lack of socializing constraints and strong libido, and indeed, there is a close connection between P and the findings on the MDQ with regards to excitability and affection. The low E and high N scores indicate a quiet, reserved type, moody and frequently deptessed. This also is reflected in the MDQ profile.

The first 8 days saw moderate reports on the pain scale revealing headaches and fatigue. There are high degrees of forgetfulness, lowered judgement and difficulty in concentration. The negative affect scale figures largely, and showed significant mood swings, anxiety and depression.

Between days 9 and 24 a fairly low mood state seemed to prevail - mild to moderate degrees of fatigue and general aches and pains. This was consistent with high reports of irritability, anxiey and tension.

By day 29 a concentration deficit was noticeable and termed 'acute' by the subject. Loneliness and depression are also noted. These feelings lasted for 4 days.

Again from day 44-49 a similar cluster of symptoms was reported. For the remainder of the study period, a calm, sober outlook was apparent. However, throughout the 60 days the subject maintained a high level of affection and excitement.

Male 6 | 30 years old | Married, 2 children | Occupational Therapist

EPQ Scores	P	E	N	L
Day 1	4	13	10	1
	6	13	13	0

Except for the elevated Psychoticism score for the second completion of the EPQ, all the other scores are within the normal range.

Throughout the study the subject reported 'no experience of symptoms' from the autonomic reaction, water retention or control scales. But, he complained consistently on all the other scales from day 1 and day 60. In spite of his apparent lack of well-being, this subject reported feelings of excitement and affection with bursts of energy almost continuously.

Male 7 23 years old Single Student

EPQ Scores	P	E	N	L
Day 1	2	18	7	6
Day 60	1	18	4	9

The Psychoticism score is low for a man of this age, as is the Neuroticism score. The Extroversion score, however, is high and points to an active, sociable, possibly restless individual, not given to reacting too strongly to stimuli and on the whole, a fairly well-balanced person.

Scores on the MDQ revealed a person who may have been subject to some sort of mood cycle-related behaviour. During the first 8 days of the study mild upheavals on the concentration and negative affect scales are shown. From day 9 to 13 headaches, muscle stiffness and fatigue are reported, as are strong feelings of tension and moodiness. Mild ripples in the concentration and behaviour change symptom scales are also revealed. The subject maintained this debilitating state until day 30 when all reports on the pain scale ceased for the remainder of the time period.

From day 39 there were signs of distractibility and the negative affect scale reflected strong to acute depression and anxiety. During this phase little experience of symptoms in the arousal scale was reported. This was the only time as before day 39 and after day 48 this subject maintained a high level of affection and well-being. However, from day 39 mood swings and depression continued at a high and intense pitch for the remainder of the study time.

Male 8 | 27 years old | Married, 1 child | Bookseller

EPQ Scores	P	E	N	L
Day 1	4	11	10	5
Day 60	5	11	10	6

This subject falls well within the 'normal' range for all his scores on the EPQ. He is, however, reflected as a rather melancholic character, prone to pain and tiredness. Indeed general aches and pains and severe fatigue are reported on the MDQ from day 4 of the study. By days 7 and 8 he experienced decreased efficiency and lower work performance. These feelings increased to a strong level and the subject became depressed, tense and anxious.

From day 17 there was a tailing off of pain symptoms but the negative affect persist and are experienced through out the study. By day 23 significant reports on the pain symptom scale appeared again and are from moderate to acute until day 32 when once again they dissipated.
On day 41 symptoms from the pain scale are again in evidence to a strong degree and concentration was affected quite markedly.
A short respite from pain symptoms between days 49 and 53 and then general aches and pains, headaches and fatigue returned on a mild to moderate scale until day 60.
Lowered judgement, insomnia and distractibility prevailed during this phase.

Male 9 22 years old Single Nurse

EPQ Scores	P	E	N	L
Day 1	6	19	3	1
Day 60	6	19	0	0

All scores on each scale of the EPQ are either markedly high (Psychoticism and Extroversion) or extremely low (Neuroticism and Lies) according to Eysenck's norms. It was very difficult to assess how personality dimensions may or may not have a bearing on this subject's mood/behaviour as for the first 34 days of the study he reported 'no experience of symptoms' on any of the 8 scales of the MDQ. This, of course, may be indicative of some personality trait in itself. The high E score points to a lively, easy going sociable type; this coupled with the very low N score would very probably show the picture we receive from the MDQ.

On days 36, 37 and 38 this subject experienced mild anxiety and on day 42 he had a moderately difficult time concentrating. It was not until the last 7 days of the time period that headaches and fatigue appeared. The subject could not concentrate, was dizzy and nause . and stayed at home in bed. One feels that the subject became ill during this week and the symptoms he then experienced were reflective of an illness not a regular change in his body/hormonal system.

Male 10 | 23 years old | Married | Social Worker

EPQ Scores	P	E	N	L
Day 1	10	12	11	7
Day 60	10	12	11	6

Psychoticism scores of this magnitude are only obtained by psychotics in Eysenck's sample, the Neuroticism score however, is low for an abnormal sample. It is interesting that these scores remain exactly the same from the first completion to the second, some two months later.

When we look at the report of symptoms on the MDQ no real pattern emerged except that the subject complained consistently througout the study on <u>all</u> scales. He regularly reported skin disorders which added to his water retention scale score. Symptoms from the control scale are reported throughout, which suggested that this individual may have complained for the sake of complaining. The control scale is composed of items which have a very low frequency of endorsement and which may reflect a general tendency to complain of a variey of symptoms irrespective of whether or not they are usually associated with mood change (Moos 1968).

APPENDIX 2

1. The Original Moos Menstrual Distress Questionnaire.

2. The Revised Form T of the MDQ.

3. The Eysenck Personality Questionnaire.

Menstrual Distress Questionnaire

Form A

Name _____ Marital Status _____

Age _____ Number of Children _____

Today's Date _____ Occupation _____

Write the approximate dates of your most recent menstrual period (flow) in the space marked "A" below. Then write the dates of the menstrual period which preceded the most recent one in the space marked "D".

from ____ to ____	other times during most recent cycle	week before most recent flow	most recent flow from ____ to ____
D	C	B	A

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

Col. 1 during your most recent menstrual flow (the dates delineated by area A on the diagram above),

Col. 2 during the one week before your most recent menstrual flow (area B on the diagram),

Col. 3 during the remainder of your most recent menstrual cycle (area C)

Note: The answers you put in columns 1, 2, and 3 should be accurate for your experience specifically during your most recent menstrual cycle. Please do not simply report your general experience. Also, please report any experience of these symptoms whether or not they seem to you to be related to your menstrual cycle.

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

Descriptive Categories

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

	1. most recent flow (A)	2. week before (B)	3. remainder of cycle (C)
1. Weight gain			
2. Insomnia			
3. Crying			
4. Lowered school or work performance			
5. Muscle stiffness			
6. Forgetfulness			
7. Confusion			
8. Take naps or stay in bed			
9. Headache			
10. Skin disorders			
11. Loneliness			
12. Feelings of suffocation			
13. Affectionate			
14. Orderliness			
15. Stay home from work or school			
16. Cramps (uterine or pelvic)			
17. Dizziness or faintness			
18. Excitement			
19. Chest pains			
20. Avoid social activities			
21. Anxiety			
22. Backache			
23. Cold sweats			

	1. most recent flow (A)	2. week before (B)	3. remainder of cycle (C)
24. Lowered judgment			
25. Fatigue			
26. Nausea or vomiting			
27. Restlessness			
28. Hot flashes			
29. Difficulty in concentration			
30. Painful or tender breasts			
31. Feelings of well-being			
32. Buzzing or ringing in ears			
33. Distractable			
34. Swelling (e.g. abdomen, breasts or ankles)			
35. Accidents (e.g. cut finger, break dish)			
36. Irritability			
37. General aches and pains			
38. Mood swings			
39. Heart pounding			
40. Depression (feeling sad or blue)			
41. Decreased efficiency			
42. Lowered motor coordination			
43. Numbness or tingling in hands or feet			
44. Change in eating habits			
45. Tension			
46. Blind spots or fuzzy vision			
47. Bursts of energy or activity			

In what ways, if any, was your most recent menstrual cycle unusual?

MENSTRUAL DISTRESS QUESTIONNAIRE

Form T

Name _____

Today's Date _____

On the next two pages is a list of symptoms which women sometimes experience. For each symptom choose the descriptive category listed below which best describes your experience of that symptom today. Circle the number of the category which best describes your experience of the symptom today. Even if none of the categories is exactly correct, choose the one that best describes your experience. Please be sure to circle one number for each symptom. Please also remember to put your name and the date in the blank spaces at the top of this page.

Descriptive Categories

1. No reaction at all
2. Barely noticeable
3. Present, mild
4. Present, moderate
5. Present, strong
6. Acute or partially disabling

1. Weight gain	1	2	3	4	5	6
2. Insomnia.	1	2	3	4	5	6
3. Crying	1	2	3	4	5	6
4. Lowered school or work performance ...	1	2	3	4	5	6
5. Muscle stiffness	1	2	3	4	5	6
6. Forgetfulness	1	2	3	4	5	6
7. Confusion	1	2	3	4	5	6
8. Take naps or stay in bed	1	2	3	4	5	6
9. Headache	1	2	3	4	5	6
10. Skin disorders	1	2	3	4	5	6
11. Loneliness	1	2	3	4	5	6
12. Feelings of suffocation	1	2	3	4	5	6
13. Affectionate	1	2	3	4	5	6
14. Orderliness	1	2	3	4	5	6
15. Stay home from work or school	1	2	3	4	5	6
16. Cramps (uterine or pelvic)	1	2	3	4	5	6
17. Dizziness or faintness	1	2	3	4	5	6
18. Excitement	1	2	3	4	5	6
19. Chest pains	1	2	3	4	5	6

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	No reaction	Barely noticeable	Mild	Moderate	Strong	Acute
20. Avoid social activities	1	2	3	4	5	6
21. Anxiety	1	2	3	4	5	6
22. Backache	1	2	3	4	5	6
23. Cold sweats	1	2	3	4	5	6
24. Lowered judgment	1	2	3	4	5	6
25. Fatigue	1	2	3	4	5	6
26. Nausea or vomiting	1	2	3	4	5	6
27. Restlessness	1	2	3	4	5	6
28. Hot flashes	1	2	3	4	5	6
29. Difficulty in concentration	1	2	3	4	5	6
30. Painful or tender breasts	1	2	3	4	5	6
31. Feelings of well-being	1	2	3	4	5	6
32. Buzzing or ringing in ears	1	2	3	4	5	6
33. Distractable	1	2	3	4	5	6
34. Swelling (e.g. abdomen, breasts, ankle)	1	2	3	4	5	6
35. Accidents (e.g. cut finger, break dish)	1	2	3	4	5	6
36. Irritability	1	2	3	4	5	6
37. General aches and pains	1	2	3	4	5	6
38. Mood swings	1	2	3	4	5	6
39. Heart pounding	1	2	3	4	5	6
40. Depression (feeling sad or blue)	1	2	3	4	5	6
41. Decreased efficiency	1	2	3	4	5	6
42. Lowered motor coordination	1	2	3	4	5	6
43. Numbness or tingling in hands or feet	1	2	3	4	5	6
44. Change in eating habits	1	2	3	4	5	6
45. Tension	1	2	3	4	5	6
46. Blind spots or fuzzy vision	1	2	3	4	5	6
47. Bursts of energy or activity	1	2	3	4	5	6

Department of Social Science and Humanities

THE CITY UNIVERSITY

FORM T

Today's Date ..... Sex .....

Number of Children ..... Age .....

Occupation ..... Marital Status .....

Listed below is a selection of symptoms which people sometimes experience. For each symptom choose and put a circle around the NUMBER which best describes your experience of that symptom TODAY.

No experience of symptom - 1
Mild - 2
Moderate - 3
Strong - 4
Acute/Disabling - 5

	No Experience of Symptom	Mild	Moderate	Strong	Acute/ Disabling
Muscle stiffness	1	2	3	4	5
Headache	1	2	3	4	5
Cramps	1	2	3	4	5
Backache	1	2	3	4	5
Fatigue	1	2	3	4	5
General aches and pains	1	2	3	4	5
Insomnia (sleeplessness)	1	2	3	4	5
Forgetfulness	1	2	3	4	5
Confusion	1	2	3	4	5
Lowered judgement	1	2	3	4	5
Difficulty concentrating	1	2	3	4	5
Easily distracted	1	2	3	4	5
Accident prone	1	2	3	4	5
Clumsy	1	2	3	4	5
Lowered school or work performance	1	2	3	4	5

..../

	No Experience of Symptom	Mild	Moderate	Strong	Acute/ Disabling
Take naps, stay in bed	1	2	3	4	5
Stay at home	1	2	3	4	5
Avoid social activities	1	2	3	4	5
Less capable	1	2	3	4	5
Dizziness, faintness	1	2	3	4	5
Cold sweats	1	2	3	4	5
Feeling of being sick	1	2	3	4	5
Hot flushes	1	2	3	4	5
Weight gain	1	2	3	4	5
Skin troubles - spots	1	2	3	4	5
Painful breasts/chest	1	2	3	4	5
Swelling	1	2	3	4	5
Crying	1	2	3	4	5
Loneliness	1	2	3	4	5
Anxiety	1	2	3	4	5
Restlessness	1	2	3	4	5
Irritability	1	2	3	4	5
Mood swings	1	2	3	4	5
Depression	1	2	3	4	5
Tension	1	2	3	4	5
Affectionate	1	2	3	4	5
Orderliness	1	2	3	4	5
Excitment	1	2	3	4	5
Feelings of well being	1	2	3	4	5
Burst of energy	1	2	3	4	5
Feelings of suffocation	1	2	3	4	5
Chest pains	1	2	3	4	5
Ringing in the ears	1	2	3	4	5
Heart pounding	1	2	3	4	5
Numbness, tingling	1	2	3	4	5
Blind spots, fuzzy vision	1	2	3	4	5

1. Are you taking Oral Contracepties (The Pill) ? .....
2. Are you taking Drugs/Medication of any description,
   if so, what are they and why are you taking them? .....
   .....

E.P.Q. (Adult)

Occupation .....

Age ..... Sex.....

INSTRUCTIONS Please answer each question by putting a circle around the "YES" or the "NO" following the question. There are no right or wrong answers, and no trick questions. Work quickly and do not think too long about the exact meaning of the questions.

PLEASE REMEMBER TO ANSWER EACH QUESTION

1	Do you have many different hobbies?	YES	NO
2	Do you stop to think things over before doing anything?	YES	NO
3	Does your mood often go up and down?	YES	NO
4	Have you ever taken the praise for something you knew someone else had really done?	YES	NO
5	Are you a talkative person?	YES	NO
6	Would being in debt worry you?	YES	NO
7	Do you ever feel "just miserable" for no reason?	YES	NO
8	Were you ever greedy by helping yourself to more than your share of anything?	YES	NO
9	Do you lock up your house carefully at night?	YES	NO
10	Are you rather lively?	YES	NO
11	Would it upset you a lot to see a child or an animal suffer?	YES	NO
12	Do you often worry about things you should not have done or said?	YES	NO
13	If you say you will do something, do you always keep your promise no matter how inconvenient it might be?	YES	NO
14	Can you usually let yourself go and enjoy yourself at a lively party?	YES	NO
15	Are you an irritable person?	YES	NO
16	Have you ever blamed someone for doing something you knew was really your fault?	YES	NO
17	Do you enjoy meeting new people?	YES	NO
18	Do you believe insurance schemes are a good idea?	YES	NO
19	Are your feelings easily hurt?	YES	NO
20	Are *all* your habits good and desirable ones?	YES	NO

PLEASE TURN OVER

21 Do you tend to keep in the background on social occasions?.....YES

22 Would you take drugs which may have strange or dangerous effects?.....YES

23 Do you often feel "fed-up"?.....YES

24 Have you ever taken anything (even a pin or button) that belonged to someone else?.....YES

25 Do you like going out a lot?.....YES

26 Do you enjoy hurting people you love?.....YES

27 Are you often troubled about feelings of guilt?.....YES

28 Do you sometimes talk about things you know nothing about?.....YES

29 Do you prefer reading to meeting people?.....YES

30 Do you have enemies who want to harm you?.....YES

31 Would you call yourself a nervous person?.....YES

32 Do you have many friends?.....YES

33 Do you enjoy practical jokes that can sometimes really hurt people?.....YES

34 Are you a worrier?.....YES

35 As a child did you do as you were told immediately and without grumbling?.....YES

36 Would you call yourself happy-go-lucky?.....YES

37 Do good manners and cleanliness matter much to you?.....YES

38 Do you worry about awful things that might happen?.....YES

39 Have you ever broken or lost something belonging to someone else?.....YES

40 Do you usually take the initiative in making new friends?.....YES

41 Would you call yourself tense or "highly-strung"?.....YES

42 Are you mostly quiet when you are with other people?.....YES

43 Do you think marriage is old-fashioned and should be done away with?.....YES

44 Do you sometimes boast a little?.....YES

45 Can you easily get some life into a rather dull party?.....YES

46 Do people who drive carefully annoy you?.....YES

47 Do you worry about your health?.....YES

48 Have you ever said anything bad or nasty about anyone?.....YES

49 Do you like telling jokes and funny stories to your friends?.....YES

50 Do most things taste the same to you?.....YES

51 As a child were you ever cheeky to your parents?.....YES

52 Do you like mixing with people?.....YES

53 Does it worry you if you know there are mistakes in your work?.....YES

54 Do you suffer from sleeplessness?.....YES

NO 55	Do you always wash before a meal?.....	YES	NO
NO 56	Do you nearly always have a "ready answer" when people talk to you?.....	YES	NO
NO 57	Do you like to arrive at appointments in plenty of time?.....	YES	NO
NO 58	Have you often felt listless and tired for no reason?.....	YES	NO
NO 59	Have you ever cheated at a game?.....	YES	NO
NO 60	Do you like doing things in which you have to act quickly?.....	YES	NO
NO 61	Is (or was) your mother a good woman?.....	YES	NO
NO 62	Do you often feel life is very dull?.....	YES	NO
NO 63	Have you ever taken advantage of someone?.....	YES	NO
NO 64	Do you often take on more activities than you have time for?.....	YES	NO
NO 65	Are there several people who keep trying to avoid you?.....	YES	NO
NO 66	Do you worry a lot about your looks?.....	YES	NO
NO 67	Do you think people spend too much time safeguarding their future with savings and insurances?.....	YES	NO
NO 68	Have you ever wished that you were dead?.....	YES	NO
NO 69	Would you dodge paying taxes if you were sure you could never be found out?....	YES	NO
NO 70	Can you get a party going?.....	YES	NO
NO 71	Do you try not to be rude to people?.....	YES	NO
NO 72	Do you worry too long after an embarrassing experience?.....	YES	NO
NO 73	Have you ever insisted on having your own way?.....	YES	NO
NO 74	When you catch a train do you often arrive at the last minute?.....	YES	NO
NO 75	Do you suffer from "nerves"?.....	YES	NO
NO 76	Do your friendships break up easily without it being your fault?.....	YES	NO
NO 77	Do you often feel lonely?.....	YES	NO
NO 78	Do you always practice what you preach?.....	YES	NO
NO 79	Do you sometimes like teasing animals?.....	YES	NO
NO 80	Are you easily hurt when people find fault with you or the work you do?.....	YES	NO
NO 81	Have you ever been late for an appointment or work?.....	YES	NO
NO 82	Do you like plenty of bustle and excitement around you?.....	YES	NO
NO 83	Would you like other people to be afraid of you?.....	YES	NO
NO 84	Are you sometimes bubbling over with energy and sometimes very sluggish?.....	YES	NO
NO 85	Do you sometimes put off until tomorrow what you ought to do today?.....	YES	NO
NO 86	Do other people think of you as being very lively?.....	YES	NO
NO 87	Do people tell you a lot of lies?.....	YES	NO
NO 88	Are you touchy about some things?.....	YES	NO
NO 89	Are you always willing to admit it when you have made a mistake?.....	YES	NO
NO 90	Would you feel very sorry for an animal caught in a trap?.....	YES	NO

PLEASE CHECK TO SEE THAT YOU HAVE ANSWERED ALL THE QUESTIONS

1 ☐ 2 ☐ 3 ☐ 4 ☐

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