SYMPTOMATOLOGY OF MENOPAUSE AS A FUNCTION OF ESTROGEN REPLACEMENT THERAPY AND SEX ROLE

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And for myself a reminder, "I cannot sing the old songs, or dream those dreams again" (Charlotte Barnard, 1860).

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CHAPTER I

STATEMENT OF THE PROBLEM

Research examining the developmental period of middle adulthood has historically been sparce. Certain developmental processes, however, occur uniquely in the middle years and highly influence psychological adjustment during that period and in later adulthood. One such process is the biological and psychological changes globally termed menopause or change of life. It has been estimated that up to 80 percent of the 34 million women between 40 and 65 years of age suffer from some symptoms of ill health and discomfort commonly associated with menopause (Canon, 1973). Medically, "menopause refers to the cessation of menses; climacterium,[1] to the involution of the ovaries and the various processes associated with this involution, including the menopause" (Neugarten and Kraines, 1965, p. 266). The psychological implications of the menopause can be and are as varied as the individuals experiencing it.

In the literature one can find studies examining both the biological and psychological concomitants of menopause. Such research, however, is plagued with methodological problems. First, there is a question pertaining to the representativeness of the samples utilized. The majority

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[1]For purposes of the discussion, climacteris (climacterium) will be defined as the cessation of reproductive ability, whereas menopause will refer to the prolonged period in which menses ceases. In the literature, the terms menopause and climacterium are sometimes used interchangeably. When discussing the results of specific studies, the terminology used in this study will follow that of the cited author.

of subjects used are either frequent visitors to the physician's office or the clients of the psychologist conducting the research. The generalizability from such samples can be questioned.

Neugarten and Kraines (1965) point out:

> Accurate information regarding the incidence of symptoms among menopausal women is lacking, since women who do not seek medical attention, are for the most part, not included in clinical studies (p. 267).

This concern is of special significance as the great majority of females do not seek out medical attention for complaints attributable to menopause (Barrett, Cullis, Fairfield, and Nicholson, 1933; Neugarten and Kraines, 1965; Winn and Daly, 1971; Winokur, 1973). Such biases in research do little to advance our knowledge and may maintain, to some extent, the misunderstanding often associated with this developmental process. Second, rarely in the literature is there a distinction made between those women experiencing an "artificial" menopause due to a hysterectomy and those undergoing a "natural" menopause. It is quite likely that these two groups of women are experiencing different reactions to menopause. To consider these groups homogeneous is to ignore the potential differences created by differing etiology. Third, researchers have often used inappropriate, inadequate, or invalid instruments in measuring symptoms or related behavior. Frequently, instruments used were more appropriate for a psychiatric setting. Often clinical impressions served as a data base rather than objective measurement, and in some cases retrospective data have been exclusively employed.

Previous researchers have not always approached the problem of examining menopausal behavior within a framework of the total individual. Relatively few studies have focused upon the attitudinal and behavioral components of menopause or upon the relationship of menopause to the

individual's identification with a social role, e.g., the female role. Recent research has indicated that certain physical symptoms, once thought exclusively controlled by biological processes, have strong psychological components. Paige (1973), in a study exploring the relationship between menstrual symptoms and religious and cultural attitudes toward femininity concludes:

> I have come to believe that the "raging hormones" theory of menstrual distress simply isn't adequate. All women have raging hormones, but not all women have menstrual symptoms. . . . We must instead consider the problem of women's subordinate social position and of the cultural ideology that so narrowly defines the behaviors and emotions that are appropriately "feminine" . . . . Her reproductive abilities define her femininity; other routes to success are only second-best in this society (p. 21).

Few studies have focused upon the effects of estrogen replacement therapy (ERT), a commonly prescribed drug given for the symptoms of menopause. The balance of therapeutic gain from the administration of estrogen versus the potential side effects of such is still a debated issue (Cooper, 1976; Goldmen, 1976; Hammond, 1976; Wilson and Wilson, 1963). No research was found in the literature that has explored the potential relationship between personality variables and choice or the effectiveness of ERT.

The purpose of the present investigation is to study the psychological and biological concomitants of menopausal status and ERT status. More specifically, the study will compare menopausal and post-menopausal women. Within these two groups, some of the women were using ERT, others were not. The variables of major interest were: amount and type of menopausal symptoms, sex role identification, self-esteem, and assertion. The study is to be conducted in such a fashion that the previously discussed methodological problems will be eliminated. The following

requirements, therefore, are taken into account: (1) The sample of subjects will be diversified. Although some subjects will be obtained from medical professionals, these subjects will not necessarily be in treatment for the "menopausal syndrome." Some will be under the physician's care for yearly checkups only. (2) Only those women who are presently married and experiencing a "natural menopause" will serve as subjects. (3) Objective, standardized measurements, or standardized scoring systems with projective techniques will be utilized. By introducing new controls and instruments, knowledge will be gained regarding the relationship of personality factors, menopausal status, and ERT status.

CHAPTER II

REVIEW OF THE LITERATURE

Before reviewing the studies dealing with the psychological and biological effects of menopause, it is necessary to briefly explore the physiology of estrogens, and the role they play during menopause.

Physiology of Estrogens

In the seventh month of fetal life, the female fetus has all of the necessary biological equipment for reproduction (Weideger, 1977). It is not until sometime after menarche that the female is physically capable of childbearing. Although the female child produces estrogen, testosterone, and androgen from birth, it is not until puberty that production of estrogen greatly exceeds that of the "male hormones" (Cherry, 1976). Menarche is the result of complex hormonal and biological changes in the female. At puberty, the pituitary gland begins production of Follicle Stimulating Hormone (FSH) and small amounts of Luteinizing Hormone (LH). FSH reaches the ovaries through the bloodstream and triggers growth and development of the follicles. The follicles, in turn, manufacture estrogens. Once these estrogens reach a critical level in the pituitary, production of FSH declines and LH production increases (Weideger, 1977). LH together with the estrogens stops the growth of all follicles except one. Once mature, this follicle releases its egg. LH continues its influence by changing the empty follicle to the corpus luteum. The corpus

luteum then begins production of progesterone. When the pituitary detects a critical level of progesterone, LH production becomes inhibited, together with decreasing levels of progesterone. When estrogen, also produced by the corpus luteum, and progestrone production reach their lowest points, menstruation begins. The cycle repeats itself when the pituitary detects low levels of estrogens and begins production of FSH. If conception had occurred during this cycle, the corpus luteum would have continued to develop, sustaining fetal life until development of the placenta.

Estrogens, critical to the reproductive cycle, are also important for other biological processes as well. Estrogens encourage the development and growth of pubic hair. Additionally, estrogens have anabolic actions, and increase protein synthesis. Estrogens increase water uptake and may influence positive calcium balance. Height, bone density, and cardiac mass have also been attributed to estrogens (Goldfarb, 1969).

Physiology and Symptomatology of Menopause

The exact reason for ovarian failure still remains obscure (Cope, 1976). During the climacteric, however, the level of female hormones shifts from the high level of production of the fertile years to a lowered output at older age (Weideger, 1977). The follicles begin to deteriorate and produce decreasing amounts of estrogens. The pituitary continues to manufacture more and more FSH with correspondingly little LH. Progesterone is not produced by the deteriorating follicles. Because estrogen can be produced by organs other than the ovaries (e.g., the adrenal glands), a laboratory diagnosis of menopause is made by the large amounts of pituitary hormones rather than estrogen present in the

bloodstream (Cherry, 1976). It is the combination of follicle decay and deficiencies in hormones that are thought to initiate the climacterium.

Physiologic changes, characteristically associated with the aging female, but not solely attributed to menopause include: (1) increase in body weight, (2) posture difficulties, (3) osteoporosis (light, thin bones), (4) atherosclerosis (coronary artery disease), and (5) atrophic changes in the vagina and uretha leading to vaginal discharge, spotting, and frequent urination with burning (Goldfarb, 1969). Symptoms generally attributed to menopausal changes overlap those associated with general aging and involve every bodily system. Despite the variety of symptoms an individual may experience, hot flashes and genital atrophy are two symptoms that are uniquely characteristic of menopause (Novak, 1940; Thompson, Hart and Durno, 1973; McKinlay and Jefferys, 1974; Cherry, 1976; Weideger, 1977). Neugarten and Kraines (1965) developed a symptom check-list of 28 symptoms commonly associated with the menopause. This check-list has become a popular instrument in research dealing with menopause.

Etiology and Dynamics of Menopausal Symptoms

The research dealing with menopause has primarily been guided by two schools of thought: (1) menopause symptoms are primarily related to endocrine functioning (Endocrine Factor School), and (2) menopause symptoms are primarily related to emotional or psychological influences (Emotional Factor School). The endocrine factor school attributes menopausal symptomatology to estrogen deficiency. Wilson and Wilson (1963) state: "This deprivation (of estrogen) markedly impairs homeostasis. We no longer have the 'whole woman' . . . only the 'part woman'" (p. 164).

Studies show that menopausal symptoms result from lack of estrogen and reduction of such symptoms results from ERT. Wilson and Wilson (1963) cite literature in which negative nitrogen balance, hypercholestermia, hypertension, osteoporous, menopausal arthropathies, impaired carbohydrate metabolism, and "negativism" result from lack of estrogen. They state that with lifelong maintenance of ERT the menopausal female can avoid these medical and psychological symptoms. Based on clinical impressions, Mallison (1953) states that the etiology for menopausal depression, exhaustion, irritability, and masochism is estrogen deficiency. Using implantations of estrogens and/or testosterone, Greenblatt and Bruneteau (1974) found significant reduction in menopausal headaches, although no control group or placebo was employed. The authors conclude that these sex hormones have influence on the autonomic nervous system's serotonin and catecholamines. Greenblatt (1952; 1955) states that the need for ERT for the majority of women is due to three factors: (1) declining ovarian function, (2) changes in the autnomic nervous system, and (3) psychosexual upheaval.

Other researchers, although advocates of ERT, have supported a more conservative view of its therapeutic gains. Beard (1976) and Cherry (1976) conclude that ERT can only predictably relieve hot flashes, sweats, and dryness of the vagina. Weideger (1977), holding a similar position, speculates about the current widespread use of estrogens. She questions if the use of ERT is really a belief in a modern day "Fountain of Youth."

Few studies in the literature employ both endocrine and psychological factors. One such study was conducted by Neugarten and Kraines (1965). These researchers interviewed women, ages 13 to 64 years. Each

subject was to check the presence or absence of specific symptoms on a menopausal checklist. Symptoms listed were then categorized by the experimenters into three major groups: (1) Psychosomatic, (2) Somatic, and (3) Psychologic. In addition, the Blatt Menopausal Index, a weighted numerical index based upon incidence and severity of 11 particular symptoms was calculated based on each subject's report. Menopausal women reported significantly more psychosomatic and somatic symptoms than women of other developmental stages. Post-menopausal women reported significantly fewer symptoms in all categories when compared to all the other women studied. Adolescent women, in contrast, reported the greatest number of psychologic symptoms. The researchers speculate that the differences found among the varying age groups of women can be attributed to endocrine changes over the lifespan. The post-menopausal women, although still estrogen deficient, report fewer symptoms. This reduction in symptoms is seen as related to their ability to cope with stress, a psychological mechanism important in dealing with the biological changes brought about by estrogen deficiency.

Although important in any discussion of ERT, the research exploring the potential side effects of long-term ERT is beyond the scope of this paper.[1] The endocrine-deficiency school can best be summarized by Kupperman (1972). He states:

> It may well be that the human female, because of the advances of medicine, now lives much beyond her reproductive potential. She is then exposed to the exigency of ovarian estrogen deficiency. It is for this reason that we feel that the

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[1]The reader is directed to Poller (1976), Bonnar (1976), Dewhurst (1976), Sellwood (1976), Lauritzen (1976), Hammond (1976), Goldmen (1976), Cherry (1976), Weideger (1977), Wilson and Wilson (1963), and Canon (1973) for a discussion of the effects of long-term ERT.

> climacteric syndrome, presenting with or without symptoms, warrants continued long term estrogen therapy; thus one would treat the estrogenic-deficient female in much the same way one would treat a thyroid deficiency--whether or not there is a presenting symptomology (p. 1).

A second major school (Emotional Factor) examines the etiology and dynamics of menopausal symptoms. Unlike the endocrine factor school, this school considers individual differences and emphasizes the premenopausal personality of the patient. The prior adjustment of the woman undergoing climacterium to a large extent will determine severity of menopausal symptoms. Donovan (1951) interviewed women diagnosed as menopausal; subjects were unaware of the menopausal focus of the interview. Information on the following symptoms was obtained: (1) symptoms of potential organic disease, (2) symptoms related to menopause, and (3) unexplained symptoms. During the course of the interviews, subjects requesting medication were given saline. Later these same subjects received homeopathic doses of progestrone. Although no statistical analyses were performed on the data, Donovan concluded the following:

1. Any relief obtained from ERT may be due to other factors than the estrogen itself.

2. The frequency and consistency of permenopausal symptoms is an artifact of traditional history taking, whereby the nurse or physician emphasizes certain symptoms because of the woman's age.

3. Often women seeking help at menopause have done so at earlier periods of their life. These previous requests for treatment are due to symptoms as equally ill defined as the menopausal visits.

4. There is no convincing evidence at this time that a causal relationship exists between a somatic symptom and hormonal changes at menopause.

In line with Donovan's controversial viewpoint, several studies have explored the relationship of specific personality variables and menopause. Both an anxiety scale (Gleser, Gottschalk and Springer, 1961) and a counterpart measuring hostility (Gottschalk, Gleser and Springer, 1963) have been frequently used in both menopausal and menustration research (Gottschalk, Kaplan, Gleser and Winget, 1962; Greene, 1976; Bardwick, 1973). Both scales allow the experimenter to produce objective scores of either the anxiety or hostility exhibited in unrestricted, free-flowing verbal samples. According to Gleser et al. (1961), the anxiety scoring system measures "free" as opposed to "bound" anxiety. This scale measures only "psychological manifestations and not the autonomic and nonverbal manifestations of anxiety" (p. 595). The scale classifies anxiety into six subtypes: death, mutilation, separation, guilt, shame, and diffuse or nonspecific anxiety. The scoring system is weighted according to whether the individual attributes the anxiety to herself, to animate or inanimate others, or denies it. Validity studies indicate that this scale significantly differentiates among psychiatric, hypertensive, and normal populations. The scale is significantly correlated with the "Pt" scale of the MMPI, the Welsh Factor A score, and clinical ratings of anxiety (Gleser et al., 1961). The Gottschalk hostility scale measures the directionality of hostility. The validity studies of this scale have employed "belligerent" versus "withdrawn" schizophrenics, depressed versus nondepressed inpatients, antisocial personalities, and psychiatric outpatients. These studies find this instrument can differentiate between these groups (Gottschalk et al., 1963).

Hertz et al. (1971) conducted psychiatric interviews with self-referred menopausal women using the Brief Personal Rating Scale (Overall and Gorham, 1962), and the Verbal Anxiety Scale. In addition, history taking, gynecological, and dental examinations were conducted. They found an inverse relationship between the experience of severe oral symptoms (e.g., dryness of the mouth) and objective vaginal atrophy. Subjects experiencing subjective oral symptomology were found to have infantile character structures, restricted social outlets, and low adaptability to new situations. These authors conclude that the symptoms of dryness of the mouth is "primarily a psychogenic syndrome occurring in menopausal women, who suffered past oral conflicts" (p. 51). Additionally, they conclude that menopausal women who received childhood gratification from the sick role exhibit a greater number of menopausal symptoms. Benedek (1950) states that the physiological changes of menopause may necessitate phychological adaptation. Previously unresolved crises involving psychosexual maturity may influence such adaptation; this period of "desexualization" may release psychological energy for sublimation. The emphasis upon previous psychosexual history has not been supported by other researchers (Moaz et al., 1970).

Stern and Prados (1946) explored psychological reactions to menopause specifically, the relationship between physical symptoms and emotional concomitants. The authors studied 50 women referred for symptoms of menopause, 23 of whom has undergone "artificial" menopause. Psychiatric and social histories were taken and Rorschach Inkblots administered to assess current psychological state. Subjects reported the following

symptoms in their order of frequency of occurrence: hot flushes, headache, abdominal discomfort, backache, and painful sensations in the limbs. Subjects also reported psychiatric symptoms. Forty-one subjects complained of being depressed. Generally, patterns of guilt, disruption of thought, and anxiety were not seen. No correlation was found between vasomotor symptoms, headache, lower back pain, and emotional distrubance; however, a marked relationship was found between pelvic discomfort and emotional disturbance. No direct correlation between degree of estrogen deficiency and emotional reaction appeared. Results supporting this lack of correlation were also reported by Castillo (1975). The Rorschach Inkblots, Machover Figure Drawing Test, and a Cattell Questionnaire were administered to 50 premenopausal women, the majority of whom were housewives. Depression, including loss of vitality, apathy, and reduction of activities were common symptoms. The author found marked ambivalence in sexual areas. Spiegel (1969) and Tenzler (1971) relate menopausal depression not only to hormonal imbalance, but to society's cultural emphasis on youth and beauty. Observing only hospitalized inpatients, Winokur (1973) found that during menopause, women had a 7.1 percent chance of experiencing a severe depression. During other times in a female's life span, there is a 6.0 percent chance. Winokur concluded, using this nonsignificant difference, that severe depression is not necessarily associated with menopause.

Campbell (1976) cites Utian (1972; 1975) as one of the first researchers using well controlled placebo designs in studying the effects of estrogen. Utian found that estrogen had "no effect on insomnia, irritability, depression, palpitations, backache or libido" (p. 149). Campbell also using double-blind placebo conditions, found menopausal

women on ERT showed significant improvement in the reported symptoms of hot flushes, vaginal atrophy, insomnia, and memory. Campbell also found significant improvement in depression as measured by the Beck Depression Inventory, neurosis as measured by the Eysenck Personality Index and in reported general health when menopausal women were treated with placebos.

Many researchers have focused upon the relationship of various social and demographic variables to menopause. Using questionnaire data, Thompson, Hart and Durno (1973) found no significant association between age of onset of menopause and marital or socioeconomic status. Identifying pre-, current-, and post-menopausal groups, the only symptom these authors found associated with menopause was hot flushes. Interestingly, the proportion of women receiving treatment for hot flushes increased from 27 percent at premenopause, to 33 percent at menopause, to 56 percent at post-menopause. This finding contradicts the general assumption of the effects of ERT treatment and decreased symptomatology with age. Based on a methdology employed by McKinlay, Jefferys and Thompson (1972), McKinlay and Jefferys (1974) surveyed 638 subjects, found the employment status, age leaving school, social class, domestic workload, and marital status had no relationship to frequency of menopausal symptoms. The research by McKinlay and colleagues is important in that it is one of the first attempts to find a relationship between menopausal symptoms and factors affecting feminine role identity. Age at which the subject left school, employment history, and domestic workload are critical to the comfortableness and personal freedom a woman experiences in her role.

Other studies have focused upon menopausal symptoms and female roles in middle age. Crawford and Hooper (1973) conducted semistructured interviews with women fitting either of the two following categories: (1) women preparing for the loss of the mother role by the marriage of a son or daughter, and (2) women preparing for the role of grandmotherhood. The 11 symptoms of menopause observed were divided into two major categories, physiological or psychological; the authors found women anticipating loss of child through marriage to experience more psychological than physiological symptoms. Crawford and Hooper discuss this result in terms of the greater stress of role loss as opposed to role gain. A notable finding by these researchers was the observation of a stronger adherence to the feminine role in both the menopausal and post-menopausal subjects, compared to the pre-menopausal women. The authors discuss this finding in terms of compensation for biological depletion of femininity as seen in fertility. Van Keep and Kellerhals (1974) conducted extensive, well-controlled interviews focused upon climacteric complaints, as measured by a checklist of 17 symptoms and subjective adaptation, as measured by a series of statements accepted or rejected by the subject. Subjective adaptation measured attitudes concerning personal identity, subjective health, sexual relations, affective and intellectual relations with husband, conflict solving, cultural and political participation, and adherence to social values. The following findings were reported:

1. Women display a clear increase in climacteric symptoms around the time of menopause.

2. Women of higher socioeconomic classes experience fewer menopausal symptoms and report higher subjective adaptation than women of

lower socioeconomic classes (although for both groups this index decreases with age).

Both studies (Crawford and Hooper, 1973, and van Keep and Kellerhals, 1974) obtained significant and notable findings when exploring role loss, role identification, and adaptation within a sex role. Both studies point to the importance of research examining the relationship of menopause and role identity.

With the advent of the women's movement, much theoretical and research attention has been focused on role identity. Researchers have examined the appropriateness of traditional sex roles, as well as the adjustment of individuals exhibiting traditional stereotyped behaviors (Desdin, 1977). The frequently cited research of Sandra Bem (1974; 1975) espouses the view that traditionally feminine women are associated with low self-esteem, low self-acceptance, and high anxiety. The Bem Sex Role Inventory (Bem, 1974) is a frequently employed scale that measures not only adherence to the traditional roles of males and females, but also measures androgyny, the incorporation of both female and male characteristics within an individual. The androgynous person is able to engage in "situationally effective behavior without regard for its stereotype as masculine or feminine" (Bem, 1975, p. 643). Adherence to a traditional feminine sex role can be a critical determinant of a woman's reaction to menopause. Wilson, Bolt and Larsen (1975), discussing the relationship between female biology and changing roles, state:

> As long as motherhood continues to be defined as a woman's essential role and major responsibility with any outside employment seen as simply an addition to that role, real "equal opportunity" is impossible. . . . Often an innately different psychology is ascribed to the female, based on nurturant

> qualities required by motherhood, or on a maternal instinct or drive. . . . (Historically) Biology was destiny in that the idea of separating procreative functions from other female sex roles was scarcely even entertained (pp. 3-4).

Two recently constructed instruments, the Household Behaviors Scale (HBS) developed by Green and Desdin (note 1) and the Bem Sex Role Inventory Behavior (BSRI-B) developed by Green and Desdin (note 2), examine adherence to traditional or nontraditional sex roles. Whereas Bem examined expressed attitudes (Bem, 1974), these two scales focus upon measuring behaviors. The HBS has been successfully employed in a study of sex roles (Desdin, 1977). The BSRI-B is still in exploratory stages.

Other personality variables, besides adherence to a traditional sex role, are predicted to be of importance to social and personal adjustment during menopause. Self-assertion is viewed as one behavior necessary to a healthy personality (Bloom, Coburn and Pearlman, 1975; Alberti and Emmons, 1974). Females are characteristically found to be lacking in assertiveness (Bloom et al., 1975). Wolpe (1969) states:

> Assertive training . . . is required for patients who in interpersonal contexts have unadaptive anxiety responses that prevent them from saying or doing what is reasonable and right. . . . Suppression of feeling may lead to a continuing inner turmoil which may produce somatic symptoms and even pathological changes in predisposed organs (p. 61).

Herson, Eisler and Miller (1973) associate unassertive behavior with sexual deviation, self-mutilation, impotence, crying spells, and a variety of interpersonal problems. The relationship of assertion to both role behavior and menopausal symptoms, psychosomatic, psychologic, and somatic is obvious. The Assertion Inventory (AI) (Gambrill and Richey, 1975) is an instrument which measures behavior in a variety of situations and consists of 40 items in a Likert-type response system.

Although assertion and specifically the AI have yet to be employed in menopausal research, its potential implications are clear.

High self-esteem is another behavior necessary to a healthy personality, one of potential importance in determining adjustment during menopause. Rosenberg (1965) states that low self-esteem is related to physiological symptoms of anxiety such as hand trembling, nervousness, insomnia, heart pounding, pressures or pains in the head, fingernail biting, shortness of breath, palmar perspiration, sick headaches, nightmares, and loss of appetite. The similarities between such behaviors and some of the symptoms of menopause are obvious. Rosenberg (1965) developed a ten-item scale measuring self-esteem. The relationship between the Rosenberg Self-Esteem Scale (SE) and the frequency and severity of menopausal symptoms has yet to be explored in research.

A concise and short summary of the menopausal literature is difficult. The controversy surrounding the effects of ERT is still unresolved. ERT may be the appropriate treatment for females with menopausal symptoms or may more appropriately be a psychological treatment related to society's pressures upon females to exhibit everlasting youth and beauty and its relationship to an adherence to a traditional feminine role. The relationship between the female's view of herself and the effectiveness of ERT must be explored. Personal adjustment, as measured by self-esteem, self-assertiveness, and adherence to a traditional sex role may exacerbate symptomatology or may be unrelated to menopausal symptoms and ERT. If such personality factors do affect menopause and its treatment with estrogen, then that relationship must be clearly defined and examined. The present study examined two groups of women, one stabilized on ERT and the other receiving no

pharmacological treatment for menopausal symptoms. The subjects were further classifed into current- or post-menopausal categories. Subjects were selected whether or not under treatment by their physicians for menopausal symptoms. Measures used were semistructured interviews, the Thematic Apperception Test (TAT) scored using the Verbal Anxiety and Hostility Scales (VA, VH), Neugarten's Menopausal Checklist (MC), Bem Sex Role Inventory (BSRI), Bem Sex Role Inventory-Behavior (BSRI-B), Household Behaviors Scale (HBS), Gambrill and Richey's Assertion Inventory (AI), and Rosenberg's Self-Esteem Inventory (SE).

Previously cited literature had speculated that a person "bound" to a traditional sex role has few available avenues for alternate behaviors. For women, this adherence to a traditional sex role when coupled with the loss of functioning in that role (loss of the parent and reproductive role) during middle age (see Bart, 1976), is commonly associated with low self-esteem, low self-acceptance, and high anxiety. Menopause can be seen as a process eliminating major evidence of a woman's fertility and femininity. In an attempt to recapture femininity and youth, a woman might employ ERT. Because ERT can only predictably relieve hot flahses and vaginal atrophy, its widespread use could be related to the manifestations of sex role adherence. Based on this rationale, the following hypotheses were tested:

1. Compared to the nonERT group, the ERT group will show a greater adherence to the traditional feminine role as measured by the BSRI, BSRI-B, and the HBS.

2. Compared to the nonERT group, the ERT group will show lower assertion and lower self-esteem as measured by the AI and SEC.

3. Compared to the ERT group, the nonERT group will have lower verbal anxiety and hostility as measured by the VA and VH.

The symptoms of menopause can be divided into three groups. The psychological symptoms are primarily emotional and cognitive in nature. They are assumed to be caused by factors other than biological processes, although they may occur as secondary responses to these processes. The psychosomatic symptoms are somatic symptoms which are the product of psychological distress, i.e., headaches produced by anxiety. Somatic symptoms are physical complaints directly attributable to biological processes. The number of psychological and psychosomatic symptoms, therefore, can generally reflect personal adjustment as opposed to biological changes. Based on this and the previous rationale, the following hypotheses were tested:

4. Compared to the nonERT group, the ERT group will show a higher psychological and psychosomatic symptomatology as measured by the MC.

5. Compared to the nonERT menopausal group, the ERT menopausal group will be significantly lower in somatic symptoms.

The literature has indicated that menopause does, in fact, increase physical complaints that have a biological basis. These symptoms appear to decrease as the woman ages. Based on these indications, the following hypothesis was tested:

6. Menopausal women of both ERT and nonERT groups will show significantly higher somatic symptomatology as measured by the MC, when compared with the post-menopausal group.

Based on the above statements, a woman having gone through menopause without ERT has had other avenues to express her identity and maintain self-concept besides the traditional avenues of biological fertility

and looking young and "feminine." The proposed existence of such a non-traditional group as indicated by rejection of ERT is the basis for the following hypothesis:

7. Compared to the ERT post-menopausal group, the nonERT post-menopausal group will show less verbal anxiety and hostility (VA, VH), a more androgenous sex role (BSRI, BSRI-B, HBS), with significantly greater self-assertion (SA) and self-esteem (SEC).

CHAPTER III

METHOD

Subjects

Forty-eight white, married women, between the ages of 40 and 75 served as human participants. The subjects were obtained by one of the following methods: physician referral, enrollment lists obtained from a southern midwest university, or friendship pyramiding. Initially, three local physicians agreed to obtain permission for participation from their private practice patients meeting the research criteria. After the physician obtained this permission, the researcher contacted them by phone and made arrangements concerning the place and time of the interview and testing. As this procedure did not provide a sufficient number of eligible subjects, the second and third procedures were additionally used. The university provided the researcher with a list of all married women, 40 years of age and older, who were enrolled during the Fall, 1978, semester. These women were contacted by phone and those wishing to participate and meeting the criteria were interviewed and tested. None of the subjects had undergone a hysterectomy or mastectomy. None of the subjects was currently using birth control pills as a means of contraception. After a subject had completed the testing procedure, she was asked if she knew of anyone who might be willing to participate in the study. Thus, names of potential subjects were obtained by the third procedure, friendship pyramiding. The researcher

subsequently contacted by phone those women and obtained their permission to participate. All subjects who provided the names of other potential subjects were explicitly asked not to reveal the nature or content of the interview and testing. There were no indications that this was violated. All subjects were informed during the initial phone contact that the study was concerned with the beliefs and attitudes of women either currently undergoing menopause or those who were post-menopausal. All subjects were guaranteed anonymity.

Thirty of the subjects were able to respond affirmatively to the statement: I have not had a menstrual period within the past year.[1] These women were classified as post-menopausal. Of these thirty women, fifteen were currently receiving estrogen replacement therapy (ERT), classifying them within the post-menopausal, ERT group, while fifteen were not currently using ERT, classifying them within the post-menopausal, nonERT group. The eighteen women remaining had begun the menopausal process as defined by significant symptomatology, including changes in the amount of bleeding and/or a change in the regularity of the monthly menstrual cycle. Three were currently menopausal and using ERT, classifying them within the menopausal, ERT group, while fifteen were menopausal but not using ERT, classifying them within the menopausal, nonERT group.

Materials

All subjects were administered the following tests in the order indicated: Semistructured Interview, Menopausal Symptom Checklist (MC), Thematic Apperception Test (TAT), Bem Sex Role Inventory (BSRI), Self-

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[1] A statement frequently used in the literature for determining post-menopausal status (Weideger, 1977).

Esteem Scale (SEC), Household Behaviors Scale (HBS), Bem Sex Role Inventory-Behavior (BSRI-B), and the Assertion Inventory (AI). Appendix A summarizes the construction, reliability, and validity for each scale.

1. Semistructured Interview. Appendix B contains a schedule of the interview, coding information, and dependent measures obtained from the interview. Several variables obtained through the interview schedule required some type of transformation before coding could be achieved. The subject's occupation was transformed into an occupational prestige score, based upon the NORC Occupational Categories and Prestige System (Haller et al., 1974) with the following changes:

   a. Because the occupation of housewife/homemaker was not included in this sytem, an average of household-type duties was used, resulting in a prestige code of 1;
   b. If the subject was a full-time student, coding was based upon her goals after graduation;
   c. Part-time students were coded by their full-time or part-time occupation;
   d. One subject was retired; her coding was based upon the prestige of her occupation prior to retirement.

Three additional variables (questions 13, 14, and 15) required transformation. These involved questions concerning the subjects' impressions of the reaction of significant others when she was ill. All questions were scored at the same time. For each question the subjects' responses were randomized, then rated on a scale from 1 to 5 for emotional involvement and amount of role "take-over" during illness.

2. Menopausal Symptom Checklist (Neugarten and Kraines, 1965). This is a 28-item scale, each item rated on a five-point, Likert-like

scale. The MC yields a psychological symptom score (PYS), a somatic symptom score (SOS), and a psychosomatic symptom score (PSS). Appendix C provides the items of the MC and appropriate classification of items.

3. Thematic Apperception Test (Murray, 1943). Stories told in response to cards 4, 6BM, 13MF, 12M, and 1BGF were scored according to Gleser et al. (1961). The subscores that were calculated were death (DIE), mutilation (MUT), separation (SEP), guilt (GLT), shame (SHM), and diffuse or nonspecific (DIF). Appendix D contains the rating scale. A total verbal anxiety score (ANX) was also calculated and total number of phrases spoken counted. A verbal hostility score (HOS) was also calculated (Gottschalk et al., 1963). Appendix F contains this rating scale. Emotional tone scores (TON) and general outcome scores (OUT) were also computed (Eron, Terry and Callahan, 1950). Appendices F and G contain a summary of these scales. In order to assess the reliability of the rating systems, two judges were trained in the scoring of the anxiety, hostility, outcome, and emotional tone scale of the TAT. The responses of 20 subjects were randomly selected for assessing inter-rater reliability. Reliability for the Anxiety Scale was r (18) = 0.81, $p < .005$. Reliability for the subscales was as follows: Death, r (18) = 0.97, $p < .005$; Mutilation, r (18) = 0.93, $p < .005$; Separation, r (18) = 0.88, $p < .005$; Guilt, r (18) = 0.48, $p < .025$; Shame, r (18) = 0.78, $p < .005$; Diffuse or nonspecific, r (18) = 0.35, $p < .05$. The correlation for the Hostility scale was r (18) = 0.85, $p < .005$. Reliability for Emotional Tone was r (18) = 0.79, $p < .005$ and for Outcome r (18) = 0.93, $p < .005$. For purposes of the analysis, the dependent measure used was an average of the judges' ratings.

4. Bem Sex Role Inventory (Bem, 1974). The BSRI contains 60 items rated on a seven-point Likert-like scale. It yields a masculinity score (MAS), a femininity score (FEM), an androgyny score (AND), and a social desirability score (SOD). Appendix H contains the items of the BSRI and appropriate item placement.

5. Self-Esteem Scale (Rosenberg, 1965). This is a 10-item scale, each item rated on a Likert-like basis and yields a self-esteem score (SEC). Appendix I presents the items.

6. Household Behaviors Scale (Green and Desdin, Note 1). This is a 10-item scale, rated on a five-point Likert-like scale. This scale yields a masculine behavior score (MHB), a feminine behavior score (FHB), and an androgyny behavior score (AHB). Appendix J presents a list of the items and the appropriate classification of each.

7. Bem Sex Role Inventory-Behavior (Green and Desdin, Note 2). This is a 12-item test, rated on a five-point Likert-like scale. It yields a masculine behavior score (MBS), a feminine behavior score (FBS), and an androgyny behavior score (ABS). Appendix K presents the items and appropriate scoring.

8. Assertion Inventory (Gambrill and Rickey, 1975). This is a 40-item test, each item judged on a five-point Likert-like scale. It yields an assertion probability score (AST). Appendix L presents the inventory.

Procedure

All participants were individually interviewed and tested. The setting was, with four exceptions, at the participants' homes. At those four participants' requests, three sessions were conducted at the

researcher's office and one was held at a local public library. Prior to testing, the subjects signed consent forms that (1) agreed to the terms of participation, and (2) granted the researcher permission to obtain confirmation of their menopausal and estrogen status from their physicians. The response rate from the physicians was 48 percent; all agreed with the subject's own report of her menopausal and estrogen status.

Each testing session began with the semistructural interview, in which rapport, personal history, and demographic data (including age and education) could be obtained. After the interview, all tests were presented in the order indicated above. Written instructions appeared at the top of each scale with the exception of the TAT. No time constraints were placed upon the subjects; the researcher was nearby for clarification purposes. For the TAT, each subject was asked to make up a story about each of the cards presented to them. All tests were coded by number and appropriate menopausal/estrogen categories. Upon completion of the study, subjects received letters discussing the major results in general terms. All participants were then given the opportunity to discuss the results with the researcher.

CHAPTER IV

RESULTS

The four groups studied, based upon the independent variables of menopausal status (MST) and estrogen replacement therapy status (ERT) were as follows: (1) post-menopausal, estrogen (PE), (2) post-menopausal, nonestrogen (PN), (3) menopausal, estrogen (ME), and (4) menopausal, nonestrogen (MN). Table I summarizes the means and standard deviations for all dependent measures separately by groups. For all of the groups except ME, sample size was 15. Due to the nature of the independent variables, sample size for the ME group was 3. Thus for all of the analyses in which the ME group was included, the least-squares solution was employed.

A multivariate analysis of variance (MANOVA) was utilized to assess the differences between the ERT and nonERT groups for the following variables: age in years (AGE), fundamental religious beliefs (FUN), occupational prestige score (OCC), happy in current job (HAP), number of children (KID), number of children currently living at home (KIH), amount of information obtained concerning menopause (INF), information obtained from physician (MDI), information obtained from relatives (MOI), information obtained from friends (FRI), source of information obtained through modeling (NIM), information "self-sought" (ISS), information "not self-sought" (INS), parents' reaction when sick (PAR), husband's emotional reaction when sick (EHU), amount of "role take-over" when sick by husband (RHU), children's emotional reaction when sick (ECH), amount of

TABLE I

MEANS AND STANDARD DEVIATIONS AS A FUNCTION OF GROUP[1]

Variable	Group MN $\bar{X}$ N = 15 (S.D.)	Group ME $\bar{X}$ N = 3 (S.D.)	Group PN $\bar{X}$ N = 15 (S.D.)	Group PE $\bar{X}$ N = 15 (S.D.)
AGE	47.73 (2.96)	49.67 (0.58)	55.53 (9.26)	58.07 (4.91)
REL	3.40 (0.51)	3.33 (0.58)	3.73 (1.83)	4.13 (0.74)
FUN	0.60 (0.51)	0.67 (0.58)	0.40 (0.51)	0.67 (0.49)
EDU	2.40 (1.40)	3.00 (1.73)	2.27 (0.88)	3.67 (1.76)
OCC	3.00 (2.39)	2.67 (2.89)	2.64 (2.06)	1.85 (1.14)
YEC	5.29 (3.40)	10.00 (0.00)	10.00 (0.00)	9.42 (10.29)
YET	9.85 (8.73)	5.00 (4.35)	12.87 (11.64)	12.90 (10.88)
TWI	0.13 (0.35)	0.33 (0.58)	0.13 (0.35)	0.13 (0.35)
TMO	0.53 (0.52)	0.67 (0.58)	0.40 (0.51)	0.26 (0.46)
CAR	0.27 (0.46)	0.33 (0.58)	0.20 (0.42)	0.13 (0.35)
APP	2.67 (0.90)	3.00 (0.00)	2.47 (0.83)	2.87 (0.52)
HAP	0.93 (0.26)	1.00 (0.00)	0.93 (0.26)	0.86 (0.35)
KID	3.60 (1.96)	2.33 (1.15)	2.93 (1.22)	2.67 (0.98)
KIH	1.20 (1.01)	0.67 (0.58)	1.40 (1.88)	0.40 (0.63)
INF	3.54 (0.97)	3.67 (1.15)	3.87 (0.99)	3.00 (0.85)
MDI	0.47 (0.64)	0.33 (0.58)	0.47 (0.52)	0.47 (0.52)
MOI	0.13 (0.35)	0.00 (0.00)	0.06 (0.26)	0.00 (0.00)
FRI	0.13 (0.35)	0.00 (0.00)	0.27 (0.46)	0.13 (0.35)
ISS	0.67 (0.49)	0.67 (0.58)	0.73 (0.45)	0.13 (0.35)
INS	0.13 (0.35)	0.67 (0.58)	0.07 (0.26)	0.40 (0.51)
NIM	0.07 (0.26)	0.00 (0.00)	0.00 (0.00)	0.13 (0.35)
PAR	3.47 (0.99)	5.00 (0.00)	3.93 (0.88)	3.40 (1.55)
EHU	3.40 (1.18)	3.67 (0.58)	3.47 (0.92)	3.27 (1.28)
RHU	3.33 (0.98)	4.00 (0.00)	3.80 (1.08)	3.27 (0.96)
ECH	3.20 (0.68)	4.00 (0.00)	3.50 (0.65)	3.60 (0.63)
RCH	3.73 (1.03)	4.00 (0.00)	3.79 (1.25)	3.67 (0.90)
HOP	4.47 (1.64)	3.67 (1.15)	3.40 (1.18)	3.07 (1.83)
TDC	0.27 (0.59)	1.00 (1.73)	0.33 (0.62)	0.53 (0.92)
CHB	3.60 (1.96)	2.33 (1.15)	2.80 (1.08)	1.93 (1.22)

TABLE I (Continued)

Variable	Group MN N = 15 $\bar{X}$	(S.D.)	Group ME N = 3 $\bar{X}$	(S.D.)	Group PN N = 15 $\bar{X}$	(S.D.)	Group PE N = 15 $\bar{X}$	(S.D.)
MIS	0.20	(0.77)	0.00	(0.00)	0.00	(0.00)	0.33	(1.04)
SOS	24.44	(6.02)	22.33	(4.62)	19.07	(5.15)	21.67	(6.45)
PSS	10.93	(3.13)	11.67	(2.08)	8.80	(2.68)	11.40	(2.38)
PYS	23.33	(5.91)	22.67	(0.58)	19.27	(5.95)	22.40	(4.66)
MAS	4.70	(0.87)	4.26	(0.61)	4.79	(0.73)	3.82	(0.72)
FEM	5.13	(0.59)	5.10	(0.54)	4.81	(0.44)	4.49	(0.42)
AND	5.07	(2.41)	6.19	(1.59)	4.05	(1.69)	5.56	(1.82)
SOD	5.43	(0.49)	5.55	(0.13)	5.43	(0.48)	5.27	(0.25)
SEC	15.60	(3.94)	19.67	(0.58)	16.20	(3.85)	19.13	(4.72)
MHB	3.53	(0.56)	3.13	(0.50)	3.25	(0.49)	3.17	(0.77)
FHB	4.60	(0.50)	4.67	(0.42)	4.33	(0.57)	4.52	(0.65)
AHB	1.17	(0.51)	1.53	(0.83)	4.33	(0.57)	4.52	(0.65)
FBS	4.07	(0.33)	3.78	(0.35)	3.76	(0.39)	3.73	(0.40)
ABS	1.70	(0.42)	1.61	(0.26)	1.57	(0.55)	1.87	(0.46)
AST	108.27	(15.88)	121.00	(8.89)	103.67	(9.87)	118.87	(16.91)
TON	3.60	(1.50)	2.67	(1.53)	2.93	(0.80)	3.07	(1.39)
OUT	5.47	(2.07)	4.33	(1.53)	4.47	(1.60)	4.53	(2.29)
ANX	23.47	(6.31)	20.33	(4.62)	26.07	(11.23)	19.60	(9.26)
DIE	3.13	(3.52)	4.33	(7.51)	6.00	(4.61)	4.67	(2.85)
MUT	6.87	(5.19)	4.33	(2.51)	5.80	(4.07)	4.93	(4.80)
SEP	7.20	(6.53)	3.67	(4.04)	5.33	(4.40)	3.20	(3.47)
GLT	1.80	(1.74)	0.33	(0.58)	1.73	(1.98)	1.00	(1.20)
SHM	1.33	(3.24)	0.00	(0.00)	1.47	(2.23)	0.40	(0.83)
DIF	7.80	(4.25)	10.00	(0.00)	7.73	(4.44)	5.20	(4.28)
HOS	11.20	(6.30)	7.00	(0.00)	12.73	(3.73)	11.53	(7.54)
TCF	36.00	(11.72)	34.33	(2.31)	37.73	(14.88)	37.80	(10.19)

[1]Refer to Appendix M for a translation of all abbreviations.

"role take-over" when sick by children (RCH), number of hospitalizations (HOP), number of somatic symptoms (SOS), terminated job for wife role (TWI), terminated job for mother role (TMO), job sex appropriate (APP), masculine score on BSRI (MAS), androgyny score on BSRI (AND), social desirability score on BSRI (SOD), masculinity score on HBS (MHB), androgyny score on HBS (AHB), masculinity score on BSRI-B (MBS), androgyny score on BSRI-B (ABS), emotional tone for TAT (TON), and outcome score for TAT (OUT). See Appendix M for an alphabetical list of all variables and their abbreviations. The hypothesis of no effects due to estrogen replacement therapy status was rejected, $\underline{F}$ (33,14) = 2.86, $\underline{p}$ < .02, by Wilk's Criterion. Univariate analyses of variance (ANOVAs) were utilized to assess differences between the ERT and nonERT groups for each of the above variables. Table II summarizes all of the analyses and Table III gives a summary of the means and standard deviations. The nonERT group was comparatively younger, $\underline{F}$ (1,46) = 5.72, $\underline{p}$ < .02, and found to have more formal education, $\underline{F}$ (1,46) = 8.68, $\underline{p}$ < .005. Additionally, the nonERT group had "more children currently living at home," (F (1,46) = 5.35, $\underline{p}$ < .02, more "actively sought information about menopause," $\underline{F}$ (1,46) = 12.55, $\underline{p}$ < .0009, more "passively received information about menopause," $\underline{F}$ (1,46) = 8.59, $\underline{p}$ < .005, and attributed to themselves more masculine traits (BSRI), $\underline{F}$ (1,46) = 14.09, $\underline{p}$ < .005 and behaviors (BSRI-B), $\underline{F}$ (1,46) = 9.08, $\underline{p}$ < .004. In order to assess the possibility that these differences were not attributable to estrogen status but attributable to menopausal status, 2X2 fixed effects ANOVAs were then performed using the two independent variables on each of the 33 variables listed above. Of all the analyses discussed above that were significant, the counterpart 2X2 analyses were significant

TABLE II

ANALYSES OF VARIANCE: AGE, EDU, KIH, ISS, INS, MAS, MBS, FUN, OCC, HAP, KID, INF, MDI, MOI, DRI, PAR, EHU, RHU, ECH, RCH, HOP, SOS, NIM, TWI, TMO, APP, AND, SOD, MHB, AHB, ABS, TON, OUT BY ERT STATUS[1]

	Source	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
AGE	Group	285.01	1	285.01	5.72*
	Residual	2292.96	46	49.85	
EDU	Group	16.81	1	16.80	8.68†
	Residual	89.11	46	1.94	
KIH	Group	8.23	1	8.23	5.35*
	Residual	70.74	46	1.54	
ISS	Group	2.57	1	2.57	12.55†
	Residual	9.41	46	0.20	
INS	Group	1.33	1	1.33	8.59†
	Residual	7.14	46	0.15	
MAS	(BSRI)				
	Group	8.20	1	8.20	14.09†
	Residual	26.78	46	0.58	
FRI	Group	0.09	1	0.09	0.62
	Residual	6.58	46	0.14	
PAR	Group	0.01	1	0.01	0.01
	Residual	66.30	46	1.44	
EHU	Group	0.11	1	0.11	0.09
	Residual	55.37	46	1.20	
RHU	Group	0.36	1	0.36	0.36
	Residual	45.64	46	0.99	
ECH	Group	1.25	1	1.25	3.08
	Residual	18.67	46	0.41	
RCH	Group	0.07	1	0.07	0.06
	Residual	48.41	46	1.04	
HOP	Group	6.61	1	6.61	2.61
	Residual	116.37	46	2.53	
SOS	Group	0.02	1	0.02	0.00
	Residual	1718.98	46	37.37	
NIM	Group	0.07	1	0.07	1.14
	Residual	2.74	46	0.06	
TWI	Group	0.01	1	0.01	1.14
	Residual	5.97	46	0.13	

TABLE II (Continued)

Source		Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
TMO	Group	0.20	1	0.20	0.80
	Residual	11.47	46	0.25	
APP	Group	1.17	1	1.17	2.14
	Residual	25.14	46	0.55	
AND (BSRI)					
	Group	13.70	1	13.70	3.47
	Residual	181.55	46	3.94	
SOD (BSRI)					
	Group	12.67	1	12.67	0.76
	Residual	768.45	46	16.70	
MHB (HBS)					
	Group	0.57	1	0.57	1.55
	Residual	17.18	46	0.37	
AHB (HBS)					
	Group	1.04	1	1.04	2.77
	Residual	17.30	46	0.38	
ABS (BSRI-B)					
	Group	0.39	1	0.39	1.78
	Residual	10.17	46	0.22	
TON	Group	0.80	1	0.80	0.49
	Residual	75.87	46	1.65	
MBS (BSRI-B)					
	Group	1.45	1	1.45	9.08†
	Residual	7.37	46	0.16	
FUN	Group	0.31	1	0.31	1.25
	Residual	11.50	46	0.25	
OCC	Group	2.69	1	2.69	0.59
	Residual	208.31	46	4.53	
HAP	Group	0.02	1	0.02	0.28
	Residual	3.64	46	0.08	
KID	Group	4.83	1	4.83	2.36
	Residual	94.14	46	2.05	
INF	Group	2.33	1	2.33	2.19
	Residual	49.14	46	1.07	
MDI	Group	0.00	1	0.00	0.02
	Residual	13.91	46	0.30	
MOI	Group	0.11	1	0.11	1.92
	Residual	2.70	46	0.06	

TABLE II (Continued)

	Source	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
OUT	Group	2.45	1	2.45	0.62
	Residual	181.47	46	3.95	

[1]Refer to Appendix M for a translation of all abbreviations.

*$p < .05$.

†$p < .005$.

TABLE III

MEAN SCORES OF AGE, EDU, KIH, ISS, INS, MAS, MBS, FEM, ASST, SEC, FUN, OCC, HAP, KID, INF, MDI, MOI, FRI, PAR, EHU, RHU, ECH, RCH, HOP, SOS, NIM, TWI, TMO, APP, AND, SOD, MHB, AHB, ABS, TON, OUT, ANX, HOS, PYS, PSS[1]

Variable	ERT Group (N = 18) $\bar{X}$ (S.D.)	NonERT Group (N = 30) $\bar{X}$ (S.D.)
AGE	56.67 (5.50)	51.63 (7.83)
EDU	3.56 (1.72)	2.33 (1.15)
KIH	0.44 (0.61)	1.30 (1.49)
ISS	0.22 (0.43)	0.70 (0.46)
INS	0.44 (0.51)	0.10 (0.31)
MAS (BSRI)	3.89 (0.72)	4.75 (0.79)
MBS (BSRI-B)	2.92 (0.35)	3.28 (0.43)
FEM (BSRI-B)	3.76 (0.37)	4.46 (0.53)
FEM (BSRI)	4.59 (0.48)	4.97 (0.54)
FEM (HBS)	4.59 (0.53)	3.91 (0.36)
ASST	119.22 (15.67)	105.97 (13.20)
SEC	19.22 (4.29)	15.90 (3.84)
FUN	0.67 (0.53)	0.50 (0.51)
OCC	2.26 (2.01)	2.82 (2.22)
HAP	0.93 (0.17)	0.93 (0.26)
KID	2.50 (1.06)	3.26 (1.59)
INF	3.32 (1.00)	3.70 (0.98)
MDI	0.47 (0.58)	0.40 (0.55)
MOI	0.00 (0.00)	0.95 (0.30)
FRI	0.60 (0.16)	0.20 (0.40)
PAR	4.20 (0.77)	3.70 (0.93)
EHU	3.47 (0.93)	3.43 (1.05)
RHU	3.63 (0.48)	3.56 (1.03)
ECH	3.80 (0.36)	3.35 (0.66)
RCH	3.83 (0.45)	3.76 (1.14)
HOP	3.37 (1.49)	3.93 (1.41)

TABLE III (Continued)

Variable	ERT Group (N = 18) $\bar{X}$ (S.D.)		NonERT Group (N = 30) $\bar{X}$ (S.D.)	
SOS	22.00	(5.53)	21.45	(5.58)
NIM	0.65	(0.17)	0.04	(0.13)
TWI	0.23	(0.46)	0.13	(0.35)
TMO	0.46	(0.52)	0.46	(0.51)
APP	2.93	(0.26)	2.57	(0.85)
AND	5.87	(1.70)	4.56	(2.05)
SOD	5.41	(0.19)	5.43	(0.48)
MHB	3.15	(0.63)	3.39	(0.52)
AHB	3.02	(0.54)	3.02	(0.74)
ABS	1.74	(0.36)	1.63	(0.48)
TON	2.87	(1.46)	3.26	(1.15)
OUT	4.43	(1.91)	4.97	(1.83)
ANX	19.72	(8.55)	24.76	(9.05)
HOS	10.77	(7.06)	11.96	(5.14)
PYS	22.44	(4.23)	21.30	(6.18)
PSS	11.44	(2.28)	9.87	(3.05)

[1]Refer to Appendix M for a translation of all abbreviations.

with the exception of the analysis of the variable "children currently living at home," F (1,44) = 1.82, $p > .05$. Table IV summarizes the significant 2X2 analyses. The main effect for menopausal status was significant for the variable age, F (1,44) = 16.75, $p < .0002$. The main effect for estrogen status was significant for the variable "actively seeking information about menopause," F (1,44) = 7.83, $p < .007$, in addition to the variable "masculine score on the BSRI," F (1,44) = 4.10, $p < .05$. The main effects and the interaction effects were nonsignificant for the following variables: education, "passively receiving information about menopause," and "masculine score on the BSRI-B." The data indicate that compared to the ERT group, the nonERT group was more active in seeking information about menopause and they attributed to themselves more masculine traits on the BSRI. Compared to the menopausal group, the post-menopausal group was older. Because of the potential confounding of the demographic variables of age and education with other variables studied, analyses of covariance (ANCOVAs) were employed where appropriate, using AGE and EDU as the covariates. Such results are discussed with the related ANOVAs below.

Hypothesis one predicted differences between the ERT and nonERT groups in feminine sex role orientation, hypothesis two in assertion and self-esteem, hypothesis three in verbal anxiety and hostility, and hypothesis four in psychological and psychosomatic symptomatology. A MANOVA was performed on these variables. The hypothesis of no effects due to estrogen status was rejected, F (11,36) = 2.22, $p < .03$ by Wilk's Criterion. In view of this overall significance, univariate ANOVAs were performed on the individual hypotheses.

TABLE IV

2X2 ANALYSES OF VARIANCE: AGE, EDU, ISS, INS, MAS, MBS[1]

Source	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
AGE				
Group	917.71	3	305.90	8.11**
ERT	10.52	1	10.52	0.28
MST	632.03	1	632.03	16.75**
ERT*MST	0.68	1	0.68	0.02
Residual	1660.27	44	37.73	
EDU				
Group	18.05	3	6.02	3.01*
ERT	5.19	1	5.19	2.60
MST	0.04	1	0.04	0.02
ERT*MST	1.20	1	1.20	0.60
Residual	87.87	44	1.20	
ISS				
Group	3.31	3	1.10	5.61†
ERT	1.54	1	1.54	7.83†
MST	0.07	1	0.07	0.35
ERT*MST	0.68	1	0.68	3.43
Residual	8.67	44	0.20	
INS				
Group	1.55	3	0.52	3.27*
ERT	0.02	1	0.02	0.12
MST	0.14	1	0.14	0.86
ERT*MST	0.08	1	0.08	0.48
Residual	6.93	44	0.16	
MAS(BSRI)				
Group	8.76	3	2.92	4.90*
ERT	2.44	1	2.44	4.10*
MST	0.01	1	0.01	0.03
ERT*MST	0.54	1	0.54	0.91
Residual	26.22	44	0.59	
MBS(BSRI-B)				
Group	1.92	3	0.64	4.09*
ERT	0.20	1	0.20	1.32
MST	0.44	1	0.44	2.83
Residual	6.90	44	0.15	

[1]Refer to Appendix M for a translation of all abbreviations.

*$p < .05$.

†$p < .005$.

**$p < .0005$.

Hypothesis one predicted a greater adherence to traditional feminine traits and behaviors in the ERT group compared to the nonERT group as measured by the BSRI, HBS, and BSRI-B. The results for feminine adherence as measured by the BSRI-B and HBS were nonsignificant, t (36) = 1.52, $p > .05$; t (32.5) = 0.44, $p > .05$, respectively. The mean scores for the feminine adherence on the BSRI were in the opposite direction than predicted. Table III summarizes the means and standard deviations. Fixed effects 2X2 ANOVAs were then performed. Table V summarizes the ANOVAs. The main effect for menopausal status was significant for the variables of feminine adherence as measured by both the BSRI and the BSRI-B, F (1,44) = 6.18, $p < .02$; F (1,44) = 4.09, $p < .05$, respectively. The main effects and the interaction effect were nonsignificant for the variable feminine adherence as measured by the HBS. t-tests were utilized to assess the difference between the menopausal groups for the above variables in which a significant main effect for menopausal status was found. Results for the BSRI indicate that compared to the post-menopausal group, the currently menopausal group had significantly higher scores, t (29.8) = 2.98, $p < .006$, and also had significantly higher scores on the BSRI-B, t (40.1) = 2.53, $p < .02$. Table VI summarizes the means and standard deviations. Tests indicated that neither AGE nor EDU was related to the results of the BSRI or BSRI-B, so that covariate adjustment was unnecessary. The data indicate that compared to the post-menopausal group, the currently menopausal group attributes to themselves more feminine traits and behaviors.

Hypothesis two predicted that compared to the nonERT group, the ERT group would show less assertion and self-esteem on the Assertiveness Inventory (AI) and the Self-Esteem Scale (SEC). The t-tests performed following the overall significant MANOVA supported the hypothesis.

TABLE V

2X2 ANALYSES OF VARIANCE: FEMININITY (BSRI, HBS, BSRI-B)

Source	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
FEM (BSRI)				
Group	3.30	3	3.30	4.49*
ERT	0.40	1	0.40	1.64
MST	1.51	1	1.51	6.18*
ERT*MST	0.15	1	0.15	0.64
Residual	10.79	44	0.24	
FEM (HBS)				
Group	0.65	3	0.21	0.67
ERT	0.10	1	0.10	0.31
MST	0.56	1	0.56	1.72
ERT*MST	0.02	1	0.02	0.08
Residual	14.30	44	0.32	
FEM (BSRI-B)				
Group	1.03	3	0.34	2.47
ERT	0.05	1	0.05	0.39
MST	0.57	1	0.57	4.09*
ERT*MST	0.12	1	0.12	0.86
Residual	6.15	44	0.13	

*$p < .05$.

TABLE VI

MEANS FOR FEMININITY (BSRI, BSRI-B) AND SOMATIC SYMPTOMS BY MST

Variable	Post-Menopausal N = 30	Currently Menopausal N = 18
FEM (BSRI)	4.66 (0.45)	5.12 (0.57)
FBS (BSRI-B)	3.75 (0.39)	4.02 (0.34)
Somatic Symptoms	20.37 (5.88)	24.06 (5.74)

Compared to the nonERT group, the ERT group was less assertive, t (31.2) = 3.00, $p < .0002$, and showed less self-esteem, t (32.8) = 2.70, $p < .005$. Table III summarizes the means and standard deviations. Fixed effects 2X2 ANOVAs were then employed as summarized in Table VII. The main effects and interaction effects were nonsignificant for both the variables assertion and self-esteem. ANCOVAs were then employed using the covariates of AGE and EDU. Table VIII summarizes the analyses. For assertion, the covariates were nonsignificant, estrogen status was significant, $F = 5.63$ (1,44), $p < .02$. For the dependent measure of self-esteem, both the covariates of age and education were significant; estrogen status was nonsignificant. Therefore, when adjusted for the variation due to age and education, the differences in self-esteem due to estrogen status vanish. The data indicate a nonzero relationship between self-esteem and education, r (46) = -0.51, $p < .002$, and a nonzero relationship between self-esteem and age, r (46) = -0.43, $p < .003$. Table IX presents the adjusted group means. Hypothesis two, therefore, was supported only as it pertained to assertiveness. The hypothesis was not supported as it pertained to self-esteem. When adjusted for the variation due to age and education, the initial differences in self-esteem between the ERT and nonERT groups vanish.

Hypothesis three predicted that compared to the nonERT group, the ERT group would show greater verbal hostility and anxiety in response to the predetermined TAT cards. Because anxiety and hostility might be related to the total number of phrases given (TCF) by the subject, a t-test was performed comparing the ERT and nonERT groups on the variable TCF. The results indicated no group differences in the total number of phrases spoken during administration of the TAT. Because of the

TABLE VII

2X2 ANALYSES OF VARIANCE: ASSERTION AND SELF-ESTEEM

Source	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
ASSERTION				
Group	2146.81	3	715.60	3.48*
ERT	334.40	1	334.40	1.62
MST	158.67	1	158.67	0.77
ERT*MST	11.41	1	11.41	0.06
Residual	9058.00	44	205.86	
SELF-ESTEEM				
Group	127.58	3	42.53	2.53
ERT	3.47	1	3.47	0.21
MST	1.00	1	1.00	0.06
ERT*MST	2.41	1	2.41	0.14
Residual	738.40	44	16.78	

*$p < .05$.

TABLE VIII

ANALYSES OF COVARIANCE: ASSERTION AND SELF-ESTEEM

Source	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
ASSERTION				
Group	2188.93	3	729.64	3.56*
AGE	391.45	1	391.45	1.91
EDU	643.66	1	643.66	3.14
ERT	1153.82	1	1153.82	5.63*
EDU	963.02	1	963.02	4.70*
AGE	72.09	1	72.09	0.35
ERT	1153.82	1	1153.82	5.63*
Residual	9015.88	44	204.91	
SELF-ESTEEM				
Group	296.25	3	98.75	7.63**
AGE	157.08	1	157.08	12.13†
EDU	121.73	1	121.73	9.40†
ERT	17.45	1	17.45	1.35
EDU	225.25	1	225.25	17.40**
AGE	53.56	1	53.56	4.14*
ERT	17.45	1	17.45	1.35
Residual	569.73	44	12.95	

*$p < .05$.

†$p < .005$.

**$p < .0005$.

TABLE IX

ADJUSTED GROUP MEANS FOR THE VARIABLES ASSERTION, SELF-ESTEEM, ANXIETY, AND HOSTILITY FOR THE COVARIATES OF AGE AND EDUCATION

Group	Variables			
	Assertion	Self-Esteem	Anxiety	Hostility
Estrogen (N = 18)	118.00	18.01	20.88	11.51
Nonestrogen (N = 30)	106.70	16.63	24.07	11.53

TABLE X

2X2 ANALYSES OF VARIANCE: ANXIETY AND HOSTILITY

Source	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
HOSTILITY				
Group	84.91	3	28.30	0.80
ERT	3.47	1	3.47	0.10
MST	52.14	1	52.14	1.48
ERT*MST	16.88	1	16.88	0.48
Residual	1547.07	44	35.16	
ANXIETY				
Group	338.32	3	112.77	1.39
ERT	102.90	1	102.90	1.27
MST	31.21	1	31.21	0.39
ERT*MST	20.83	1	20.83	0.26
Residual	3566.93	44	81.07	

nonsignificant findings, correction of anxiety and hostility for TCF was not necessary. The MANOVA discussed above indicated differences between the ERT and nonERT groups. Examination of the means for the variable anxiety indicated differences to be in the opposite direction than predicted. Hostility as a dependent measure was nonsignificant, t (27.9) = 0.62, $p > .05$. See Table III for the means and standard deviations. To assess possible differences due to menopausal status, 2X2 fixed effects ANOVAs were performed. Table X summarizes the ANOVAs. The main effects and the interaction effects for both the dependent measures were nonsignificant. ANCOVAs were then performed on hostility and anxiety to adjust for the variation due to age and education. Table XI summarizes the analyses. For hostility and anxiety, the covariate of education was significant; a nonzero relationship between education and hostility, r (46) = 0.28, $p < .05$, and a nonzero relationship between education and anxiety, r (46) = 0.37, $p < .008$, was indicated. Table IX presents the adjusted group means. The estrogen status effects, once adjusted for the covariates, replicated the results of the 2X2 ANOVAs. Hypothesis three, therefore, was not supported. The estrogen and nonestrogen groups did not differ in the amount of anxiety and hostility generated by TAT stories.

Hypothesis four predicted that compared to the nonERT group, the ERT group would show greater psychologic and psychosomatic symptomatology as measured by the Menopausal Symptom Checklist (MC). The MANOVA discussed above indicated differences between the ERT and nonERT groups. The t-test using the dependent measure of psychological symptoms was nonsignificant, t (45.1) = 0.75, $p > .05$, and the dependent measure of psychosomatic symptoms was significant, t (43.7) = 2.03, $p < .02$.

TABLE XI

ANALYSES OF COVARIANCE: ANXIETY AND HOSTILITY

Source	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
HOSTILITY				
Group	140.81	3	46.94	1.38
AGE	2.30	1	2.30	0.07
EDU	138.50	1	138.50	4.09*
ERT	0.00	1	0.00	0.00
EDU	130.99	1	130.99	3.87*
AGE	9.81	1	9.81	0.29
ERT	0.00	1	0.00	0.00
Residual	1491.17	44	33.89	
ANXIETY				
Group	676.45	3	225.48	3.07*
AGE	15.97	1	15.97	0.22
EDU	568.26	1	568.26	7.74*
ERT	92.23	1	92.23	1.26
EDU	554.07	1	554.07	7.55*
AGE	30.16	1	30.16	0.41
ERT	92.23	1	92.23	1.26
Residual	3228.80	44	73.38	

*$p < .05$.

Table III summarizes the means and standard deviations. To assess possible differences due to menopausal status, 2X2 fixed effects ANOVAs were then employed. Table XII summarizes the analyses. For both the measures of psychological and psychosomatic symptoms, the main effects and the interaction effects were nonsignificant. ANCOVAs were then performed to adjust for the variation due to age and education (see Table XIII). For the measure psychological symptoms, the covariate education was significant, indicating a nonzero relationship between education and psychological symptoms, r (46) = -0.35, $p < .015$. Table IX presents the adjusted group means. Adjusted effects due to estrogen status were nonsignificant. Tests indicated that neither age nor education was related to psychosomatic symptoms; therefore, covariate adjustment was unnecessary. In summary, the estrogen and nonestrogen groups do not differ in the amount of psychological and psychosomatic symptoms reported on the MC.

Hypothesis five predicted that, compared with the menopausal non-ERT group, the menopausal ERT group would show greater somatic symptomatology on the MC. The t-test utilized to assess the differences between the two groups was nonsignificant, t (3.5) = 0.67, $p > .05$. Thus, hypothesis five was not supported. The menopausal estrogen group and the menopausal nonestrogen group did not differ in the amount of somatic symptoms reported on the MC.

Hypothesis six compared the menopausal and post-menopausal groups and predicted higher somatic symptomatology in the currently menopausal group as measured by the MC. The t-test yielded significance, t (36.6) = 2.13, $p < .02$. Table VI summarizes the means and standard deviations. Hypothesis six, therefore, was supported. Compared to the post-

TABLE XII

2X2 ANALYSES OF VARIANCE: PSYCHOLOGICAL AND PSYCHOSOMATIC SYMPTOMS

Source	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Psychological Symptoms				
Group	138.95	3	46.32	1.58
ERT	51.50	1	51.50	1.76
MST	97.14	1	97.14	3.32
ERT*MST	27.08	1	27.08	0.92
Residual	1288.53	44	29.28	
Psychosomatic Symptoms				
Group	62.32	3	20.77	2.81
ERT	21.38	1	21.38	2.89
MST	27.78	1	27.78	3.75
ERT*MST	6.53	1	6.53	0.88
Residual	325.60	44	7.40	

TABLE XIII

ANALYSES OF COVARIANCE: PSYCHOLOGICAL SYMPTOMS

Source	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Psychological Symptoms				
Group	176.15	3	58.72	2.06
AGE	14.87	1	14.87	0.52
EDU	159.65	1	159.65	5.61*
ERT	1.63	1	1.63	0.06
EDU	172.81	1	172.81	6.08*
AGE	1.71	1	1.71	0.06
ERT	1.63	1	1.63	0.06
Residual	1251.33	44	28.44	

*$p < .05$.

menopausal group, the currently menopausal group had higher somatic symptomatology.

Hypothesis seven predicted that, compared to the post-menopausal nonERT group, the post-menopausal ERT group would show higher verbal anxiety and hostility as measured by responses to the TAT, less androgyny as measured by the BSRI, HBS, and BSRI-B, less self-esteem as measured by the SE, and less assertion as measured by the AI. The t-tests that supported hypothesis seven follow. They indicated that compared to the post-menopausal ERT group, the post-menopausal nonERT group was more androgynous (BSRI), t (28) = 2.35, $p < .01$, reported more assertion, t (28) = 3.00, $p < .003$, and more self-esteem, t (28) = 1.86, $p < .03$. The t-tests for the other variables listed above were nonsignificant and are as follows: anxiety, t (28) = 1.72, $p > .05$; hostility, t (28) = 0.55, $p > .05$; androgyny (HBS), t (28) = 1.10, $p > .05$; and androgyny (BSRI-B), t (28) = 1.55, $p > .05$. Table XIV presents the means and standard deviations. ANCOVAs were then performed on all the variables to adjust for possible variation due to age and education (see Table XV). For anxiety, the covariate education was significant, indicating a nonzero relationship between education and anxiety, r (28) = 0.45, $p < .01$. Estrogen status was nonsignificant. For hostility, the covariate education was also significant, indicating a nonzero relationship between education and hostility, r (28) = -0.42, $p < .02$. Again, estrogen status was nonsignificant. For androgyny (BSRI and BSRI-B) and assertion, neither age nor education were related, so covariate adjustment was necessary. For androgyny (HBS), the covariate age was significant, indicating a nonzero relationship between age and androgyny (HBS), r (28) = 0.29, $p < .05$. Estrogen status remained

TABLE XIV

MEANS FOR: ANDROGYNY (BSRI, HBS, BSRI-B), ASSERTION, SELF-ESTEEM, ANXIETY, AND HOSTILITY, BY POST-MENOPAUSAL STATUS

Variable	Post-Menopausal, Estrogen	Post-Menopausal, Nonestrogen
Androgyny (BSRI)	5.56 (1.83)	4.05 (1.69)
Assertion	118.87 (16.92)	103.67 (9.87)
Self-Esteem	19.13 (4.72)	16.20 (3.86)
Anxiety	19.60 (9.26)	26.06 (11.23)
Hostility	11.53 (7.54)	12.73 (3.73)
Androgyny (HBS)	1.35 (0.67)	1.08 (0.66)
Androgyny (BSRI-B)	1.87 (0.45)	1.57 (0.56)

TABLE XV

ANALYSES OF COVARIANCE: ANXIETY, HOSTILITY, ANDROGYNY (HBS), AND SELF-ESTEEM

Source	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Anxiety				
Group	721.41	3	240.47	2.44
AGE	47.72	1	47.72	0.48
EDU	631.55	1	631.55	6.42*
ERT	42.14	1	42.14	0.43
EDU	665.07	1	665.07	6.76*
AGE	14.20	1	14.20	0.14
ERT	42.14	1	42.14	0.43
Residual	2558.76	26	98.41	
Hostility				
Group	190.00	3	63.33	2.03
AGE	19.15	1	19.15	0.61
EDU	160.24	1	160.24	5.13*
ERT	10.62	1	10.62	0.34
EDU	178.22	1	178.22	5.71*
AGE	1.16	1	1.16	0.04
ERT	10.62	1	10.62	0.34
Residual	811.46	26	31.21	
Androgyny (HBS)				
Group	2.74	3	0.91	2.37
AGE	1.87	1	1.87	4.84*
EDU	0.24	1	0.24	0.63
ERT	0.62	1	0.62	1.62
EDU	0.00	1	0.00	0.00
AGE	2.10	1	2.10	5.45*
ERT	0.62	1	0.62	1.62
Residual	10.05	26	0.38	
Self-Esteem				
Group	226.22	3	75.41	5.47†
AGE	110.25	1	110.25	8.00*
EDU	112.43	1	112.43	8.16*
ERT	3.54	1	3.54	0.26
EDU	194.00	1	194.00	14.07†
AGE	28.69	1	28.69	2.08
ERT	3.54	1	3.54	0.26
Residual	358.45	26	13.79	

*$p < .05$.

†$p < .005$.

nonsignificant. For self-esteem, the covariate education was significant, indicating a nonzero relationship between education and self-esteem, r (28) = -0.58, $p < .0009$. Table XVI presents the adjusted group means. Estrogen status was nonsignificant. Results from hypothesis seven can be summarized as follows: First, the hypothesis was supported for assertion and androgyny (BSRI). Second, the hypothesis was not supported for hostility, anxiety, self-esteem, and androgyny (HBS and BSRI-B). When adjusted for age and education, the initial differences in self-esteem due to estrogen status disappeared.

Since androgyny (BSRI) was a significant variable when examined above, it was decided to further examine androgyny, taking into account the criticisms lodged by Spence and Helmreich (as best summarized in their recently published book, 1978) and Bem's (1975) response to those criticisms. See Appendix A for a summary of the criticism and response. Employing the method recommended by Bem (1975), all of the post-menopausal women were classified into one of the following groups: Androgynous, Undifferentiated, Feminine, Near Feminine, Masculine, and Near Masculine. This classification system was based upon the mean masculine and feminine scores as calculated on all subjects in this study. These means approximate the norms found in another Oklahoma sample (Vance, 1977). Table XVII summarizes the classification breakdown and means for masculine and feminine scores. Using Fisher's Exact Probability Test, no significant differences were found between the post-menopausal estrogen and post-menopausal nonestrogen groups for the comparison, Feminine Role Adherence (Feminine + Near Feminine versus All Others). Significant differences were found between the post-menopausal estrogen and post-menopausal nonestrogen groups for the following

TABLE XVI

ADJUSTED GROUP MEANS FOR THE VARIABLES ANDROGYNY (HBS), SELF-ESTEEM, ANXIETY, HOSTILITY, AND PSYCHOLOGICAL SYMPTOMS FOR THE COVARIATES OF AGE AND EDUCATION

Group	Variables				
	Androgyny (HBS)	Self-Esteem	Anxiety	Hostility	Psychological Symptoms
Post-Menopausal, Estrogen (N = 15)	1.38	18.05	21.50	12.80	12.68
Post-Menopausal, Nonestrogen (N = 15)	1.05	17.28	24.17	11.46	19.98

TABLE XVII

MEAN SCORES AND CLASSIFICATION OF POST-MENOPAUSAL GROUPS

Group	Estrogen	Nonestrogen
Undifferentiated	4	3
Androgynous	0	4
Near Feminine	3	2
Feminine	6	2
Near Masculine	2	2
Masculine	0	2

$\bar{X}_{FEMININE} = 4.83.$

$\bar{X}_{MASCULINE} = 4.43.$

comparisons: (1) Androgyny (Androgynous versus All Others), and (2) Role Orientation (Feminine + Near Feminine + Undifferentiated versus Androgynous + Masculine + Near Masculine). Compared to the post-menopausal estrogen group, more women in the post-menopausal nonestrogen group were classified as androgynous and more were classified as "out of role orientation," i.e., more androgynous, near masculine, and masculine.

CHAPTER V

DISCUSSION

The analysis involving several variables that were not included in any of the seven formal hypotheses yielded significant results. In some cases, these findings affected those pertaining to the formal hypotheses. For this reason, such findings will be discussed first. The ERT group was significantly older than the nonERT group. This finding reflects the unequal sampling in the study. Only three menopausal ERT women served as subjects, compared to fifteen menopausal nonERT women. For the ERT group, therefore, more statistical weight was given to the post-menopausal women. It is not surprising that these women were found to be older. The fact that one group was older than the other could systematically affect all other analyses completed. Thus, in the examination of specific hypotheses, age was adjusted for statistically. Although levels of formal education did not yield significant differences, one may speculate that such a variable as education could systematically influence any of the other variables studied. Thus, in the examination of specific hypotheses, education was also adjusted statistically. Several other variables were found to differentiate the ERT and nonERT groups. Compared to the ERT group, the nonERT group was found to more actively seek information about menopause. One might speculate that these women show an increased desire and need to obtain information about menopause and ERT. Through this self-education process, these

women may more easily reject the suggestion of their physician to take ERT. One might speculate, therefore, that the difference found in methods for obtaining information could be linked to the nonERT group's decision not to use ERT. Compared to the ERT group, the nonERT group attributed to themselves more masculine traits on the BSRI. This finding may have biological implications. Seaman and Seaman (1977), for example, report that birth control pills (hormonal changes) can affect psychological adjustment. But this finding also lends support to the nontraditional, "out of sex role" aspects of these women. The major rationale for the study was that the nonERT group employed avenues other than those defined by traditional femininity to deal with the stress of menopause. By attributing more stable, masculine traits to themselves, these women create other ways of confirming their personal worth and femininity, and could therefore more easily reject the use of ERT. The present finding supports this rationale, with the nonERT group describing themselves through the use of more "nontraditional" adjectives.

The study was unable to demonstrate a relationship between both feminine sex role perception and feminine sex role behavior and estrogen status; however, a relationship was established between these two variables and menopausal status. Compared to the post-menopausal group, the currently menopausal group was more feminine in their self-perceptions and reported behaviors. Such a finding can be explained biologically; the potentiality of hormonal influences upon behavior must be acknowledged, as previously discussed in Seaman and Seaman (1977). The currently menopausal stage of female development is characterized by hormonal instability, the post-menopausal stage by relative hormonal stability. If these two groups are different on relative hormonal

stability, the possibility exists that they will be differentially affected psychologically. The original hypothesis, however, was based upon the assumption that the ERT group was more sensitive to the issues of maintaining youth and beauty, hence, their use of ERT. This increased sensitivity was assumed to be related to an increased adhernce to a stereotypic feminine sex role. There is a possibility that the nonsignificance of ERT status was related to the confounding in the design due to unequal cell size. There is, however, an alternate explanation for the finding: the present result may imply a more pervasive reaction to menopause, ERT being too selective a predictor. Using ERT as the predictor of differences in feminine sex role adherence, ignored the potency of the psychological and hormonal impact of menopause itself. It can be assumed that changing societal values play a major role in the present finding of increased feminine sex role adherence at menopause. Menopause in our society has many negative implications and carries with it a great many myths and fears (Weideger, 1977; Posner, 1979). Skultans (1970) describes menopause as a "rite de passage," but unlike other social transitions, the new role for the menopausal woman is not clearly defined. One finds during this transition, therefore, a reinforcement of misinformation and misunderstanding about the changes brought about by menopause. One might speculate that in the face of these myths and fears, a woman may show an increased adherence to that which she may feel she is losing--her femininity. The post-menopausal group, having "survived" and adjusted to this stage, would be less inclined to require the increased adherence in sex role. DeBeavoir (1953) states:

> The difficulties of the menopause continued--sometimes until death--in the woman who cannot make up her mind to grow old;

> if she has no other resources than the exploitation of her physical charms, she will battle step by step to preserve them (p. 582).

The present results may indicate that more rigid adherence to the feminine stereotype may be the avenue in which the menopausal woman "battles" the stress of menopause. By maintaining misunderstanding of the menopausal process and the resulting ill-defined roles, society may be the perpetrator of some of the psychological, specifically sex role related, stress of menopause. Clearly, more research is needed focusing upon the possible etiology of such differences. The addition of a third group, a pre-menopausal group, would be required to test the hypothesis of increased feminine sex role adherence at menopause.

The study demonstrated a relationship between assertion and estrogen status, not only across menopausal status, but when comparing the two post-menopausal groups. Women in both of the ERT groups were significantly less assertive than women in the nonERT groups. Because the basic difference between the ERT and nonERT groups was hormonal, both physiological and psychological explanations for this finding must be acknowledged. There is a high probability that ERT, when employed over a long period of time, can affect certain personality variables. Although it is difficult to generalize from animal research to human beings, one cannot ignore the general findings in the animal literature that estrogen is related to "feminine" sexual and mating behaviors and testosterone to "masculine" sexual and mating behaviors, in addition to aggressive behaviors (Hamburg and Lunde, 1966).[1] One can also address psychologically-based explanations for this finding.

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[1]The reader is directed to T. L. Bennett, Brain and Behavior, Belmont, Calif.: Wadsworth, 1977, for a review of the influence of hormones upon sexual behavior.

Low assertion is commonly related to the interpersonal perception of the increased importance of the views and reactions of others. As DeBeauvoir (1953) states, a major source of the traditional female's self-worth is dependent upon other's judgment of their personal value. In other words, traditional females are trained to be sensitive to the external evaluation of themselves by others. Assertion is not compatible with this socialization process, in that assertion is dependent upon self-determination and meeting one's own needs. The lower assertion seen in the ERT groups, therefore, is consistent with traditional female upbringing. Lower assertion is also associated with difficulties in expressing individual rights. This is frequently, but not uniquely found when confronted with authority. The finding of less assertion exhibited by the ERT groups is consistent with the finding that this group is also less likely to actively seek information about menopause. One might also speculate that these women are also less likely to reject a physician's urging to use ERT.

The present study did not demonstrate the relationship of self-esteem to ERT that was predicted, neither across menopausal status nor when specifically comparing the post-menopausal groups. Self-esteem was found to be related to age and educational level when examined across menopausal status. Decreasing self-esteem was related to both increasing age and decreasing levels of formal education. When comparing the post-menopausal groups, decreasing levels of formal education was related to decreasing self-esteem. The indicated relationship between self-esteem and age is consistent with recent experimental and theoretical writings about women (Posner, 1975; 1977; 1979). Bart (1976), although specifically addressing depression in middle-aged women, incorporates

self-esteem into her discussion. She states: "Depressions in middle-aged women are due to their lack of important roles and subsequent loss of self-esteem, rather than the hormonal changes of the menopause" (p. 358). With aging, women in our society lose the primary means of self-esteem: "giving" through the maternal role. As long as this "transient" mode remains the primary source of self-worth for women, the reduction of such with age appears inevitable. The implication of society's role in maintaining this cycle in addition to its implications for the "menopausal syndrome" are discussed later in this study.

The relationship between self-esteem and education, found not only across menopausal status but when comparing the post-menopausal groups, was found to be positive, with increasing self-esteem related to higher levels of formal education. This relationship could reflect the more highly educated women being more sensitive to the instrument employed to measure self-esteem and thus being able to present themselves in a more positive light. More likely, the increased self-esteem may be attributable to the availability of other sources of self-esteem for the more educated female. Society places a high value upon education. Additionally, the more educated an individual is, the greater are the occupational/role opportunities. By giving a woman more options for behavior, outside the traditional feminine sex role, sources of self-esteem would be more varied. Thus, the loss of one role, i.e., the maternal/reproductive role, would not necessarily lead to loss of self-esteem.

The study did not demonstrate a relationship between ERT and anxiety nor between ERT and hostility. These findings were consistent across menopausal status and when comparing the post-menopausal groups.

However, a relationship was found between both of these variables and education. Increasing education was related to both increased anxiety and increased hostility. One may speculate that as women are more educated they exhibit more anxiety and hostility. As our changing society focuses upon inequities between men and women and the problems inherent in such inequities, some women are becoming increasingly concerned. It is not unreasonable to speculate that highly educated women are more aware of these differences and are more likely to respond to this situation with increased hostility and to some extent anxiety. Certainly the loss of naivete is heralded in the song, "How you gonna keep 'em down on the farm, after they've seen Paris?"

No relationship could be established between ERT and both psychologic and psychosomatic symptomatology on the MC. However, women with higher education reported fewer psychological symptoms. The relationship may indicate that more educated women are less prone to the psychological stress of menopause because of increased options for behavior outside the home, in addition to a clearer understanding of the menopausal process itself.

No relationship was found between estrogen status and somatic symptoms. This finding was also found when comparing the two menopausal groups. Cautious interpretation of this finding is necessary because of the especially small number of menopausal ERT women presently employed. One might speculate, however, about the somatic relief attributable to ERT. The present finding would lend support for other, nonsomatic reasons for the use of ERT. Examination of the interview data pertaining to reasons for the initial use of ERT may provide information related to this question. The present study employed a total of 18 women

currently using ERT. Eight of the 18 gave somatic reasons for their use of this drug. These reasons included the symptoms of hot flashes, frequent and heavy menses, and vaginal discharges. The effectiveness of ERT on these types of symptoms has been positive, as previously discussed. One woman reported a decrease in dry and tight feelings in her eyes while using contact lenses. Seven of the 18 gave vague reasons, such as "feeling better," "my doctor told me I had a low level of estrogen in my tissues," and "my doctor said I just needed it." One subject gave primarily emotional reasons, including depression and irritability, while one woman did not know the drug she was taking was estrogen. All of the women, however, reported feeling better after initiation of ERT. If ERT were dispenses exclusively for somatic relief, it would seem reasonable to predict that more than half of the sample using this drug would justify their use through the relief of somatic symptoms. This was not found to be the case. Additionally, since all subjects (regardless of their reasons for taking ERT) reported improvement, it would appear that ERT has some placebo effects.

As predicted, a relationship between menopausal status and somatic symptoms was found. Compared to the post-menopausal group, the currently menopausal reported more somatic symptoms on the MC. This supports previous research indicating decreasing somatic symptomatology with increasing age (Neugarten and Kraines, 1965). The generally accepted reason for this phenomenon is the relative hormonal stability of the post-menopausal group.

For the post-menopausal groups, a relationship between the androgyny on the BSRI and estrogen status was demonstrated. Post-menopausal nonERT women were found to be more androgynous than the post-menopausal

ERT women. This finding is not inconsistent with that previously reported: the nonERT group acknowledged more masculine traits to themselves. Both of these findings lend support to the original rationale for the hypothesis--compared to the post-menopausal ERT group, the post-menopausal nonERT group had developed more nontraditional avenues of dealing with role transition and subsequent change in status. Although this effect cannot at this time be directly related to their decision not to use ERT, the nontraditional aspects of these women should be further explored in research.

The results of this study can be summarized within a conceptual framework whereby menopausal status and estrogen status are viewed as one component of female behavior. These two behaviors can be separated statistically, but such a separation may be artificial considering menopausal status and estrogen status are facets of this singular component of middle-age women. Findings that were related to estrogen status were: women not using ERT were more active seekers of information about menopause, had higher masculine scores (BSRI), and had higher assertion scores. The post-menopausal women in using ERT had lower assertion scores and lower androgyny scores (BSRI). Effects related to menopausal status were: post-menopausal women were older and had lower femininity scores (BSRI and BSRI-B). Currently menopausal women reported more somatic symptoms. Certain other components of female behavior are age and level of formal education. Differences in self-esteem were related to differences in age. Differences in anxiety, hostility, self-esteem, and psychological symptoms were related to educational level.

The results of the present study can also be summarized on the basis of female socialization and sex role development. Consider the

possibility that the "emnopausal syndrome" is largely a fantasy generated by society on the basis of sex and age roles. Society creates, through traditional female socialization, the expectation that femininity is tied to what a woman can do for others; this belief system is most dramatically seen in values associated with "motherhood." When this capacity for giving is greatly reduced at menopause, a woman's value as an individual is threatened. One interpretation of the present data is that indeed the menopausal woman is threatened as shown by an increased adherence to the traditional feminine role. By passively promoting misunderstanding and the mystery often associated with menopause, in addition to emphasizing its medical nature through ERT, society maintains this expected reaction. Examination of the advertisements for ERT in medical journals and elsewhere is documentation for the view proposed here. In these advertisements, the menopausal woman is presented as a "wilted flower" wrought with nonsomatic, psychological difficulties in addition to somatic problems. The present data can be interpreted to demonstrate that the menopausal woman who rejects ERT (society's way of telling her how to fix those things that are wrong with her) also to a degree rejects some of society's implications of proper female behavior. She is more masculine and in the post-menopausal years more androgynous. If the menopausal woman accepts ERT, she is likely to be less assertive (a stereotypic female trait), this behavior continuing into the post-menopausal years. The woman who appears to fare best is the more educated woman who does not use ERT. This woman appears to have broadened her sources of personal worth, resulting in increased self-esteem and has fewer psychological symptoms compared to her less educated, ERT counterpart. The price paid, however, could be

increased levels of anxiety and hostility. As more and more women begin to expand their roles outside of the home, with resulting societal changes in values, it could be predicted that the increased anxiety and hostility seen would diminish. As women take on more roles that are not developmentally- or time-limited, one could similarly predict that the "menopausal syndrome," with its emphasis upon psychological crisis, would disappear. Future research, therefore, should be directed toward examination of the changing social values and roles for middle-aged women. It is believed that within this socialization system lies many of the answers to the "mystery of menopause."

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APPENDIX A

SUMMARY OF THE CONSTRUCTION, VALIDITY, AND RELIABILITY OF THE MENOPAUSAL SYMPTOM CHECKLIST, BEM SEX ROLE INVENTORY, HOUSEHOLD BEHAVIORS SCALE, BEM SEX ROLE INVENTORY-BEHAVIOR, SELF-ESTEEM SCALE, AND THE ASSERTION INVENTORY

Menopausal Symptom Checklist (MC). This scale was developed by Neugarten and Kroines (1965) after careful survey of the medical literature and extensive preliminary interviewing. Reliability was achieved by test-retest of a subsample of 40 women from their 1965 study. Reliability was t (38) = 0.79, $p < .005$.

Bem Sex Role Inventory (BSRI). The BSRI is a scale used for measuring sex role adherence, and is based upon the degree to which a person defines him/herself using stereotypic "masculine" and "feminine" adjectives. The social desirability score indicates the degree to which a person presents him/herself in a "positive light" when responding to neutral items. As the scale is constructed, the masculine and feminine subscales are independent of each other; thus a person can score high on masculine items and/or feminine items.

This 60-item scale was developed by Bem (1974) from an original pool of 400 items. One-half of these items were judged by the author and colleagues to be positive in value and either masculine or feminine in tone. The second half were judged to be "neutral" in tone. Of these "neutral" characteristics, half were positive, half were negative. Forty Stanford undergraduates were asked to rate each item on a seven-point scale, ranging from 1 ("Not at all desirable") to 7 ("Extremely desirable"), either "for a man" or "for a woman." A characteristic qualified as masculine or feminine if it was independently judged by both males and females to be more desirable for the respective sex (based on two-tailed t-tests). Twenty masculine and twenty feminine items comprised the final list. Neutral items, comprising the Social Desirability Scale, were chosen if: (1) it was independently judged to be no more desirable "for a woman" than "for a man," and (2) if both

male and female judges did not differ significantly in overall desirability judgments. Ten positive and ten negative items were chosen. Test-retest reliability was significant for each scale: Femininity, r (26) = 0.90, $p < .005$; Masculinity, r (26) = 0.90, $p < .005$; Androgyny, r (26) = 0.93, $p < .005$; Social Desirability, r (26) = 0.89, $p < .005$. Validity was measured by correlating scores from the BSRI with the Guilford-Zimmerman and the California Psychological Inventory. These correlations are reported in Bem (1974). The author concludes that the BSRI measures an aspect of sex roles not tapped by either of the two other scales.

Originally Bem did not discriminate between those individuals scoring high or low concurrently on the masculine and feminine subscales. In 1974, Bem stated, "An androgynous sex role thus represents the equal endorsement of both masculine and feminine attributes" (pp. 28-29). Thus a person who had both high masculine and high feminine scores would be as androgynous as a person whose scores were low masculine and low feminine. If the quantity of endorsement were similar for masculine and feminine items, the criterion for androgyny was met. Spence and Helmriech criticized the lack of distinction between androgynous people who were high (above the mean) masculine and feminine, and those who were low masculine and feminine. Spence and Helmreich labeled those individuals with low scores as undifferentiated and those with high scores as androgynous (the most concise presentation of the controversy is presented in a recent book by Spence and Helmreich, 1978). Bem (1975) redefined her definition and classification system.

For the purposes of this study, two definitions of androgyny were employed. The first definition, and that used in hypothesis seven, is

that androgyny is an approximate t-ratio of the difference between masculine and feminine items. This score is based upon a continuum in which absolute androgyny receives a score of 0.00. Increasing positive scores indicate increased feminine sex typing, while negative scores indicate masculine sex typing. For a later analysis, a different definition was employed, one differentiating between androgynous and undifferentiated sex typing. This categorization was obtained as follows: first, the mean masculine and mean feminine scores were calculated for all subjects. Next, the difference between these scores was calculated, each then multiplied by 2.322, approximating a t-ratio (Bem, 1975). If this t-ratio fell within ±1, and the subject's masculine and feminine scores were above the group mean, the subject was classified as androgynous. If this t-ratio fell within ±1, and the subject's masculine and feminine scores were below the group mean, the subject was classified as undifferentiated. If the score was between +1 and +2.025, the subject was classified as near feminine. If the score was greater than or equal to +2.025, the subject was classified as feminine. The classification of scores into the masculine and near masculine categories followed the above procedure with the exception that the range of scores was negative.

Household Behaviors Scale (HBS). This scale was constructed by Green and Desdin (Note 1), for use in a thesis comparing homosexual and heterosexual populations (Desdin, 1977). Ten homosexual males, ten heterosexual males, and ten heterosexual females were asked to rate 20 statements using a five-point Likert-like scale, from 1 (masculine) to 5 (feminine). Raters were asked to indicate whether the behavior was considered by society to be masculine or feminine. An item was chosen

when all three groups agreed to a behavior being masculine or feminine in orientation. Ten items fit this criteria, five masculine and five feminine.

Bem Sex Role Inventory-Behavior (BSRI-B). This scale was constructed by Green and Desdin (Note 2) for use in a dissertation examining roles in male homosexual couples (Note 3). Ten homosexual males, ten homosexual females, ten heterosexual males, and ten heterosexual females were asked to rate 20 statements descriptive of behaviors that were indicative of selected adjectives on the BSRI. Raters were asked to indicate on a five-point Likert-like scale from 1 (masculine) to 5 (feminine) whether the behavior was considered by society to be masculine or feminine. An item was chosen when all four groups agreed to a behavior being masculine or feminine in orientation. Twelve items fit this criteria, six masculine and six feminine. Data have been gathered on reliability for this scale. These data are currently being analyzed.

Self-Esteem Scale (SEC). Developed by Rosenberg (1965), this scale is recommended by Wylie (1974) as one of the most outstanding measures of self-esteem. Normed on 5,024 high school juniors and seniors, the reproducibility of this scale was 92 percent. Validity was measured in two ways: (1) the SEC was found to correlate significantly with a number of psychosomatic symptoms and with self-reported depression for individuals in the original sample used for assessment of reliability, and (2) the scores of 50 adult employees of the National Institute of Mental Health were significantly correlated with the Leary Scales of depression (Leary, 1957).

Assertion Inventory (AI). Developed by Gambrill and Richey (1975), this scale is a 40-item self-report questionnaire. Reliability was

obtained from 16 men and 33 women, $r\ (47) = 0.81$, $p < .005$. Validity was achieved by comparing a clinical sample (those undergoing assertiveness training) with a sample of undergraduate students. The mean difference between these two groups was significant. In addition, the mean score for the clinical group decreased significantly after assertiveness training.

APPENDIX B

SEMISTRUCTURED INTERVIEW WITH DEPENDENT MEASURES

1. SS No. _____ Menopausal or post-menopausal ERT or nonERT

2. Age ____

3. Dominant religion of family during childhood (REL):

__ No religious belief, atheist or agnostic

__ Unitarian, Quaker

__ Protestant (Fundamentalist, Pentecostal, Baptist, Sectarian, etc.)

__ Protestant, all others (Methodist, Presbyterian, Episcopalian)

__ Roman Catholic

__ Jewish

__ Eastern religions

4. Did the religion that you grew up with teach you that everything the Bible says is to be taken literally? __ Yes __ No (FUN)

5. Highest grade completed (EDU):

__ Postgraduate, professional degree

__ College graduate

__ Some college, business school

__ High school graduate

__ Some high school

__ Grades 7 and 8

__ Up to and including 6th grade

6. Describe your present employment situation:

Occupational prestige (OCC)

Number of years at current job (YEC)

Occupation considered a career? (CAR)

Sex appropriateness of occupation (APP)

(1 = inappropriate, 2 = neutral, 3 = appropriate)

7. Describe employment at any time of your life:

Number of years worked--total (YET)

Did subject terminate job for wife role? (TWI)

Did subject terminate job for mother role? (TMO)

8. Are you presently happy in your job? __ Yes __ No (HAP)

9. Number of children (KID)

   Number presently living in your home (KIH)

10. Describe how you spend your free time (volunteer work, social activities, etc.)

11. Have you ever received any information concerning menopausal symptoms? (INF)

__ No information	Source of information--Modeling (NIM)
__ Not much	Source of information--Doctor (MDI)
__ Some	Source of information--Friends (FRI)
__ A lot	Information self-sought (ISS)
__ Complete	Information not self-sought (INS)

12. If so, from whom? _____

13. When you were sick as a child, describe as best you can the reactions of your parents:

(PAR)

1	2	3	4	5
Aloof-Distant		Neutral		Over-protective

14. Describe as best you can the reactions of your husband when you are sick:

(EHU)

1	2	3	4	5
Aloof-Distant		Neutral		Over-protective

1	2	3	4	5
No one to fill role of wife/mother		Portion of wife/mother role filled		Wife/mother role realistically filled

15. Describe as best you can the reactions of your children when you were/are sick or not feeling well:

1	2	3	4	5
Aloof-Distant		Neutral		Over-protective

1	2	3	4	5
No one to fill role of mother		Portion of mother role filled		Mother role realistically filled

16. Have you ever been hospitalized for "female problems" involving gynecology, obstetrics, or urology? Please describe:

Total number of hospitalizations for gynecological, urological, or obstetrical reasons (HOP)

Total number of dilation and curettage (D&Cs) (TDC)

Hospitalizations for childbirth (CHB)

Number of miscarriages (MIS)

APPENDIX C

MENOPAUSAL CHECKLIST

Symptom Checklist

Here is a list of complaints and symptoms of women of your age. Please rate each of the following items as you have recently been experiencing them. Place before each item your rating, based on the following scale:

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

(PSS) 1. Pounding of the heart
(PSS) 2. Dizzy spells
(PYS) 3. Irritable and nervous
(SOS) 4. Diarrhea
(SOS) 5. Constipation
(PYS) 6. Cannot concentrate
(PYS) 7. Crying spells
(PSS) 8. Tired feelings
(PYS) 9. Feeling blue or depressed
(SOS) 10. Aches in the back part of the skull and neck
(PSS) 11. Blind spots before my eyes
(PSS) 12. Headaches
(SOS) 13. Breast pains
(PYS) 14. Excitable
(SOS) 15. Cold sweats
(PYS) 16. Forgetfulness
(SOS) 17. Numbness and tingling
(PYS) 18. Trouble sleeping
(SOS) 19. Cold hands and feet
(SOS) 20. My skin crawls
(SOS) 21. Rheumatic pains
(SOS) 22. Weight gain
(PYS) 23. Feeling of fright or panic
(SOS) 24. Hot flushes
(PYS) 25. Worry about losing my mind
(PYS) 26. Worry about my body
(SOS) 27. "Flooding" or unusually heavy menstrual flow
(PYS) 28. Feeling of suffocation

APPENDIX D

VERBAL ANXIETY SCORING SYSTEM

1. Death anxiety--references to death, dying, threat of death, or anxiety about death experienced by or occurring to:

   a. self (3)*
   b. animate others (2)
   c. inanimate objects destroyed (1)
   d. denial of death anxiety (1)

2. Mutilation anxiety--references to injury, tissue, or physical damage, or anxiety about injury or threat of such experienced by or occurring to:

   a. self
   b. animate others
   c. inanimate objects
   d. denial

3. Separation anxiety--references to desertion, abandonment, ostracism, loss of support, falling, loss of love or love object, or threat of such by or occurring to:

   a. self
   b. animate others
   c. inanimate objects
   d. denial

4. Guilt anxiety--references to adverse criticism, abuse, condemnation, moral disapproval, guilt, or threat of such experienced by:

   a. self
   b. animate others
   d. denial

5. Shame anxiety--references to ridicule, inadequacy, shame, embarrassment, humiliation, overexposure of deficiencies or private details, or threat or such experienced by:

   a. self
   b. animate others
   c. denial

6. Diffuse or nonspecific anxiety--references by word or phrase to anxiety and/or fear without distinguishing type or source of anxiety:

   a. self
   b. animate others
   c. denial

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*Numbers in parentheses are the scores or weights.

APPENDIX E

VERBAL HOSTILITY SCORING SYSTEM

Weights	Hostility Directed Outwards Scale
3	Others (human) killing, fighting, injuring other individuals or threatening to do so.
3	Others (human) robbing, abandoning, causing suffering or anguish to other individuals, or threatening to do so.
3	Others adversely criticizing, depreciating, blaming, expressing anger, dislike of other human beings.
2	Others (human) killing, injuring, or destroying domestic animals, pets, or threatening to do so.
2	Others (human) abandoning, robbing, domestic animals, pets, or threatening to do so.
2	Others (human) criticizing or depreciating other individuals in a vague or mild manner.
2	Others (human) depriving or disappointing other human beings.
2	Others (human or domestic animals) dying or killed violently in death-dealing situation or threatened with such.
2	Bodies (human or domestic animals) mutilated, depreciated, defiled.
1	Wild life, flora, inanimate objects, injured, broken, robbed, destroyed, or threatened with such (with or without mention of agent).
1	Others (human) adversely criticizing, depreciating, expressing anger or dislike or subhuman, inanimate objects, places, situations.
1	Others angry, cursing without reference to cause or direction of anger. Also instruments of destruction not used threateningly.
1	Others (human, domestic animals) injured, robbed, dead, abandoned, or threatened with such from any source including subhumans, and inanimate objects, situations (storms, floods, etc.).
1	Subhumans killing, fighting, injuring, robbing, destroying each other, or threatening to do so.
1	Denial of anger, dislike, hatred, cruelty, and intent to harm.

APPENDIX F

EMOTIONAL TONE SCORING SYSTEM

Key for All Scales

-2 Very sad

-1 Sad

0 Neutral

+1 Happy

+2 Very happy

General Rating Scale for Emotional Tone of Stories

-2 Complete failure, submission to fate, death, murder, suicide, illicit sex with violence, revenge, aggressive hostility, severe guilt, complete hopelessness.

-1 Conflict with attempt at adjustment, rebellion, fear, worry, departure, regret, illness, physical exhaustion, resignation toward death, loneliness.

0 Description, lack of affect, balance of positive and negative feelings, routine activities, impersonal reflection.

+1 Aspiration, desire for success and doubt about outcome, compensation for limited endowment. Description with cheerful feeling, reunion with friends, contentment with world, feeling of security.

+2 Justifiably high aspiration. Complete satisfaction and happiness. Reunion with loved ones.

Individual Cards

Card 4

-2 Desire for revenge, murder, aggressive hostility.
-1 Disillusionment, occupational failure, conflict over extra-marital relations, jealousy pressure from mate.

Card 6BM

-2 Death, bad news, severe guilt, conflict over social acceptance of sexual role.
-1 Parental pressure, filial obligation, conflict over desires and duties, departure from parental home.

Card 13MF

-2 Illicit sex with violence, rape, death, murder for infidelity.
-1 Disillusionment with sexual experience, regret for illicit sex. Illness of wife.

Card 12M

-2 Death, suicide, malpractice with aggression, rape, curse.
-1 Reconciliation to death; illness, parental pressure.
0 Hypnosis with no harm involved. Being awakened from sleep.
+1 Reunion.

Card 18GF

-2 Murder, death, psychosis.
-1 Discipline, coercion, comfort in face of sorrow, illness.

APPENDIX G

GENERAL OUTCOME SCORING SYSTEM

General Rating Scale for Outcomes

-2 Complete failure, submission to fate, death, murder, suicide, extreme punishment, extreme remorse.

-1 Some frustration: incomplete success in attaining goal, goal attained at expense of happiness, disappointment to friends and family, acceptance of unsatisfactory situation or submission to authority.

0 Continuation of ordinary situation, balance of happy and unhappy situations.

+1 Moderate success, reunion with friends, recovery from temporary disability or depression, happiness in success of others.

+2 Great success, discovery, and/or happiness. Extreme contentment, marital bliss, unusual good fortune, reunion with loved ones.

APPENDIX H

BEM SEX ROLE INVENTORY

Below is a list of 60 adjectives people often use to describe their behavior. Before each adjective, please indicate, using the scale below, how often these adjectives describe your behavior.

1	2	3	4	5	6	7
Never or almost never true	Usually not true	Sometimes but infrequently true	Occasionally true	Often true	Usually true	Always or almost always true

M 1. Self-reliant
F 2. Yielding
N 3. Helpful*
M 4. Defends own beliefs
F 5. Cheerful
N 6. Moody
M 7. Independent
F 8. Shy
N 9. Conscientious*
M 10. Athletic
F 11. Affectionate
N 12. Theatrical
M 13. Assertive
F 14. Flatterable
N 15. Happy*
M 16. Strong personality
F 17. Loyal
N 18. Unpredictable
M 19. Forceful
F 20. Feminine
N 21. Reliable*
M 22. Analytical
F 23. Sympathetic
N 24. Jealous
M 25. Has leadership abilities
F 26. Sensitive to needs of others
N 27. Truthful*
M 28. Willing to take risks
F 29. Understanding
N 30. Secretive
M 31. Makes decisions easily
F 32. Compassionate
N 33. Sincere*
M 34. Self-sufficient
F 35. Eager to sooth hurt feelings
N 36. Conceited
M 37. Dominant
F 38. Soft spoken
N 39. Likable*
M 40. Masculine
F 41. Warm
N 42. Solemn
M 43. Willing to take a stand
F 44. Tender
N 45. Friendly*
M 46. Aggressive
F 47. Gullible
N 48. Inefficient
M 49. Acts as a leader
F 50. Childlike
N 51. Adaptable*
M 52. Individualistic
F 53. Does not use harsh language
N 54. Unsystematic
M 55. Competitive
F 56. Loves children
N 57. Tactful*
M 58. Ambitious
F 59. Gentle
N 60. Conventional

M = Masculine Item

F = Feminine Item

N = Neutral Item

*Indicates neutral item positive in tone.

APPENDIX I

SELF-ESTEEM SCALE

Describe Yourself

Circle the number that best describes your agreement with the statement.

1. I feel that I'm a person of worth, at least on an equal plane with
1. I feel that I'm a person of worth, at least on an equal plane with others.

1 = Strongly agree
2 = Agree
3 = Disagree
4 = Strongly disagree

2. I feel that I have a number of good qualities.

1 = Strongly agree
2 = Agree
3 = Disagree
4 = Strongly disagree

3. All in all, I am inclined to feel that I am a failure.*

1 = Strongly agree
2 = Agree
3 = Disagree
4 = Strongly disagree

4. I am able to do things as well as most other people.

1 = Strongly agree
2 = Agree
3 = Disagree
4 = Strongly disagree

5. I feel I do not have much to be proud of.*

1 = Strongly agree
2 = Agree
3 = Disagree
4 = Strongly disagree

6. I take a positive attitude toward myself.

1 = Strongly agree
2 = Agree
3 = Disagree
4 = Strongly disagree

7. On the whole, I am satisfied with myself.

1 = Strongly agree
2 = Agree
3 = Disagree
4 = Strongly disagree

8. I wish I could have more respect for myself.*

   1 = Strongly agree
   2 = Agree
   3 = Disagree
   4 = Strongly disagree

9. I certainly feel useless at times.*

   1 = Strongly agree
   2 = Agree
   3 = Disagree
   4 = Strongly disagree

10. At times I think I am no good at all.*

   1 = Strongly agree
   2 = Agree
   3 = Disagree
   4 = Strongly disagree

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*Indicates reverse scoring.

APPENDIX J

HOUSEHOLD BEHAVIORS SCALE

Please indicate the degree to which you participate in the following behaviors by placing the appropriate number by the corresponding statements.

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

M 1. Taking out the garbage

F 2. Washing the dishes

M 3. Paying the bills

M 4. Driving the car

F 5. Cleaning the house

M 6. Fixing things around the house

M 7. Taking care of the car

F 8. Doing the laundry

F 9. Doing the cooking

F 10. Buying the groceries

F = Feminine Items

M = Masculine Items

APPENDIX K

BEM SEX ROLE INVENTORY-BEHAVIOR

Please indicate the degree to which you participate in the following behaviors by placing the appropriate number by the corresponding statements.

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

F 1. If you have hurt someone, wanting to make her feel good as quickly as possible

F 2. Hugging someone

F 3. Hardly ever raising your voice

M 4. Fixing things without anyone's help

M 5. Initiating sex

M 6. Being publicly opinionated

M 7. Knowing what to do in an emergency

F 8. Saying "I'm sorry" after you have hurt someone

M 9. Striving for a high goal

M 10. Saying "You are full of it."

F 11. Being in a heartwarming situation.

F 12. Stopping to play with an infant or child.

F = Feminine Item

M = Masculine Item

APPENDIX L

ASSERTION INVENTORY

Many people experience difficulty in handling interpersonal situations requiring them to assert themselves in some way, for example, turning down a request, asking a favor, giving someone a compliment, expressing disapproval or approval, etc. Please indicate before each item the probability or likelihood of your displaying the behavior if actually presented with the situation. For example, if you rarely apologize when you are at fault, you would mark a "4" before that item. Use the following scale to indicate response probability.

1 = Always do it
2 = Usually do it
3 = Do it about half the time
4 = Rarely do it
5 = Never do it

__ 1. Turn down a request to borrow your car

__ 2. Compliment a friend

__ 3. Ask a favor of someone

__ 4. Resist sales pressure

__ 5. Apologize when you are at fault

__ 6. Turn down a request for a meeting or date

__ 7. Admit fear and request consideration

__ 8. Tell a person you are intimately involved with he/she says or does something that bothers you

__ 9. Ask for a raise

__ 10. Admit ignorance in some area

__ 11. Turn down a request to borrow money

__ 12. Ask personal questions

__ 13. Turn off a talkative friend

__ 14. Ask for constructive criticism

__ 15. Initiate a conversation with a stranger

__ 16. Compliment a person you are romantically involved with or interested in

__ 17. Request a meeting or date with a person

__ 18. Your initial request for a meeting is turned down and you ask the person again at a later time

__ 19. Admit confusion about a point under discussion and ask for clarification

__ 20. Apply for a job

__ 21. Ask whether you have offended someone

__ 22. Tell someone that you like him/her.

__ 23. Request expected service when such is not forthcoming, e.g., in a restaurant

__ 24. Discuss openly with the person his/her criticism of your behavior

__ 25. Return defective items, e.g., store or restaurant

__ 26. Express an opinion that differs from that of the person you are talking to

__ 27. Resist sexual overtures when you are not interested

__ 28. Tell the person when you feel he/she has done something that is unfair to you

__ 29. Accept a date

__ 30. Tell someone good news about yourself

__ 31. Resist pressure to drink

__ 32. Resist a significant person's unfair demand

__ 33. Quit a job

__ 34. Resist pressure to "turn on"

__ 35. Discuss openly with the person his/her criticism of your work

__ 36. Request the return of borrowed items

__ 37. Receive compliments

__ 38. Continue to converse with someone who disagrees with you

__ 39. Tell a friend or someone with whom you work when he/she says or does something that bothers you

__ 40. Ask a person who is annoying you in a public situation to stop

APPENDIX M

ALPHABETICAL LIST OF ALL VARIABLES AND THEIR ABBREVIATIONS

Abbreviation	Variable
ABS	Androgyny score of BSRI-B
AGE	Age in years
AHB	Androgyny score of HBS
AND	Androgyny score of BSRI
ANX	Anxiety score of TAT
APP	Sex-role appropriateness of job
AST	Assertion inventory
BSRI	Bem Sex Role Inventory
BSRI-B	Bem Sex Role Inventory-Behavior
DIE	Death subscore of anxiety scale on TAT
DIF	Diffuse or nonspecific subscore of anxiety scale on TAT
ECH	Emotional reaction of children when sick
EDU	Amount of formal education
EHU	Emotional reaction of husband when sick
ERT	Estrogen replacement therapy
FBS	Feminine score on BSRI-B
FEM	Feminine score on BSRI
FHB	Feminine score on HBS
FRI	Information about menopause obtained from friends
FUN	Fundamental religious beliefs
GLT	Guilt subscore from anxiety scale on TAT
HAP	Happy in current job
HOP	Number of hospitalizations
HOS	Hostility score of TAT
INF	Amount of information about menopause
INS	Information "not self-sought"
ISS	Information "self-sought"
KID	Number of children
KIH	Number of children currently at home
MAS	Masculine score on BSRI
MBS	Masculine score on BSRI-B
MC	Menopausal symptom checklist
MDI	Information obtained from physician

Abbreviation	Variable
MHB	Masculine score on HBS
MIS	Number of miscarriages
MOI	Information obtained from relatives
MUT	Mutilation subscore of anxiety scale on TAT
MST	Menopause status
NIM	Source of information from modeling
OCC	Occupational prestige score
OUT	Outcome score of TAT
PAR	Parents' reaction to subject when ill
PSS	Psychosomatic symptoms on MC
PYS	Psychological symptoms on MC
RCH	Amount of "role take-over" by children when sick
REL	Religious upbringing
RHU	Amount of "role take-over" by husband when sick
SEC	Self-esteem scale
SEP	Separation subscale of anxiety scale of TAT
SHM	Shame subscale of anxiety scale of TAT
SOD	Social desirability scale of BSRI
SOS	Somatic symptoms on Mc
TAT	Thematic Apperception Test
TCF	Total number of phrases spoken on TAT
TDC	Number of dilations and curettages
TMO	Terminated job for mother role
TON	Emotional tone scale of TAT
TWI	Termination of job for wife role
YEC	Years in current job
YET	Total number of years employed outside the home

VITA

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