EMOTIONAL ASPECTS OF THE PREGNANCY EXPERIENCE: ANXIETY, LIFE CHANGES, AND FEMININE IDENTIFICATION

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A DISSERTATION PRESENTED TO THE GRADUATE COUNCIL OF
THE UNIVERSITY OF FLORIDA
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF DOCTOR OF PHILOSOPHY

UNIVERSITY OF FLORIDA

1978

To women-------

mothers and non-mothers,

struggling with the issues of

maturity, nurturance, and growth.

ACKNOWLEDGEMENTS

I would most especially like to thank my major professors for their long-standing support. I am grateful to Jacquelin Goldman for her confidence in my ability to make decisions for myself and her calming words during my crises. And I thank Franz Epting for his gentle guidance and encouragement and his continued suggestions to "cut it down."

I am also grateful to the rest of my committee: to Wilson Guertin, for his genuine concern and statistical expertise; to Mary McCaulley, for her abiding interest in pregnant women, and her office space; and to Marvin Shaw, for always being there when I needed him to be.

In addition to these, there are many persons without whom this project would never has been completed: Cora Braynon, Joan Buczck, B. J. Price, and Virginia Dick of the Broward County Health Department, who allowed me access to their maternity patients; Pam Alexander, Ellen Fischer, and Sandra Hunter, who interviewed participants, and Dee Dee Read who telephoned them; Irene and Albert Krieger, who provided emotional support and technical assistance; and Linda Taylor, whose friendship and typing assistance were invaluable.

Finally, I am most grateful to three people without whom this work would have been impossible. I thank my parents, who taught me the ambition and perseverance to complete this

task. And above all, I thank my husband Seth, for understanding and tolerating, for prodding and urging, and for being there through the ordeal.

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August 1978

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The emotional and somatic experiences of 64 pregnant women in the first trimester of pregnancy were examined using objective measures with demonstrated reliability and validity. Forty-seven participants were patients of Broward County Health Department maternity clinics; 17 others were the patients of private physicians. All subjects volunteered their participation after they were approached by the author. The relationship between anxiety and somatic symptoms was explored using A-Trait as the measure of felt anxiety and A-State as the indicator of anxiety during the pregnancy. The relationship between stressful life changes and somatic symptoms was also tested. In addition, sexual identification, sex role preference, age, race, parity, socioeconomic status, knowledge of pregnancy, and socially desirable response set were measured.

The hypothesized relationship between A-Trait and symptoms before pregnancy was not substantiated using raw score data, but was supported when scores were corrected by the control variables. Similarly, there was a positive relationship between the number of somatic symptoms experienced during pregnancy and A-State, for both raw and corrected scores. On the other hand, there was no relationship between life change units and number of somatic symptoms reported. In addition, there was no relationship between androgyny score on the Bem Sex Role Inventory and endorsement of non-traditional feminine roles on the Attitudes toward Women Scale.

Factor analyses of these data produced six meaningful factors: Factor 1. Anxiety had heavy loadings for A-Trait and A-State; 2. Sex Role Ambivalence consisted largely of standard deviation scores on the Bem femininity measure and the Bem masculinity measure; 3. Sex-typing was defined by the Bem femininity and masculinity scores; 4. Somatizing and Ambivalence had heavy loadings for Symptoms Before Pregnancy, Symptoms During Pregnancy, and the standard deviation scores for the Attitudes toward Women Scale; 5. Androgyny consisted of a positive loading for the Bem androgyny score and a negative loading for the Bem masculinity score; 6. Life Changes and Traditionalism consisted of loadings from the life changes score, a traditional role score from the Attitudes toward Women Scale, and standard deviation scores from that scale.

These factors strongly suggest the need to explore

various aspects of feminine identification in relationship to the more traditional variables measured during pregnancy.

CHAPTER I
INTRODUCTION

The role of woman in most societies is centered around her function as a mother. In all primitive cultures and in most modern ones, pregnancy and childbirth have been the focus of folklore and taboos (Chertok, 1972; Mead, 1968). Modern scientists have attempted to break through the mystery and customary secrecy surrounding the pregnancy experience[1] in an attempt to understand the physiological and psychological aspects of this occurrence and how the biology and psychology are interrelated.

Personality theorists such as Helene Deutsch (1945) and Therese Benedek (1960) have been concerned with pregnancy as a developmental crisis, an opportunity for the woman to accomplish certain developmental tasks (Bibring, 1959; Dyer, 1963; Leifer, 1977; Levy & McGee, 1975; Loesch & Greenberg, 1962). Deutsch considers childbirth to be the expression of the complete sexual maturity of the adult female. Benedek believes the pregnancy experience is the culmination of biological and psychological drives which render the pregnant woman a mature and fulfilled adult.

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[1]In this paper, the "pregnancy experience" is used to mean the events surrounding conception, pregnancy, labor and delivery, and the condition of the newborn.

While many women may be unaware of the purported developmental importance of pregnancy, most women have been thoroughly indoctrinated with the social value of childbearing by the time they reach puberty. In spite of strong socialization, many women embark upon the experience of pregnancy with a great deal of ambivalence and anxiety (Biskind, 1962; Flapan, 1969; Newton, 1963). The common occurrence of conflict over the pregnancy has been one of the prime reasons for research into the psychological aspects of the reproductive experience. This ambivalence has been used to explain many of the symptoms for which no physiological cause is evident. Indeed, the emotional as well as the psychosomatic aspects of pregnancy and childbirth and their effects on both the mother and the newborn have become the focus of much research and a great deal of speculation (Copans, 1974; Dunbar, 1944; Escalona, 1968; Jones, 1974; McNeil, Wiegerink, & Dozier, 1970; Mura, 1974; Prechtl, 1967; Werner, Simonian, Bierman, & French, 1967). As in any widely investigated area, the hypotheses and results are conflicting and confusing. It is the purpose of this study to explore the relationships among some of the variables of concern and to attempt a parsimonious theoretical explanation of those relationships.

Methodological Considerations

Two general strategies in the study of pregnancy are of particular concern: (1) prospective vs retrospective design and (2) objective vs. subjective (interview and projective) measures.

Most of the studies performed prior to 1960 were retrospective in nature. In this design, the new mother is contacted during the period following delivery and is questioned about her experience during the pregnancy. Generally, a group of "abnormal" women is compared with a group who experienced "normal" labors and deliveries. The obvious fault of this retrospective design is the same as in other areas of research where the preceding events are not learned until after the significant experience has occurred; i.e., the data which are recalled are very likely to have been colored by the experience. Thus, a woman who has recently delivered and perhaps undergone a complicated delivery, when asked about somatic symptoms during her pregnancy, may endorse suggested sources of difficulty to help her understand the discomfort she has just experienced, and thus report inaccurately (Brown, 1964).

Prospective designs have become more abundant in the past 15 years. Some of these studies have gathered a very limited scope of data, thereby greatly limiting their explanatory value (e.g., Chertok, Mondzain, & Bonnaud, 1963; Klatskin & Eron, 1970). Others have included several hundreds of women without systematic selection thereby making interpretations of results difficult (Nilsson, Kaij, & Jacobson, 1967). Others have successfully isolated issues which seem to be of significance in the study of the pregnancy experience (Davids, Holden, & Gray, 1963; Grimm & Venet, 1966; McDonald & Christakos, 1963). It is these often isolated factors upon which this study will focus.

The method by which data are gathered and interpreted is crucial in discovering replicable variables and predictions. The earliest research designs employed psychiatric interviews to gather most of the data analyzed. As researchers became more sophisticated, they attempted to use projective techniques to measure anxiety and sex role identification. The most recent studies have generally employed scaled questionnaires and objective tests with empirically demonstrated reliability and validity. In order to avoid overgeneralization and poor definition, some care must be taken in interpreting studies which relied upon projective measures. Additionally, caution must be exercised in comparing studies which employed objective test scores with those which used projective tests, but called the variables by the same names, e.g., anxiety. Confusion has often occurred because of inconsistent use of terms, and some of the contradictions in the literature to be reported may well be the result of this factor.

Substantive Issues in the Study of Pregnancy and Childbirth

If one were to review the pregnancy literature with the purpose of isolating one factor which seems to be consistently correlated with difficulties in pregnancy, anxiety would undoubtedly emerge as the most commonly cited variable. Since this term can have so many diverse meanings, it seems more productive to examine each of the areas which has been found to contribute to anxiety. The variables which will be considered are fear of pregnancy, labor and delivery; fear of harming the baby; rejection of the pregnancy; and generalized anxiety and neuroticism. Other important variables in the

pregnancy experience are feminine identification, conflict about the feminine role, stressful life events, and tendency to report somatic symptoms.

Fear of pregnancy, labor and delivery. Many authors have developed questionnaires aimed at measuring attitudes toward pregnancy (Grimm & Venet, 1966; Schaefer & Manheimer, 1960). Fear of the pregnancy experience has habitually been included in these questionnaires because of its apparent importance to the outcome of pregnancy. Flanders Dunbar has noted the relationship between fear and spontaneous abortion (1962). More recently, Erickson (1965) used a prospective method to examine the effects of fears of the pregnancy experience during the prenatal period. Using Schaefer and Manheimer's questionnaire, she found that fear of harm to oneself during childbirth was positively correlated with complications and with length of labor and inversely correlated with Apgar Index scores rating the condition of the infant at birth (Apgar, 1953; 1966). The mechanism by which fear of the birth experience has its effects on outcome remains unknown at present.

Fear of harming the baby. Among primigravidas fear of harming the child by activities during the pregnancy and by carelessness or overt acts after birth is common. Ferreira (1960) found that the infants of women who expressed strong fear of hurting the baby on a questionnaire completed during the pregnancy were rated by newborn nursery nurses as deviant from the norm; i.e., the child cried more or less than most newborns, was more or less irritable, etc. In the same

study cited above, Erickson measured fear of harming the baby as well as concern for oneself. The two were highly related in all primigravidas and in multigravidas who had complications. These data suggest that concerns in some way interact with the number of prior pregnancies a woman has experienced. Many women experience fears during their first pregnancy; these fears are only moderately correlated with complications. However, multigravidas who are still experiencing fears for the child and for themselves are much more likely to have complicated deliveries and deviant infants. The possibility that these women had experienced difficulties in previous pregnancies and were realistically concerned was not discussed.

It must be clarified that an increase in anxiety over the non-pregnant state is generally considered normal during pregnancy. Most pregnant women, especially primigravida, experience some fear of the unknown and anxiety about bodily changes. These fears are related to both the fetus and oneself (Leifer, 1977). It is, therefore, extreme levels of fear which appear to be related to problems in pregnancy.

Rejection of the pregnancy. Several indicators of the status of pregnancy in the mind of the mother have been used as measures of rejection of the pregnancy. A woman who verbally expresses disgust at the fact of her pregnancy has been considered rejecting (Robertson, 1946). Robertson found that such disgust was closely associated with severe nausea and vomiting in pregnancy. Chertok et al. (1963) used self-reported ambivalence toward the birth as their

indicator of rejection; ambivalence was also highly related to nausea and vomiting. Alec Coppen (1958), using interviews and psychologists' ratings, found that women who suffered from pre-eclamptic toxemia[2] were rejecting of the pregnancy. Pilowsky (1972), using the H.I.P. Pregnancy Questionnaire found that women who rejected their pregnancies had more severe complications, children with lower Apgar ratings, and more somatic complaints during pregnancy. Finally, Engstrom, Geijerstam, Holmberg, and Uhrus (1964) found that women who had negative attitudes toward the pregnancy, based on interviews early in pregnancy and shortly after delivery, experienced more inertia during labor and bore infants suffering asphyxia more often than a non-rejecting group of women. Grimm and Venet (1966), however, also using their H.I.P Pregnancy Questionnaire, have not found fear of pregnancy, labor, and delivery, fear of harming the baby, or rejection of the pregnancy to be correlated with complications of the reproductive course. They consider these to be variables which relate to the quality of the woman's experience, but which are not related to outcome of the pregnancy.

Generalized anxiety and neuroticism. Many authors have been less specific than those discussed above in their search for relationships among pregnancy variables. It is this fact which causes "anxiety" to be the most commonly named variable in studies of prenatal experience. Both

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[2]Pre-eclamptic toxemia consists of two physiochemical disturbances which have severe effects on both gravida and fetus: (1) salt and water retention; and (2) arteriolar spasm (Salerno, 1962).

retrospective and prospective studies have found anxiety during pregnancy to be related to a variety of outcomes.

Mann and Grimm (1962) found that women who tended to be habitual spontaneous aborters appeared highly anxious on prejective test data gathered during pregnancy. The only successful treatment they were able to discover for this group was a course of psychotherapy during the pregnancy. Eighty percent of those women so treated were delivered of normal full-term infants. Mann and Grimm assumed this to be the result of reduction of anxiety. Grimm (1961) found that 27% of the women in her extreme tension group had an infant who died or was deformed, while only 3% of the rest of the women had such a child. Even those fetuses which do survive are adversely affected by the mother's anxiety. Lester Sontag (1962) described what he called hyperactivity and increased irritability in the infants of such mothers. And even after delivery, the emotional adjustment and mother-child interaction of those women highly anxious during pregnancy showed evidence of disturbance (Davids et al., 1963).

Besides the dramatic effect manifest anxiety during pregnancy appears to have on the developing fetus, increased complications of all sorts are found to be correlated with this anxiety. Somatic complaints during pregnancy (Zuckerman, Nurnberger, Gardiner, Vandiveer, Barrett, & den Breeijen, 1963); excessive weight gain and pre-eclampsia (McDonald, 1965); length of labor (Davids & DeVault, 1962; Davids, DeVault, & Talmadge, 1961; McDonald, Gynther, & Christakos,

1963); obstetric complications during delivery (McDonald, 1965; McDonald & Christakos, 1963; Zuckerman et al., 1963); and low infant birth weight (McDonald et al., 1963) have all been related to anxiety during the prenatal period.

Neuroticism, as measured by Minnesota Multiphasic Personality Inventory, Maudsley Personality Inventory, Eysenck Personality Inventory, and psychiatrists' ratings, has proven to be related to several complications of the pregnancy experience. Nausea and vomiting of early pregnancy (Harvey & Sherfey, 1954; Netter-Munkelt, Mau, & Konig, 1972); difficulties in labor (Scott & Thomson, 1956); as well as more pregnancies, miscarriages, stillbirths, neonatal deaths, and psychiatric illness among surviving offspring (Mandlebrote & Monro, 1964) have been found among neurotic women. Recently, however, Jones (1974) using a predictive design aimed at developing a battery of tests to predict complications, found no relationship between MMPI measures of neuroticism and anxiety and complications of delivery.

Of the studies discussed thus far, two used projective tests or subjective ratings as measures of anxiety. Grimm (1961) used an anxiety score based on the Thematic Apperception Test; Davids et al. (1963) used the ratings of a group of interviewers. Both found anxiety related to outcome of the pregnancy, but their results may not be directly comparable to those of Davids and DeVault (1962), Davids et al. (1961), McDonald (1965), McDonald and Christakos (1963),

and Zuckerman et al. (1963) who used Taylor's Manifest Anxiety Scale and McDonald et al. (1963) who used the IPAT as their measure of anxiety.

Feminine identification. The earliest, most speculative hypotheses about ambivalence and complications during the pregnancy experience assumed, based upon the psychoanalytic literature, that any problem which had no obvious physical cause must be the result of the immaturity of the pregnant woman and her inability to accept her feminine destiny as a mother. This hypothesis has never lost its importance in the literature, and several researchers have found conflict about, and rejection of, the feminine role to be highly correlated with problems in every stage of the pregnancy experience.

Uddenberg, Nilsson, and Almgren (1971) interpreted Thematic Apperception Test (TAT) responses and items endorsed on a neuroticism scale to be indicative of conflict regarding the female role. Conflict was positively related to severe nausea and vomiting in the early stages of pregnancy, as well as to no nausea and vomiting. He described the women with no nausea and vomiting as repressors of serious conflict, an explanation supported by other researchers (Rosen, 1955). Problems later in the pregnancy have also been related to concerns about the feminine role. Carl Tupper (1962) found two personality types among women who had habitual spontaneous abortions: (1) the basically immature woman who cannot accept the major responsibility of

mature femininity, namely, becoming a mother; and (2) the independent, frustrated woman, who has been conditioned to and yearns for the rewards of the male world and feels that maternity, the greatest reward of the female world is much less satisfying, if not highly unsatisfying.

Such conflict also shows its influence at delivery and after birth. Abnormal deliveries, consisting of complications and long labor times, have been correlated with Draw-a-Person and TAT indications of sex role conflict (Davids & DeVault, 1960). Rorschach and TAT data have been used to show that women who were rejecting of the role of motherhood during pregnancy were less well adjusted after delivery than women who welcomed motherhood (Klatskin & Eron, 1970).

Few of these studies used direct measures of attitudes toward the female role and sex role identification; they relied upon projective techniques and interpretation of interview data. Because of the significant discrepancies in the operational definitions of this variable, these conclusions might more realistically be considered hypotheses still to be examined by more reliable measures and related to other aspects of pregnancy.

Recent formulations of sex role identification have begun to regard masculinity and feminity in different ways. In most measures of sexual identification, femininity is considered to be the opposite of masculinity, and the two necessarily exclude one another. If, however, one uses the formulation which Sandra Bem has developed, one would view

feminity and masculinity as two independent sets of traits which might represent different ways of being in the world, but which also might exist in combination in certain individuals (Bem, 1974). Persons who have approximately the same proportions of masculine and of feminine traits have been called androgynous, and these individuals appear to be better adjusted to the world in general (Bem, 1975).

In most research, it has been considered that a woman must meet the traditional feminine standards in order to truly accept her pregnancy and to deal with it effectively. These new conceptions of sex role identification offer different possibilities. Perhaps women who endorse an androgynous identification have more successful pregnancies. On the other hand, it may be that women who are conflicted or ambivalent about their sexual identification are those who will experience difficulties; e.g. a woman who has a highly feminine sexual identification but who endorses a non-traditional feminine role may experience conflict and anxiety, and thus have many somatic symptoms. Because the issue of conflict about role endorsement has not been explored using reliable measures, and because these concepts might markedly influence the gravida's pregnancy experience, this study made an initial attempt to explore the relationships between two recent measures of sex role identification, the Bem Sex Role Inventory (Bem, 1974) and the Attitude toward Women Scale (Spence & Helmreich, 1972).

Life Stress. The one factor which seems to be almost as frequently measured as anxiety and neuroticism in studying

outcome of pregnancy is life stress. The notion that psychological aspects of stressful experiences can affect physical health has long been part of both common sense beliefs and medical study (Alexander, 1950). The manner in which one experiences his life events (Hinkle & Wolff, 1958) and the degree to which they are seen or felt to be overloads to his system (Lipowski, 1974) appear to be important factors in the correlation of life stress with physical illness.

Early attempts to measure life stress (Berle, Pinsky, Wolf, & Wolff, 1952; Hinkle & Wolff, 1958) developed methodologies for quantifying life experiences and determined that there are strong correlations between unstable life experiences, lack of psychosocial assets, and illness onset (Holmes, Joffe, Ketcham, & Sheehy, 1961). Hinkle determined that there are "cluster years" of life stress which can be shown to precede episodes of emotional problems as well as somatic illness.

Richard Rahe, Thomas Holmes, and their colleagues have performed extensive research in an attempt to develop an adequate methodology for predicting susceptibility to disease based on recent life experiences and the amount of social readjustment they require. They have consistently found that life change intensity correlates with illness onset (Masuda & Holmes, 1967b; Rahe, 1968; 1969; Rahe, McKean, & Arthur, 1967). Their Social Readjustment Rating Scale allows the respondent to indicate events which have occurred within the previous six months; these events include such

changes as death of spouse, major change in living conditions, change in jobs, and death of a close friend. Life events have different magnitudes (life change units-LCU) based on the ratings of large samples of individuals. The clustering of life changes requiring a large amount of readjustment within a relatively short time is called a "life crisis." The severity of life crisis is a strong predictor of health change, generally in a negative direction (Holmes and Masuda, 1972; Holmes & Rahe, 1967; Masuda & Holmes, 1967a; Rahe, 1969). Even the onset of pregnancy has been shown to follow life changes. With such a wide realm of effect, it seems likely that magnitude of life change might be correlated with other aspects of the pregnancy experience.

The number of personal and/or social difficulties which a woman undergoes during her pregnancy has been shown to be related to occurrence of hyperemesis gravidarum (Rosen, 1955; Tylden, 1968), toxemia of pregnancy (Hetzel, Bruer, & Poidevin, 1961), uterine inertia (Engstrom et al. 1964), complications of labor and delivery (Gorsuch & Key, 1974), prematurity (Gunter, 1963), developmental lag in the infant (Abramson, Singh, & Mbambo, 1961) and central nervous system birth deformities (Stott, 1971).

The relationship between life stress and complications is, however, not a simple one. Nuckolls, Cassel, and Kaplan (1972) found that life changes appear to interact with psychosocial assets, i.e., any psychological or environmental factors helping the gravida cope with her pregnancy. They found that, in the presence of significant life events

before and during pregnancy, women with high psychosocial assets had one-third the rate of complications of women whose assets were low. However, in the absence of life changes, psychosocial assets were irrelevant.

The timing of the life stress was demonstrated to be significant by Gorsuch and Key (1974). State-Trait Anxiety during the first trimester of pregnancy was predictive of complications as was life stress during the second and third trimester. These authors found no correlation between anxiety and life stress at any of the times measured; however, both were related to outcome. Jones (1974), however, studying women in their ninth month of pregnancy found the number of life changes to be consistently negatively correlated with complications; i.e., the fewer life changes a woman experienced, the more complications she had. None of these studies examined life stress as it relates to somatic symptoms during pregnancy.

Somatic symptoms. The fact that several authors have been unable to demonstrate statistically significant correlations among anxiety, attitudes toward pregnancy, and complications of pregnancy, labor and delivery or physical symptoms during the pregnancy (Brown, 1964; Grimm & Venet, 1966; Heinstein, 1967) suggests the possibility that there are some other important factors at work besides attitudes and anxiety. Perhaps one of these other factors is the manner in which the gravida deals with her attitudes or with her anxiety, and the extent to which she is willing to report those events. It is obviously the case that individuals

handle anxiety differently (Lazarus, 1966). Some persons become immobilized and can do nothing; some feel emotionally agitated; some become accident prone; some convert their feelings of anxiety into physical symptoms. If a woman's anxiety affects her bodily processes it may very well affect the fetus (Davids & DeVault, 1962; Davids et al., 1961; McDonald, 1965; McDonald, et al., 1963). The way in which the gravida deals with her physical symptoms may well be related to her general approach to the world, her personality style.

Recent attempts to study pregnancy as part of the normal developmental process have focused less on emotional upheaval and more on issues such as the developing sex role identification of the gravida, her attitude toward her body and the changes she is experiencing, and her ability to consider the fetus as an individual separate from herself (Arbeit, 1975; Leifer, 1977). These efforts at construing the pregnancy experience in positive, growth-producing terms are in stark contrast to those studies which focus solely on the stressful aspects of pregnancy.

An assessment of the studies reviewed might well lead to confusion about the types of emotional experiences women have during pregnancy, as well as the potential effects of these emotional events. Indeed, the variables which have been studied to date have been garnered from theories about the pregnancy experience and from the investigators' personal preference. Few attempts have been made to measure and quantify the empirical relationships among the variables

considered important during pregnancy, and to then relate them to outcome. Grimm and Venet (1966) have done so on a limited basis, but have found no relationship between their questionnaire alone and complications. Other studies of the gravida's experience without regard for outcome have been exploratory and descriptive using few of the measures typically employed in personality research (Arbeit, 1975; Leifer, 1977).

In order to approach accurate and quantified descriptions of the pregnancy experience, it was necessary to choose measures which have been demonstrated to be significant to the gravida's experience and which have documented reliability and validity. Medical data have consistently shown that age at the time of pregnancy, race, parity or number of children the woman has, and socioeconomic status are related to frequency of symptoms and complications a woman may experience (Eastman & Hellman, 1966). Because of the significance of these variables, it is essential that they be recorded and their influence controlled. Thus, age, race, parity, and socioeconomic status were all accounted for in this study.

In addition, the need to control two other areas has been demonstrated. Barclay (1972) showed that the knowledge a woman has about the biological aspects of pregnancy is related to the amount of anxiety she experiences at delivery. It was a logical extension of this finding that knowledge of pregnancy might influence anxiety during the pregnancy as well as at delivery. Consequently, pregnancy information

was also measured as a control variable. Finally, tendency to respond in a socially desirable manner has consistently proven to be a source of bias in data sets (Crowne & Marlowe, 1960). Because such a response set might influence a woman's willingness to accurately report anxiety, feminine identification, and somatic symptoms, this variable was also used as a control measure.

More substantive issues which have frequently been studied are anxiety, life stress, sex role identification, and somatic symptoms during pregnancy. As previously reported, these variables have frequently been related to outcome of pregnancy, but have seldom been related to one another. Based on the literature, one might expect to find complex interactions among some of the variables. Examination of both the simple and complex relationships among these variables, without regard to outcome, was the purpose of this study. (The variables are listed in Table 1.)

While correlational techniques allow researchers to quantify simple relationships between variables, techniques which relate all the variables to one another were also required in this study. In order to isolate variables which accounted for a significant portion of the gravida's experience, and limit the measures to those which did account for a considerable amount of the variance in her responses, it was decided that factor analysis would be used to describe the factor structure, thus elucidating the relationships of interest. It was assumed that the description of meaningful

Table 1
Variable Names

1.	Age
2.	Race
3.	Parity[a]
4.	Socioeconomic Status
5.	Knowledge about Pregnancy
6.	Socially Desirable Responding
7.	Life Changes before Pregnancy
8.	Somatic Symptoms before Pregnancy
9.	Somatic Symptoms during Pregnancy
10.	State anxiety
11.	Trait anxiety
12.	Attitude toward Women
13.	Attitude toward Women, Standard Deviations
14.	Masculinity
15.	Femininity
16.	Androgyny
17.	Masculinity, Standard Deviations
18.	Femininity Standard Deviations

Corrected Score Variable Names

1.	Life Changes before Pregnancy
2.	Somatic Symptoms before Pregnancy
3.	Somatic Symptoms during Pregnancy
4.	State anxiety
5.	Trait anxiety
6.	Attitude toward Women
7.	Attitude toward Women, Standard Deviations
8.	Masculinity
9.	Femininity
10.	Androgyny
11.	Masculinity, Standard Deviations
12.	Femininity, Standard Deviations

[a]In this study, Parity was used to mean the number of children the pregnant woman had prior to this pregnancy.

factors in this population would assist in determining the importance of measuring particular variables.

While the interactions among all the variables might indeed be quite complex, several straightforward relationships were expected to exist. Since anxiety has been repeatedly shown to correlate with complications of all sorts, it was expected that a correlation would exist between anxiety and somatic symptoms in this study as well. While the relationship between anxiety and life stress is not clear, life stress has frequently been related to physical symptoms. Thus, it was also expected that a correlation would exist between life changes and somatic symptoms.

In addition, in an attempt to begin exploration of the concept of conflict about the feminine role, two recent measures of sex role identification were used. It was assumed that women who endorsed a non-traditional sex role would also have an androgynous identification. If this is so for pregnant women generally, then a discrepancy between these two scores might be considered conflict about sex role.

Hypotheses to Be Tested

1. If a woman habitually experienced high anxiety, then she would report more symptoms before pregnancy than a woman who experienced low anxiety; i.e., high A-Trait on the State-Trait Anxiety Inventory (STAI) would be negatively correlated with Symptoms Before Pregnancy.[3]

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[3]A low score on Symptoms Before Pregnancy and on Symptoms During Pregnancy indicates many symptoms. Thus, the predicted negative correlations would indicate the existence of many symptoms and high anxiety.

Similarly, if a woman reported marked anxiety during her pregnancy (A-State), she would also experience many symptoms during pregnancy, producing a negative correlation between A-State and Symptoms During Pregnancy.[4]

2. If a woman reported many salient life changes (LCU) prior to pregnancy, then she would experience more physical symptoms during pregnancy than women with few life changes; i.e., LCU will be negatively correlated with Symptoms During Pregnancy.[5]

3. If a woman endorsed an androgynous identification on the Bem Sex Role Inventory (low score), she would show a preference for a non-traditional feminine role on the Attitude toward Women Scale (high score); i.e., a negative relationship between the two would exist.

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[4]A low score on Symptoms Before Pregnancy and on Symptoms During Pregnancy indicates many symptoms. Thus, the predicted negative correlations would indicate the existence of many symptoms and high anxiety.

[5]A low score on Symptoms During Pregnancy indicates many symptoms. Thus, the predicted correlation would indicate the existence of many symptoms and many life changes.

CHAPTER II
METHOD

Subjects

Participants in this study were 64 pregnant women who were in their first trimester of pregnancy. These women were recruited from among the patients of the Broward County Health Department Maternity Clinics and from several area obstetricians. Only English-speaking women were used in the study.

These participants ranged from 14 to 36 years of age, mean age = 23.6. Thirty-nine were white; the other 25 were black Americans. Of these, 34 were pregnant for the first time, 16 were pregnant for their second child, 11 were expecting their third child, one her fifth, and two their sixth children. Two of the gravidas were in the highest socioeconomic class, three in the second, 13 in the middle class, 22 in the fourth, and 24 in the fifth and lowest class based on education and occupation.

Materials

Background Information Questionnaire. This questionnaire was in large part taken from one used in the doctoral dissertation of D. J. Venezia (1972). The information requested was that required to determine socioeconomic class according to A. B. Hollingshead's Two-Factor Index of

Social Position (1957). This is a frequently used indicator of socioeconomic status which determines social class according to education and occupation. In addition, the questionnaire included questions about race, age, number of previous pregnancies, spontaneous abortions, multiple births, and RH factor. This instrument was used to gather information about the control variables. (The questionnaire can be found in Appendix I.)

Pregnancy Information Test. This was a measure developed by Rosalyn Barclay (1972) to determine the amount of objective knowledge a woman has of pregnancy and of the physical processes involved in labor and birth. This measure was included as a control variable in order to account for another possible source of variation which might have contributed to anxiety. (This test is found in Appendix II. Means and reliability data are in Appendix XI.)

Somatic Symptoms List. This list consists of 60 items taken from the Health Insurance Program Pregnancy Questionnaire developed by Elaine Grimm and Wanda Venet (1966). The items were rated on frequency of experience "BEFORE PREGNANCY" and "DURING THIS PREGNANCY." The responses for each item were "Always", "Rarely", "Seldom", and "Never." In scoring, weights of one, two, three, and four were applied with "Always" receiving a score of one, and "Never" receiving a score of four. Thus, on this scale low scores meant that the gravida experienced many physical symptoms. (This list appears in Appendix III.)

Marlowe-Crowne Social Desirability Scale (SD). The Social Desirability Scale was developed by Crowne and Marlowe (1960) to represent behaviors which are not socially acceptable but which are not psychopathological in the sense of the Minnesota Multiphasic Personality Inventory (MMPI) items included in the Edwards Social Desirability scale. The Marlowe-Crowne SD was used in an attempt to determine which subjects might be responding to the attitude questions on the basis of a socially desirable set. Such a set might well influence scores, in that individuals who refuse to give a response which is not socially acceptable may appear to endorse traditional roles when in actuality they do not. High scores indicated a tendency to respond in a socially desirable manner. (The scale is presented in Appendix IV.)

Social Readjustment Rating Scale (SRRS). Holmes and Rahe (1967) have developed this 43 item scale to measure the quantity of life stress which has occurred in the previous six months in an individual's life. Each item endorsed by a participant was assigned a standard weight based on previous research. The sum of the weights was the total number of Life Change Units the person had experienced. Previous research has demarcated scores over 300 as indicative of a "life crisis" (Rahe, 1969).

The scale has been found to have coefficients of reliability ranging from .638 to .744. The instrument is most reliable for the events with highest salience or

magnitude ratings (LCU), those events which seem to be most significant in predicting health change (Casey, Masuda, & Holmes, 1967). (The SRRS can be found in Appendix V.)

State-Trait Anxiety Inventory (STAI). This instrument, developed by Spielberger, Gorsuch, and Lushene (1970), is a measure of felt anxiety under two different sets of instructions. The test measures the way a person typically feels (A-Trait) and the way he feels in a particular situation (A-State). The inventory was used in this study in an attempt to separate the anxiety aroused by the state of pregnancy (A-State) from the anxiety typically felt by the woman (A-Trait).

Femininity Measures. In order to examine two separate aspects of feminine identification or acceptance of the female role, two measures of femininity were employed.

Bem Sex Role Inventory (BSRI). The BSRI was developed by Sandra Bem (1974) in response to a need for a measure of sex role identification which does not posit that masculinity and femininity are merely opposites of one another. The BSRI treats these two dimensions as separate constructs which interact to form another category of identification called androgyny. The scale appeared to be useful for this study because it introduced the concept of androgyny—a healthy combination of masculine and feminine elements.

Masculinity and femininity scores were obtained independently and ranged from one to seven. Androgyny was a

corrected difference between the masculinity and femininity scores, a t-score.[1] A score near zero was an indication of an androgynous identification. Positive scores suggested feminine sex-typing, and negative ones indicated masculine sex-typing. Bem has obtained internal consistency estimates on all three scales ranging from .70 to .86; test-retest reliability is also adequate, ranging from .89 to .93 (Bem, 1975). (The BSRI can be found in Appendix VI.)

Attitudes toward Women Scale (AWS). Janet Spence and Robert Helmreich (1972) have developed a scale to measure the tendency with which a person views feminine roles—traditional vs. liberal—a low score indicating a conservative system of values about feminine role, and a high score indicating a more liberal, feminist set of values. The scale consistently measures differences between males and females. (The AWS appears in Appendix VII.)

Procedure

Subjects in this study were contacted by letter and/or by telephone about the purpose of the study. A brief description of the research and their involvement was given. An appointment was arranged with each woman who agreed to

[1]In this study, the Androgyny score was operationally defined as a t-score using the masculinity and femininity scores in the following formula:

$$t = \frac{\bar{F} - \bar{M}}{\sqrt{\frac{2\left(\frac{F^2 + M^2}{n_1 + n_2 - 2}\right)}{n}}}$$

participate; an interview was conducted by the experimenter or by one of three interviewing assistants. The purpose of the meeting was to explain in greater detail the nature of the study, to answer any questions, and to give instructions on responding to the various questionnaires. (The Letter to Prospective Subjects is in Appendix VIII; the Letter to Physicians can be found in Appendix IX; and the Structured Interview Protocol is in Appendix X.)

Since the questionnaires used were all paper-and-pencil tasks, self-administration was the standard procedure. Some of the information and ratings requested were retrospective in nature, but the bulk of the information required concerned the present state of the gravida. The tasks were performed by each woman at approximately the same time in pregnancy, i.e., prior to the sixteenth week of the pregnancy. Five randomized orders of presentation of the questionnaires were employed to avoid a response set based on sequence of questions. Each gravida completed the questionnaires in her own home at her convenience. The completed questionnaires were picked up from the participant by the investigator.

CHAPTER III
RESULTS

In order to determine the effects the control variables had on the other variables measured, two sets of analyses were performed. First, raw scores on all 18 variables were used to test the hypotheses. Secondly, corrected scores were calculated by means of regression analysis, partialling out the portion of each score which could be predicted by the control variables alone. Once corrected scores or residuals were calculated, the analyses were repeated. Finally, factor analyses were performed on both raw scores and residuals to obtain an indication of the manner in which the measures varied in common. (Table 2 contains the ranges, means, and standard deviations of all 18 variables.)

Hypothesis 1. It was hypothesized that if a woman habitually experienced high anxiety, then she would report more symptoms before pregnancy than a woman who experienced low anxiety; i.e., high A-Trait on the State-Trait Anxiety Inventory would be negatively correlated with Symptoms Before Pregnancy. A negative correlation was expected because a low score on the Symptoms Before Pregnancy measure indicated many symptoms. Similarly, if a woman reported marked anxiety during her pregnancy (A-State), she would also experience many Symptoms During Pregnancy. Both portions of this hypothesis were tested by means of the Spearman Rank Order Correlation

Table 2
Variable Ranges, Means, and Standard Deviations

Variable	Range	Mean	S.D.
1. Age	14 - 36	23.6094	4.5676
2. Race	white or black 1 or 2	1.3906	0.4879
3. Parity	0 - 5	0.8125	1.1439
4. Socioeconomic Status	1 - 5	3.9844	1.0230
5. Pregnancy Information	8 - 21	14.3594	3.3465
6. Social Desirability	4 - 28	16.4063	5.3025
7. Life Changes	53 - 480	198.7699	101.3742
8. Symptoms Before	154 - 229	194.7500	18.1418
9. Symptoms During	106 - 198	163.1563	20.3894
10. A-State	22 - 91	41.0625	14.0889
11. A-Trait	25 - 67	45.1094	10.3170
12. Attitude toward Women	64 - 156	95.7031	20.4357
13. AWS-Standard Deviations (SD)	0.674 - 1.501	1.0587	0.1731
14. Bem Sex Role Inventory, Masculinity	2.45 - 5.65	4.2578	0.6982
15. Bem Sex Role Inventory, Femininity	2.40 - 6.20	4.9267	0.6813
16. Bem Sex Role Inventory, Androgyny[a]	-1.34 - 5.43	1.3716	1.3411
17. Bem Sex Role Inventory, Masc.-SD	0.696 - 2.720	1.7091	0.3857
18. Bem Sex Role Inventory, Fem.-SD	0.598 - 2.540	1.5966	0.3918

[a]Absolute values of the Androgyny scores were used in all computations as per Bem (1974).

Coefficient to determine the direction and degree of the relationship between the two variables.

Part one of Hypothesis 1 was not confirmed using raw scores. No significant correlation was found between A-Trait and Symptoms Before Pregnancy, thus disconfirming the notion that tendency to report more physical symptoms before pregnancy was related to typical state of anxiety ($r = -.0944$). Part two of this hypothesis did, however, receive moderate support in the data. A-State was slightly negatively correlated with Symptoms During Pregnancy ($r = -.2192$, p .050), thus suggesting that women who experienced higher anxiety during pregnancy also reported more symptoms during pregnancy. Since a stronger correlation was expected, tests of curvilinearity were performed using regression analysis. For part two of the hypothesis, a slight curvilinear relationship was found using a squared term (Multiple $R = .2614$, $F = 4.55$, df = 1,62, p .05).

Using corrected scores to compute the correlation coefficients resulted in confirmation of both parts of the hypothesis. When the effects of Age, Race, Parity, Socioeconomic Status, Pregnancy Information (Knowledge of Pregnancy), and Social Desirability were subtracted from the other variables, A-Trait was negatively correlated with Symptoms Before Pregnancy ($r = -.2543$, p .025), thus suggesting that when controls are employed for Age, Race, and the other variables, women who were typically anxious experienced more physical symptoms before pregnancy than women low in anxiety. Similarly, when the effects of the control variables were subtracted out, A-State was again

negatively correlated with Symptoms During Pregnancy ($r = -.2194$, $p < .050$). When the control variables were accounted for, the magnitude of this correlation remained significant at the same level. (Correlation coefficients for the raw score data can be found in Table 3, and for the corrected scores in Table 4).

Hypothesis 2. If a woman reported many salient life changes (LCU) prior to pregnancy, then she would experience more physical symptoms during pregnancy than women with few life changes; i.e., LCU would be negatively correlated with Symptoms During Pregnancy. This hypothesis was also tested by means of Spearman Rank Order Correlations. No relationship was found between LCU and Symptoms During Pregnancy using raw scores ($r = -.0633$) or using corrected scores ($r = -.1130$).

Hypothesis 3. If a woman endorsed an androgynous identification on the Bem Sex Role Inventory (low score), she would show a preference for a non-traditional feminine role on the Attitude toward Women Scale; i.e., a negative relationship between the two would exist. This hypothesis was also tested by means of the Spearman Rank Order Correlation Coefficient. The absolute values of the Androgyny scores were used to retain the meaning of the scale. No relationship was found between the two variables. When raw scores were used, $r = -.0342$; when corrected scores were used, $r = -.0326$.

Factor Analyses. In order to examine the complex interrelationships of all the measures in terms of the manner in which they vary together, factor analyses were

Table 3
Intercorrelation Matrix: Raw Scores

Variables	1	2	3	4	5	6	7	8
1								
2	[a] -.4653							
3	[a] .5536	-.1761						
4	[a] -.4810	[a] .6301	-.1602					
5	[a] .4380	[a] -.6537	[d] -.2643	[a] -.5233				
6	-.1369	.2042	.0515	.1859	-.1823			
7	-.0087	-.0910	-.0262	.0514	-.0845	-.0650		
8	-.0305	.0546	[e] .2431	.0863	.0363	.1804	-.0828	
9	-.0320	-.0269	-.0335	-.0641	-.0295	.0861	-.0633	[a] .4250
10	-.1416	[a] .3660	.1628	[c] .2976	-.1709	.0966	.1982	-.0436
11	[c] -.2994	[a] .4138	.0227	[a] .4351	-.1642	.0245	.0484	-.0944
12	.0429	[c] -.3122	-.0613	[a] -.3731	[b] .3567	[d] -.2615	[e] -.2437	-.0592
13	-.1257	[a] .3866	.0671	[e] .2214	[e] -.2424	.1962	.1671	-.1583
14	[e] .2230	[c] -.3046	.0172	[d] -.2522	.1411	-.0655	-.2009	-.1676
15	.1955	[d] -.2673	.0304	-.0919	.1507	.0695	-.0947	-.0462
16	-.1217	.0191	-.1121	.0431	.0635	-.0702	.0635	.0071
17	-.0982	-.0052	.0758	[b] .3444	-.1312	.0065	.1632	.1192
18	[b] -.3549	[a] .4710	-.0462	[a] .5723	[a] -.4221	.1639	.1432	.1737

[a] $p < .001$ [b] $p < .005$ [c] $p < .010$ [d] $p < .025$ [e] $p < .050$

Table 3 - extended

9	10	11	12	13	14	15	16	17	18
[e]-2192									
[c]-.3043 [a] .7623									
.0303 [d]-.2627	-.1631								
-.1501	.1622 [e] .2271	[a]-.4159							
-.1317 [e]-.2151	-.1560 [e] .2348	-.1478							
.0880 [d]-.2592	[d]-.2716 [e] .2263	-.1779 [a] .5323							
.0314	-.0916 -.1465	-.0342	.0088 [a]-.3905	[b] .3183					
-.0536	-.0389 -.0060	-.1655	.0769	.1091	.0699	-.1845			
-.0662 [e] .2131	[e] .2409 [b]-.3225	[d] .2760	-.1150	-.1715	-.1648 [a] .5556				

Table 4
Intercorrelation Matrix: Corrected Scores

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1												
2	-.1365											
3	-.1130 [a]	.4341										
4	.1627	-.1213 [e]	-.2194									
5	.0667 [d]	-.2543 [a]	-.3987 [a]	.6651								
6	[b] -.3221	.0591	.0549	-.1671	-.0003							
7	[d] .2685	[b] -.3518	-.1520	-.1285	.0908	[b] -.3436						
8	[e] -.2216	-.0772	-.1030	-.0575	.0311	[e] .2193	-.0470					
9	-.0870	.0177	.1287	-.1333	[e] -.2161	[e] .2218	-.1372	[a] .4823				
10	.0126	-.0231	.0518	-.1373	[d] -.2533	-.0326	-.0025	[a] -.4089	[b] .3600			
11	.0733	.0885	-.1066	-.0625	-.1345	-.0504	.0916	[e] .2212	.1593	[e] -.2150		
12	.1829	.2022	-.1086	-.0350	-.0546	-.1388	.0760	-.0608	-.1330	-.2027	[a] .5850	

[a] $p < .001$ [b] $p < .005$ [c] $p < .010$ [d] $p < .025$ [e] $p < .050$

performed on both the raw data and the corrected scores. This procedure allowed comparison of the common variance accounted for by the measures of interest, and thus gave an indication of their importance in the pregnancy experiences of this group of women. It was assumed that systematic examination of the factor structure would facilitate an understanding of the ways in which women experience their pregnancies.

Guertin and Bailey's program EEL 501 was used to calculate Principle Axes Factor Matrices for the raw data and corrected scores, and to rotate those matrices to Varimax Criterion (Guertin & Bailey, 1970). The principle axes solution locates the first factor so as to maximize the sum of squares of its factor loadings. A residual matrix is calculated for each succeeding extraction, and each factor is located similarly with respect to the residual matrix from which it is calculated. The Varimax solution for factor rotation allows an orthogonal rotation of the factors. This computer program produced the factor matrices using squared Multiple R's as the communality estimates. In addition, this procedure produced three rotated matrices rotating those factors with latent roots of at least 0.44, then trying one more and one less factor in the rotations. Table 5 contains the factor matrix (Matrix 1) including nine factors rotated to the Varimax Criterion. This matrix was calculated from the raw scores, and thus included loadings for all 18 variables. Table 6

Table 5
Factor Matrix 1: Raw Scores

	1	2	3	4	5
1	-.3155	-.1545	.0995	* .7577	-.1449
2	* .7881	.2041	-.2531	-.0723	.0905
3	-.0599	.1764	-.0050	* .8233	.0813
4	* .5721	.3075	-.0537	-.1061	.1281
5	*-.7533	-.0442	.0271	.2189	.1416
6	.1400	-.0191	.0390	-.0197	-.0332
7	-.0067	.0475	-.0478	-.0064	.0049
8	-.0244	-.0125	-.0592	.1519	.0012
9	.0297	-.2669	-.0032	-.0178	.1145
10	.1611	* .7987	-.0529	.1144	-.0651
11	.1505	* .8695	-.1430	-.0317	.0007
12	-.3788	-.0643	.1752	-.1438	.0011
13	.2533	.0421	-.2068	.2266	.1303
14	-.1491	-.0912	* .7280	.0543	*-.5030
15	-.1332	-.1264	* .8736	.0352	.2477
16	-.0273	-.0656	.0605	.0001	* .8884
17	.0090	-.0015	.1891	.0124	-.1080
18	.3460	.0296	-.0617	-.0937	-.0352
Sum of Squared Loadings	2.06	1.70	1.52	1.44	1.22

*Factor loadings greater than 0.40.

Table 5 - extended

6	7	8	9	Communality Estimate
-.0463	-.2093	.1204	-.1232	.7998
-.0611	.1056	-.2442	.1769	.8445
.0756	.0575	-.0647	.1208	.7412
.0127	.3603	.0847	.1445	.6701
.0328	-.0791	-.1314	-.1401	.6932
.1202	-.0088	.0217	* .6129	.4138
-.0876	.1496	* .5876	.0584	.3889
* .7337	.2059	-.0789	.2284	.6459
* .5685	-.1030	-.0645	.0091	.4602
-.0689	-.0518	.2276	-.0051	.7452
-.2284	.0865	-.1489	-.0015	.8714
.1056	-.1139	-.3613	*-.4863	.6067
*-.5086	.1906	.0345	.3470	.5987
-.0903	.0952	-.1586	-.0847	.8639
.0572	.0847	-.0132	.0317	.8528
.0425	-.0939	-.0194	-.0437	.7955
.0026	* .7933	.1529	-.0170	.6991
.0010	* .7530	.0835	.0663	.7320
1.24	1.55	0.72	0.90	

Table 6
Factor Matrix 2: Corrected Scores

	1	2	3	4	5	6	Communality Estimate
1	.1274	.1999	-.0996	-.0669	.0575	* .4999	.3642
2	-.0975	.1930	-.0363	* .7469	-.0455	-.0440	.6014
3	-.2781	-.1514	-.0004	* .5887	.0906	-.0481	.4872
4	* .8545	-.0344	-.0228	-.0331	-.0344	.1401	.7339
5	* .7684	-.0727	-.0519	-.2941	-.1659	-.0287	.7321
6	-.0339	-.0300	.1076	.0009	.0063	*-.6201	.3950
7	-.1196	.0826	-.0302	*-.4876	.0165	* .5161	.5354
8	-.0044	.1360	* .7669	-.0673	*-.4443	-.2120	.8311
9	-.0765	.1130	* .8173	.0222	.3655	-.1599	.8238
10	-.1607	-.1780	.0388	.0128	* .8399	.0411	.7542
11	-.0917	* .7647	.1746	-.0383	-.1114	.0453	.6457
12	.0021	* .7794	.0080	.0775	-.0868	.2281	.6727
Sum of Squared Loadings	1.48	1.37	1.32	1.25	1.10	1.05	

*Factor loadings greater than 0.40.

shows the rotated factor matrix for the corrected scores (Matrix 2); six rotated factors were included.

Using loadings greater than 0.40 as the cut off criterion, the nine factors in Table 5 appeared to be psychologically meaningful. They were named as follows based upon the variables which loaded heavily on the factor: 1. Control: Race, Socioeconomic Status, Knowledge of Pregnancy; 2. Anxiety; 3. Sex-typing; 4. Control: Age, Parity; 5. Androgyny; 6. Somatizing and Ambivalence; 7. Sex Role Ambivalence; 8. Life Changes; and 9. Conventionality.

Removal of the effects of the control variables resulted in a factor matrix which did not include the two Control factors (1 and 4) and which eliminated the Conventionality factor, the Social Desirability scale also being a control variable. The resultant factors were the following: 1. Anxiety; 2. Sex Role Ambivalence; 3. Sex-typing; 4. Somatizing and Ambivalence; 5. Androgyny; and 6. Life Changes and Traditionalism.

The variables which loaded heavily on these factors and therefore defined them were those one might expect from the names chosen. The Anxiety factor (2 and 1, from Matrices 1 and 2 respectively) had only two measures which loaded significantly. In Matrix 1, A-State loaded .7987 on Factor 2, while A-Trait loaded .8695; in Matrix 2, A-State had a loading of .8545 on Factor 1 with A-Trait loading .7684. Sex-typing (3 and 3) consisted of the two

scales which directly measured tendency to be masculine or feminine in sex role identification. The Bem Sex Role Inventory measure of masculinity loaded .7280 on Factor 3 in Matrix 1; the BSRI measure of femininity loaded .8736 on that factor. In Matrix 2, BSRI masculinity had a loading of .7669 while BSRI femininity loaded .8173. The Androgyny factor (5 and 5) consisted of the Bem androgyny score and the BSRI masculinity score. BSRI androgyny loaded .8884 in Matrix 1 and .8173 in Matrix 2 and masculinity loaded -.5030 in Matrix 1 and -.4443 in Matrix 2.

The factor entitled Somatizing and Ambivalence (6 and 4) had large loadings from three variables. Symptoms Before Pregnancy loaded .7337 in Matrix 1 and .7469 in Matrix 2; Symptoms During Pregnancy loaded .5685 and .5887 in Matrices 1 and 2, respectively. The Standard Deviations of scores on the Attitude toward Women Scale (AWS-SD) loaded -.5086 in Matrix 1 and -.4876 in Matrix 2. Factors 7 and 2, Sex Role Ambivalence, also consisted largely of the Standard Deviations of scores, this time of the Bem masculinity and femininity scales. BSRI masculinity-standard deviations (BSRI-M-SD) loaded .7933 on Factor 7 while Bem femininity-standard deviations (BSRI-F-SD) loaded .7530 on that factor. In the second matrix, BSRI-M-SD loaded .7647 on Factor 2 with BSRI-F-SD loading .7794. Finally, the Life Changes factor (8 and 6) consisted solely of LCU in Matrix 1 (loading .5876). But in Matrix 2, two other measures also loaded heavily. LCU had a loading of .4999

In addition, the AWS was loaded -.6201, and the AWS standard deviations loaded .5161. It is for this reason that the factor was entitled Life Changes and Traditionalism in the second set of factor titles.

The rotated factors in Matrix 1 accounted for 68.60% of the total score variance which was 96.65% of the common variance. Similarly, those in Matrix 2 accounted for 63.01% of the total score variance which was 97.02% of all the common variance. These factor matrices thus accounted for a significant portion of the variance in the variables measured, and were therefore a reasonable representation of the factor structure in this sample of pregnant women.

CHAPTER IV
DISCUSSION

Hypothesized Relationships

The strong effect of the control variables measured in this study was demonstrated by the difference in the tests of Hypothesis 1 using raw scores and corrected scores. When no control for the effects of Age, Race, Parity, Socioeconomic Status, Knowledge of Pregnancy, and Socially Desirable Responding was employed, there was no relationship between Symptoms Before Pregnancy and A-Trait. However, when the effects of these variables were removed, there was a significant negative correlation; thus, women who were high in A-Trait also habitually experienced more physical symptoms.

The mild curvilinear relationship which was found between Symptoms During Pregnancy and A-State presented an interesting situation. Women who were high in anxiety had both low and high numbers of physical symptoms. Women with an intermediate number of symptoms reported little anxiety. This relationship suggested either that some women who reported high anxiety did not somatize that anxiety or that they denied the physical symptoms that went with high anxiety for the other group. The latter interpretation was supported by some of the previous literature (Rosen, 1955; Uddenberg et al., 1971).

Support for Hypothesis 1 was consistent with the literature. Studies have reliably found that anxiety before and during pregnancy is correlated with physical symptoms of

all kinds, including complications of labor and delivery (Davids & DeVault, 1962; Davids et al., 1961; Mann & Grimm, 1962; McDonald, 1965; McDonald & Christakos, 1963; McDonald et al., 1963; and Zuckerman et al., 1963).

Hypothesis 2, on the other hand, has received mixed support in previous research. While Holmes and Rahe have consistently demonstrated that the amount of life stress is related to physical illness (Masuda & Holmes, 1967b; Rahe, 1968; 1969; Rahe et al., 1967), studies which have dealt directly with pregnancy have produced varying results. Williams, Williams, Griswold, and Holmes (1975) have found that life change correlates with prematurity. This study used a retrospective design on one group of women who had delivered prematurely and one group who had not. The possibility that the women reported more life changes as an explanation for their premature deliveries does exist, making interpretation of these results difficult. Jones (1974), on the other hand, found a negative relationship between life stress and complications. Women with high life change scores experienced fewer complications.

Gorsuch and Key (1974) found that life change was correlated with complications of labor and delivery. They also found that there was no correlation between anxiety and life changes; anxiety during the first trimester was related to complications while life changes in the second and third trimesters predicted difficulties.

In the present study, there was no correlation between anxiety and life changes, but anxiety was correlated with

somatic symptoms before and during pregnancy. On the other hand, there was no correlation between life changes and somatic symptoms. Since the measures in this study were taken during the first trimester of pregnancy, a period when Gorsuch and Key found no relationship of life changes to physical problems, this study supports their findings. Finally, since none of these studies examined somatic symptoms before and during pregnancy, there was no direct comparison study to the one reported herein.

It is entirely possible that the explanation of Nuckolls, Cassell, and Kaplan (1972) is pertinent. The fact that some persons live very unsettled and transient life styles and therefore experience many life changes, does not in itself mean that they experience stress. If the individual has an adequate social support system, then the effects of so many changes upon their lives and upon physical illnesses may be negligible. On the other hand, if a person is without such supports, then life changes may indeed be more stressful. Since no measure of social support system was used in this study, it was impossible to separate out those women who had adequate supports from those who did not.

Finally, Yamamoto and Kinney (1976), using a variation of the Schedule of Recent Events, have developed a scale including pregnant women's rank and mean stress ratings of life events. They have concluded that it is essential to use the stress ratings given to life events by special groups, rather than the ratings developed by Holmes and Rahe

for use with all groups. They also believe that a modification of the Schedule of Recent Events which clarifies the events and more clearly defines them for use with pregnant women (Helper, Cohen, Beitenman, & Louise, 1967) increases the reliability of a woman's responses. Since this questionnaire was not employed, it was not possible to recalculate the results using Yamamoto's weights. Without these data, we must assume that life changes had negligible effect on the number of somatic symptoms a woman experienced before and during pregnancy.

Hypothesis 3 also received no support from these data. This relationship was hypothesized based upon the logical and theoretical connection of endorsement of non-traditional feminine role behaviors and psychological androgyny. Considerable discussion has occurred about the method of scoring androgyny. Strahan (1975) pointed out some of the difficulties in using a t-score. Spence, Helmreich, and Stapp (1975) explicated the difficulties in terms of the spread of ratings by the subject. They demonstrated the existence of some persons who were low responders and some who were high responders. Based on this notion, they divided their groups into high masculine-high feminine, high masculine, low feminine, low masculine-high feminine and low masculine-low feminine responders. They found distinct differences among persons in these groups who would have been rated as androgynous using the t-score. Low masculine-low feminine and high masculine-high feminine persons might be considered androgynous with Bem's method. However,

self-esteem and other ego strength scores for the two groups were extremely different. Bem has agreed with Spence that only those persons who are high masculine-high feminine should be considered androgynous having the qualities included in the concept (1975).

In order to assign Spence's four groups, it is necessary to have both men and women in the population measured so that median scores for men and women can be used as the cut off points for the four categories. While separating low masculine-low feminine from high masculine-high feminine women might have been desirable in this study, there was no comparable group of male subjects to use in determining the median points for the low and high categories. In a study of this sort, it would have been necessary to find a group of men who were comparable in age, race, and socio-economic status to the female participants. It is likely that the husbands or mates of the Subjects would have been the ideal group. Efforts should be made in future research to obtain such samples. Based on these results we concluded that androgyny, as measured by the Bem Sex Role Inventory, must be considered a completely separate concept from endorsement of a non-traditional feminine role on the Attitude toward Women Scale. Non-agreement of these scores could not be considered sex role conflict.

Other Correlations

In addition to the relationships between A-Trait and Symptoms Before Pregnancy, and between A-State and Symptoms

During Pregnancy, an even stronger relationship existed between A-Trait and Symptoms During Pregnancy. The magnitude of these correlations was considerably greater than the others. When the variance due to the control variables was not accounted for, $r = -.3043$ ($p < .010$); when residual scores were used, $r = -.3987$ ($p < .001$). Theoretically, A-Trait is considered to be one's potential for felt anxiety in a stressful situation (Spielberger, Gorsuch, & Lushene, 1970). It is logical that this potential would be related to the number of somatic symptoms one experienced. It is not at this time clear why there was a stronger relationship between A-Trait and Symptoms During Pregnancy than there was between A-Trait and Symptoms Before Pregnancy.

The correlations between A-Trait and A-State in this study were somewhat higher than the correlations that Spielberger et al. (1970) reported ($r = .7623$ for raw data; $r = .6651$ for residuals). In the STAI Manual (1970), the authors suggested that high correlations occur in situations where both parts of the questionnaire were completed consecutively with no time lapse. Since this was the condition in the present study, the high correlations were not unexpected.

While attitude toward the feminine role as measured by the Attitude toward Women Scale was not correlated with Bem androgyny, it was significantly correlated with the Bem femininity score ($r = .2263$, $p < .05$) when raw scores were used. This suggested that a woman who endorsed a non-traditional feminine role had a slight tendency to rate

herself as feminine on the Bem scale. This supported the notion that the two scales are measuring different concepts. Each participant's score on the Attitude toward Women Scale was moderately correlated with her own standard deviation score on that scale ($r = -.4159$). This negative correlation reflected the fact that the range of AWS standard deviations was quite constricted. Each item received a response ranging from zero to three, for 55 items. Thus, while the AWS score could potentially range from zero to 165, and did vary from 64 to 156, the range of the standard deviations was considerably less. Thus, the standard deviation score of each subject remained low while AWS scores increased. This negative correlation was, therefore, an artifact of the limitations on the AWS standard deviation scores. Because of this constriction, relationships involving the AWS-SD score must be interpreted with care. This limitation did not appear to be present for each participant's standard deviation score on the Bem scale. There was a near zero correlation between Bem masculinity score (BSRI-M) and BSRI-M standard deviation; similarly the correlation between BSRI femininity and BSRI-F standard deviation was negligible.

As previously mentioned, the control variables were of considerable importance in this study. A brief review of some of the relationships which existed among the control variables will further explicate this importance. Age was related to race, parity, SES, and knowledge of pregnancy. In this group, the black women tended to be younger than the

white women; the older the participant, the greater the number of children she had; the younger she was, the lower her socioeconomic status and the less she knew about pregnancy. Since the black women were those who were younger, they were also the women who were poor and lacking in information about pregnancy. (See Table 3 for correlations).

The control variables were also significantly related to some of the other measures. There was a slight relationship between age and A-Trait; younger women tended to be habitually more anxious ($r = -.2994$, $p < .010$) than the older women. The older a woman was the more she tended to rate herself high on masculine adjectives (Bem masculinity score) $r = .2230$, $p < .05$). Consistently with this, the younger women tended to be more ambivalent about their feminine identification (Bem femininity standard deviations) ($r = -.3549$, $p < .005$). Race was also related significantly to anxiety and to several of the sex role measures. The black women in the study tended to report higher A-State ($r = .3660$, $p < .001$) and higher A-Trait ($r = .4138$, $p < .001$) than the white participants. In addition, they endorsed more traditional feminine roles than did the white women ($r = -.3122$, $p < .010$), were more ambivalent about their endorsements on the Attitude toward Women Scale ($r = .3866$, $p < .001$), tended to rate themselves low on both Bem masculinity and feminity ($r = -.3046$, $p < .010$; and $r = -.2673$, $p < .001$, respectively), and were more ambivalent about their feminine ratings than were their white counterparts ($r = .4710$, $p < .001$).

As might be expected by the high correlation between race and SES in this population, socioeconomic status is significantly related to many of the same factors as race and in the same directions. SES is correlated with the following variables: A-State ($r = .2976$, $p < .010$); A-Trait ($r = .4351$, $p < .001$); Attitude toward Women ($r = -.3731$, $p < .001$); Attitude toward Women standard deviations ($r = .2214$, $p < .05$); Bem masculinity score ($r = -.2522$, $p < .025$); BSRI-M standard deviations ($r = .3444$, $p < .005$); and Bem femininity standard deviations ($r = .5723$, $p < .001$).

All of these correlations supported the notion that women who were young, poor and black were more anxious than their white counterparts, tended to endorse traditional roles more than white women did, but were more confused and ambivalent in those endorsements, and tended to have less information about the biological aspects of the pregnancy experience.

The tendency to respond in a socially desirable manner was significantly correlated with only two variables in this study. Women who reported few Symptoms Before Pregnancy also had a slight tendency to respond in a socially desirable manner. Apparently it was important to these women to be viewed as having few somatic symptoms on a regular basis. In addition, there was a significant negative correlation between Marlowe-Crowne Social Desirability scores and the Attitude toward Women Scale ($r = -.2615$, $p < .025$). This could be interpreted in either of two ways: (1) women who

endorsed a traditional feminine role also tended to respond in a socially approved manner on other items; or (2) the endorsements of traditional feminine role on the Attitude toward Women Scale were not entirely trustworthy because of the socially desirable response set of the individuals responding. Neither interpretation would have significant effects on the other relationships examined herein.

Factor Analyses

Since the two sets of factors presented in Chapter III were very similar, Matrix 2, the set of factors with the effects of the control variables removed, was examined in depth. These six factors represented different and separate aspects of the pregnancy experience of the women who participated in this study. The factors clearly indicated the importance of the variables measured, the way in which they related to one another, and the amount of variance in the scores of the respondents accounted for by each group of variables.

Factor 1 was clearly an anxiety factor. The only variables which loaded heavily on this factor were A-State and A-Trait. Thus, anxiety was a separate and clearly defined aspect of the gravida's experience, and the relationship between her potential for anxiety under stress and her actual experience of such stress was high. Symptoms During Pregnancy had the next highest loading on Factor 1, -.2781. This was expected based upon the correlations of this variable with A-Trait; however, the factor structure suggested that this relationship between Symptoms During

Pregnancy and A-Trait was not an important one in viewing the overall common variance of the scores.

The second factor was named Sex Role Ambivalence based upon the loadings of the Bem Sex Role Inventory masculinity and feminity standard deviation scores. The presence of this factor suggested that a woman's conflict about her sexual identification, defined operationally by her tendency to rate herself both low and high on masculine and feminine adjectives, was indeed an important part of her pregnancy experience and was separate from her identification as feminine, masculine, or androgynous. The fact that Attitude toward Women standard deviation loaded negligibly on this factor suggested that ambivalence about the social role the gravida adopted was distinct from her sexual identification as defined by Bem (1974).

Factor 3, on the other hand, suggested that the gravida's tendency to rate herself highly on either or both masculine and feminine adjectives, was a distinct tendency in this group of women. The moderate positive correlation between Bem masculinity and femininity listed in Table 4 ($r = .4823$, $p < .001$) suggested that those who rated themselves as highly feminine also tended to rate themselves as highly masculine. However, it seemed unlikely that this correlation alone accounted for this factor. Instead, it appeared likely that the tendency to rate oneself highly, whether masculine, feminine, or both, was a unique characteristic. If it had been possible to categorize this group of women based on

Spence's scoring method, it is likely that the women who contribute to this factor would have fallen into three separate categories: (1) high feminine-low masculine; (2) high feminine-high masculine; and (3) low feminine-high masculine.

Factor 4, named Somatizing and Ambivalence, had loadings over .40 for three variables, Symptoms Before Pregnancy, Symptoms During Pregnancy, and Attitude toward Women standard deviations. The direction of the loadings indicated a strong relationship between tendency to report somatic symptoms and high deviation scores on the Attitude toward Women Scale. Thus, women who reported many symptoms also were conflicted about the social role they felt women should take. A low loading of A-Trait on Factor 4 suggested that women who experienced many symptoms were ambivalent about their sexual roles and were moderately anxious. While it was impossible to hypothesize causal relationships based on these factor loadings, the potential value of exploring in greater depth the relationships among sex role conflict and somatic symptoms was obvious.

The fifth factor was entitled Androgyny. The heaviest loading on this factor was that of Bem androgyny, .8399. The next highest loading was -.4443 for Bem masculinity. The correlation between these two variables in Table 4 is -.4089. Since low scores were indicative of an androgynous identification, then we must assume that women who rated themselves as highly masculine were also androgynous. The smaller correlation of femininity with androgyny in Table 4

(r = .3600) confirmed the relationship; women who tended to rate themselves as highly masculine were more likely to be androgynous than women who rated themselves as highly feminine. This factor might then be interpreted to be an Androgyny and Lack of Rigid Femininity factor.

The sixth factor, Life Changes and Traditionalism, had heavy loadings for three variables and somewhat interesting weaker loadings for two others. Life Change Units, Attitude toward Women, and Attitude toward Women standard deviations defined the factor. Women who experienced many life changes had traditional attitudes toward women's roles, and were ambivalent about those roles. Masculine identification had a small negative loading on this factor, -.2120; and Bem femininity standard deviation score was loaded .2281. This pattern of loadings suggested that women who experienced many life changes were traditional in their role endorsements, tended not to identify themselves as masculine, but were somewhat ambivalent about their feminine sexual identification and traditional social role endorsements. This constellation of variables suggested an interpretation implying lack of control over one's life. The occurrence of many external events which were stressful indicated that a person had little control over those events. Similarly, the traditional feminine social role did not allow women to determine their own position in life or to decide about their own behaviors. Thirdly, the clustering of the ambivalence measures suggested a characterization of a woman who had not taken charge of

life even to the point of making clear decisions about her own preferences.

The appearance of such a clear factor structure among these data suggested the need to further explore the factors identified in future research. While anxiety has already been heavily investigated, sexual identification (including both sex-typing and androgyny), ambivalence about sexual identification, somatizing, ambivalence about social roles, and lack of control over life were identified as significant areas for future research. In this particular group of women, these factors were independent of one another. However, the sample used in this study was small. Attempts to replicate this factor structure, and to explore possible relationships among the factors should involve larger groups of women at different times during pregnancy.

Methodological Considerations in the Study of Pregnancy

In attempting a large scale study of the pregnancy experience it became apparent that certain difficulties existed which must be dealt with in order to gather reliable data and to produce replicable results.

Volunteer participants. In order to obtain access to women who were willing to volunteer their time to participate in a study of this nature, it was necessary to approach private physicians as well as to contact local maternity clinics for indigent patients. It was the experience of this investigator that private obstetricians were not willing to allow access to their patients for the purpose of requesting

participation in this study. Of approximately forty obstetricians contacted, only one was willing to cooperate. After referring three patients for potential participation, he stopped making referrals and was not available to discuss any difficulties which may have arisen. Thus, the private patients who participated in this study were persons the experiementer met through acquaintances in the community. They were approached independently of their physicians and agreed to participate. In all, 17 private patients participated.

On the other hand, county officials were quite willing to allow the investigator access to indigent maternity clinic patients. Of 757 referrals from three Broward County Health Department maternity clinics, 127 eventually participated in the study. Two hundred six were already beyond the first trimester when the referral was received; the investigator was unable to contact 147 prospective participants; another 14 had moved; 123 had no telephones; 29 had given an incorrect telephone number; 5 were screened out because they did not read English; 6 had previous complications; 14 were not pregnant; 9 had miscarried; and 12 had abortions. Only 64 were not interested or too busy to participate in the study.

This large rate of non-participation was carried over into the study itself. As the research was originally designed, the pregnant woman was asked to complete questionnaires during her entire pregnancy. One hundred forty-five

women in the first trimester of pregnancy agreed to do so. Of those, 19 stopped doing the questionnaires for various reasons, 14 women lost the questionnaires before the investigator was able to pick them up, 3 miscarried, and 45 moved. Repeated efforts by letter and telephone were unsuccessful in contacting those who moved. Sixty-four of these women completed the study and are the participants reported herein.

Follow-up. This research was initially intended to relate emotional aspects of the pregnancy experience to complications during the pregnancy, labor and delivery. In order to be sure that the women who did not complete the study were not different from the group who did finish, an informal comparison was made of ten women from each group. The basis of comparison was the number of complications experienced by the women.

Of ten women who did complete the questionnaires, five experienced no complications; four experienced one and one had three. Of the follow-up group, home visits were accomplished with five women. Two of those women had no problems during their pregnancies, two had two complications, and one had one complication. Family members reported that three women who had moved had no difficulties during the pregnancy and delivery. In attempting to visit these women the investigator learned that one was in jail and two had no permanent residences and no telephones. The final two chosen at random were no longer living at their original addresses, their telephones had been disconnected, and there

was no family to contact. To summarize this information, four of the women experienced no difficulties, one had one complication, and two reported two complications; two were unknown. This was not different from the comparison group of ten women who completed the study.

Based on this follow-up information, it was assumed that the major difference in the two groups of women was the transient life styles of the group who did not complete the questionnaires. From the small random sample, it appeared that these groups did not differ in their experiences of complications; however, it might be assumed that a transient life style would lead to a different emotional experience during the pregnancy. Because of this possible difference, future research should attempt to study this transient indigent population as well as more stable women.

Future research. The factors which emerged in this study suggest that there is fertile ground for new research in the area of pregnancy. While most studies to date have focused on outcome of the pregnancy experience, the actual experience has not been adequately examined. In order to determine if there are predictable relationships between emotional factors and complications of pregnancy, more research describing and quantifying the experience of pregnancy at different stages and looking for types of pregnancy experiences, is needed.

APPENDICES

APPENDIX I
BACKGROUND INFORMATION QUESTIONNAIRE

We would like you to give us some objective information about your background. This information will be strictly confidential. Please do not put your name anywhere on the questionnaire. This data will help us to interpret the results of this research project. Please complete every item. If there are any questions you are unclear about, please ask me and I will discuss it with you.

1. Date of birth: Year_____ Month_____ Day_____

2. Race: (circle one) White Negro Other (specify)____

3. Marital Status: (circle one) Single Married
Other (specify)_____

4. Number of children: _____

5. What month of pregnancy are you in? (circle one)

1 2 3 4 5 6 7 8 9

6. Religion: _____
Do you consider yourself an active member of your religion? Yes____ No____

7. Extent of your education

Indicate the highest level of your education by placing an "x" in the box next to the appropriate statement. Example: If you graduated from an accredited high school, check high school graduate. Check only one box.

( ) Less than seven years of school I had less than seven years of school.

( ) Junior high school I had seven to nine years of school.

( ) Partial high school I completed the tenth or eleventh grades but did not graduate from high school.

( ) High school graduate I am a secondary school graduate from a private, public, or trade school.

( ) Partial college training I completed at least one year but not more than three years of college. Training in business schools also comes under this category.

( ) Four year college graduate I completed a four year college or university course leading to a recognized college degree (i.e., AB, BS, BM, BA).

( ) Professional I completed a recognized professional course leading to a graduate degree (i.e., MA, MS, MD, Ph.D., LLB).

8. Your occupation

Please state in detail (a) exactly the kind of work you have done during most of your life, and (b) the kind of organization, if any, that you work(ed) for. For example, distinguish between a sales-clerk in a retail store, a manager of a retail store, and the owner of such a store; and between a very small local business, a large local business, and a store within a chain of retail stores. Please answer these questions to the best of your knowledge. Be as clear and specific as possible. Describe your job, the organization, and where you are in it.

(a) Kind of work: _____

_____

_____

(b) Kind of organization: _____

_____

_____

9. Extent of husband's education

Indicate the highest level of your husband's education by placing an "x" in the box next to the appropriate statement. Example: If your husband graduated from an accredited trade school, check high school graduate. Check only one box.

( ) Less than seven years of school My husband had less than seven years of school.

( ) Junior high school My husband had seven to nine years of school.

( ) Partial high school My husband completed the tenth or eleventh grades but did not graduate from high school.

( ) High school graduate My husband is a secondary school graduate from a private, public, or trade school.

( ) Partial college training My husband completed at least one year but not more than three years of college. Training in business schools also comes under this category.

( ) Four year college graduate My husband completed a four year college or university course leading to a recognized college degree (i.e., AB, BS, BM, BA).

( ) Professional My husband completed a recognized professional course leading to a graduate degree (i.e., MA, MS, MD, Ph.D., LLB).

10. Your husband's occupation

Please state in detail (a) exactly the kind of work your husband has done or did during most of his life, and (b) the kind of organization, if any, that he worked for. For example, distinguish between a sales-clerk in a retail store, a manager of a retail store, and the owner of such a store; and between a very small local business, a large local business, and a store within a chain of retail stores. Please answer these questions to the best of your knowledge. Be as clear and specific as possible. Describe his job, the organization, and where he is in it.

(a) Kind of work: _____

_____

_____

(b) Kind of organization: _____

_____

_____

The following are about your experience with pregnancy. Please answer them as accurately as you can.

11. How many times have you become pregnant in the past?___

12. Have you ever had a spontaneous abortion (a miscarriage)?

Yes____ No____

13. Have you ever had a multiple birth (twins, triplets)?

Yes____ No____

14. Is your blood type RH positive__ or RH negative__? (check one)

15. What do you expect your pregnancy and childbirth experience to be like? Do you plan to take classes of any sort or use natural childbirth? (Please answer in your own words.)

16. Do you have any plans for the care of your baby once he or she is born? Have you considered breast or bottle feeding? Will you continue to or begin to work?

17. What do you imagine will be some things that you will need help with during your pregnancy and after the baby is born?

APPENDIX II
PREGNANCY INFORMATION QUESTIONNAIRE

Please answer the questions below according to your knowledge about the pregnancy experience. If the statement is TRUE or MOSTLY TRUE, circle T, if it is FALSE or MOSTLY FALSE, circle F.

T F 1. Conception occurs in the uterus (womb).

T F 2. Bleeding in early pregnancy is one certain sign of miscarriage.

T F 3. Intercourse during pregnancy does not harm the baby.

T F 4. In labor, the pelvic bones separate to allow the baby to pass through the birth canal.

T F 5. The cervix is the same as the vagina.

T F 6. Extreme or rapid weight gain may be a sign of a problem during pregnancy.

T F 7. Anesthesia which puts the mother to sleep also puts the baby to sleep.

T F 8. Falls during pregnancy are extremely dangerous because the baby is somewhat unprotected in the uterus.

T F 9. The baby gets nourished through the placenta.

T F 10. Breast feeding a child is often related to weight gain after pregnancy.

T F 11. Long labors (24-48 hours) occur in about 1 of 10 normal pregnancies.

T F 12. The discomfort of labor is due to the opening of the cervix.

T F 13. Tight clothing, especially around the uterus, impedes the baby's air supply and should be avoided.

T F 14. Labor which is medically induced is more uncomfortable than natural labor.

T F 15. The contractions which women have during the last months of pregnancy (Braxton-Hicks contractions) are effective in preparing the uterus for delivery.

T F 16. All anesthesia which affects the mother also affects the baby.

T F 17. Labor is the baby pushing itself out of the womb or uterus.

T F 18. Even in a first pregnancy, if the mother has RH negative blood and her husband is positive, it is dangerous to the baby.

T F 19. True labor contractions may occur at regular intervals (for example, 3 contractions which are 12 minutes apart) or at irregular intervals (for example, 2 contractions which are 12 minutes apart and the next one occuring after 15 minutes).

T F 20. Before real labor begins, the bag of waters has to break.

T F 21. If the bag of waters breaks well before the baby is delivered, the birth is a somewhat more uncomfortable dry birth.

T F 22. Deliveries are often so uncomplicated that the doctor is really there to "catch" the baby.

T F 23. The usual or average duration of a First labor is (circle one answer)
1. 2 - 12 hours
2. 6 - 18 hours
3. 10 - 24 hours
4. 14 - 30 hours

T F 24. When the baby is in the breech position, it is coming head first.

T F 25. Women with small breasts may not have enough milk to breast feed their baby.

APPENDIX III
SOMATIC SYMPTOMS LIST

Will you please read the following list of health problems, and circle the one which best describes how often you have had the complaint before you became pregnant, and the one indicating how often it has occurred since you became pregnant. Remember that the complaint applies to your present pregnancy only.

Please answer every statement. There are no right or wrong answers and none that are better than others. If you are not sure, or if no answer seems to fit exactly what you want to say, circle the one that comes closest to what you have in mind.

A Often or Always S Sometimes R Rarely N Never

		BEFORE PREGNANCY	DURING THIS PREGNANCY
1.	Upset stomach.....	A S R N	A S R N
2.	Indigestion or heartburn.....	A S R N	A S R N
3.	Stomach cramps.....	A S R N	A S R N
4.	Nausea (feeling sick to the stomach)....	A S R N	A S R N
5.	Vomiting.....	A S R N	A S R N
6.	A bloated feeling after eating.....	A S R N	A S R N
7.	Tight or knotted feelings in the pit of the stomach.....	A S R N	A S R N
8.	Loose bowel movements or diarrhea.....	A S R N	A S R N
9.	Constipation.....	A S R N	A S R N
10.	Loss of appetite.....	A S R N	A S R N

		BEFORE PREGNANCY	DURING THIS PREGNANCY
11.	Excessive hunger.....	A S R N	A S R N
12.	Cravings for special foods.....	A S R N	A S R N
13.	Tendency to gain weight easily.....	A S R N	A S R N
14.	Tendency to lose weight easily.....	A S R N	A S R N
15.	Nosebleeds.....	A S R N	A S R N
16.	Colds.....	A S R N	A S R N
17.	Stuffiness in the nose.....	A S R N	A S R N
18.	"Plugged or full feeling in my ears".....	A S R N	A S R N
19.	Feeling of pressure or fullness in the head.....	A S R N	A S R N
20.	Headache.....	A S R N	A S R N
21.	Spells of feeling faint.....	A S R N	A S R N
22.	Fainting.....	A S R N	A S R N
23.	Dizziness or light-headedness.....	A S R N	A S R N
24.	Sleepiness during the day.....	A S R N	A S R N
25.	Shortness of breath when doing housework.....	A S R N	A S R N
26.	Shortness of breath when lying down.....	A S R N	A S R N
27.	Pounding or thumping of the heart.....	A S R N	A S R N

		BEFORE PREGNANCY	DURING THIS PREGNANCY
28.	Sudden spells of fatigue.....	A S R N	A S R N
29.	Hand trembling.....	A S R N	A S R N
30.	Numbness or tingling of the hands and feet.....	A S R N	A S R N
31.	Cold hands or feet.....	A S R N	A S R N
32.	Throbbing feelings in the stomach or abdomen.....	A S R N	A S R N
33.	Hemmorrhoids (piles).....	A S R N	A S R N
34.	Varicose veins (large veins in the legs).....	A S R N	A S R N
35.	Swelling of feet or legs.....	A S R N	A S R N
36.	Swelling of hands or face.....	A S R N	A S R N
37.	Leg cramps.....	A S R N	A S R N
38.	Weakness or tiredness in legs.....	A S R N	A S R N
39.	Backache.....	A S R N	A S R N
40.	Achiness or tightness through neck and shoulders.....	A S R N	A S R N
41.	A pulling feeling or "stitch" in one side.....	A S R N	A S R N
42.	Heavy, aching feelings low down in the abdomen or in the upper thighs....	A S R N	A S R N

		BEFORE PREGNANCY	DURING THIS PREGNANCY
43.	Soreness under the ribs (on one or both sides).....	A S R N	A S R N
44.	Pains down the back of one hip and leg.....	A S R N	A S R N
45.	Considerable tenderness of the breasts...	A S R N	A S R N
46.	Vaginal pain.....	A S R N	A S R N
47.	Throbbing feelings in the vagina.....	A S R N	A S R N
48.	Vaginal discharge.....	A S R N	A S R N
49.	Itching or burning of the vagina.....	A S R N	A S R N
50.	Pain during sexual relations.....	A S R N	A S R N
51.	Almost uncontrollable urge to urinate.....	A S R N	A S R N
52.	Loss of urine when coughing or sneezing.....	A S R N	A S R N
53.	Urge to urinate during the night.....	A S R N	A S R N
54.	Itching of the skin.....	A S R N	A S R N
55.	Skin rashes.....	A S R N	A S R N
56.	Blushing or flushing of the face.....	A S R N	A S R N
57.	Hot or cold spells.....	A S R N	A S R N

	BEFORE PREGNANCY	DURING THIS PREGNANCY
58. Blurred vision.....	A S R N	A S R N
59. Spots before the eyes.....	A S R N	A S R N

APPENDIX IV
MARLOWE-CROWNE SOCIAL DESIRABILITY SCALE

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is true or false as it pertains to you personally.

1. Before voting I thoroughly investigate the qualifications of all the candidates.
2. I never hesitate to go out of my way to help someone in trouble.
3. It is sometimes hard for me to go on with my work if I am not encouraged.
4. I have never intensely disliked anyone.
5. On occasion I have had doubts about my ability to succeed in life.
6. I sometimes feel resentful when I don't get my way.
7. I am always careful about my manner of dress.
8. My table manners at home are as good as when I eat out in a restaurant.
9. If I could get into a movie without paying and be sure I was not seen, I would probably do it.
10. On a few occasions, I have given up doing something because I thought too little of my ability.
11. I like to gossip at times.
12. There have been times when I felt like rebelling against people in authority even though I knew they were right.
13. No matter who I'm talking to, I'm always a good listener.
14. I can remember "playing sick" to get out of something.
15. There have been occasions when I took advantage of someone.
16. I'm always willing to admit it when I make a mistake.
17. I always try to practice what I preach.
18. I don't find it particularly difficult to get along with loud mouthed, obnoxious people.
19. I sometimes try to get even rather than forgive and forget.

20. When I don't know something, I don't at all mind admitting it.

21. I am always courteous, even to people who are disagreeable.

22. At times I have really insisted on having things my own way.

23. There have been occasions when I felt like smashing things.

24. I would never think of letting someone else be punished for my wrongdoings.

25. I never resent being asked to return a favor.

26. I have never been irked when people expressed ideas very different from my own.

27. I never make a long trip without checking the safety of my car.

28. There have been times when I was quite jealous of the good fortune of others.

29. I have almost never felt the urge to tell someone off.

30. I am sometimes irritated by people who ask favors of me.

31. I have never felt that I was punished without cause.

32. I sometimes think when people have a misfortune they only got what they deserved.

33. I have never deliberately said something that hurt someone's feelings.

APPENDIX V
SOCIAL READJUSTMENT RATING SCALE

Rank	Life Event	Mean Value
1	Death of spouse	100
2	Divorce	73
3	Marital separation	65
4	Jail term	63
5	Death of close family member	63
6	Personal injury of illness	53
7	Marriage	50
8	Fired at work	47
9	Marital reconciliation	45
10	Retirement	45
11	Change in health of family member	44
12	Pregnancy	40
13	Sex difficulties	39
14	Gain of new family member	39
15	Business readjustment	39
16	Change in financial state	38
17	Death of close friend	37
18	Change to different line of work	36
19	Change in number of arguments with spouse	35
20	Mortgage over $10,000	31
21	Foreclosure of mortgage or loan	30
22	Change in responsibilities at work	29
23	Son or daughter leaving home	29
24	Trouble with in-laws	29
25	Outstanding personal achievement	28
26	Wife begins or stops work	26
27	Begin or end school	26
28	Change in living conditions	25
29	Revision of personal habits	24
30	Trouble with boss	23
31	Change in work hours or conditions	20
32	Change in residence	20
33	Change in schools	20
34	Change in recreation	19
35	Change in church activities	19
36	Change in social activities	18
37	Mortgage or loan less than $10,000	17
38	Change in sleeping habits	16
39	Change in number of family get-togethers	15
40	Change in eating habits	15
41	Vacation	13
42	Christmas	12
43	Minor violations of the law	11

APPENDIX VI
BEM SEX ROLE INVENTORY

Name:_____ Occupation:_____
(Please print)

Sex:_____ Age:_____ Married__ Single__ Divorced__

On the following pages you will be shown a large number of adjectives that can describe your personality. We would like you to use them to describe yourself. That is, we would like you to mark, on a scale from 1 to 7, how well they fit you. Please do not leave any unmarked.

Example: sly

Mark a 1 if you are NEVER OR ALMOST NEVER sly.

Mark a 2 if you are USUALLY NOT sly.

Mark a 3 if you are SOMETIMES BUT INFREQUENTLY sly.

Mark a 4 if you are OCCASIONALLY sly.

Mark a 5 if you are OFTEN sly.

Mark a 6 if you are USUALLY sly.

Mark a 7 if you are ALWAYS OR ALMOST ALWAYS sly.

Thus, if you feel it is sometimes but infrequently true that you are "sly," never or almost never true that you are "malicious," always or almost always true that you are "irresponsible," and often true that you are "carefree," then you would rate these characteristics as follows:

sly
malicious
irresponsible
carefree

Self reliant	
Yielding	
Helpful	
Defends own beliefs	
Cheerful	
Moody	
Independent	
Shy	
Conscientious	
Athletic	

Affectionate	
Theatrical	
Assertive	
Flatterable	
Happy	
Strong personality	
Loyal	
Unpredictable	
Forceful	
Feminine	

Reliable	
Analytical	
Sympathetic	
Jealous	
Has leadership abilities	
Sensitive to the needs of others	
Truthful	
Willing to take risks	
Understanding	
Secretive	

Makes decisions easily	
Compassionate	
Sincere	
Self-sufficient	
Eager to soothe hurt feelings	
Conceited	
Dominant	
Soft-spoken	
Likable	
Masculine	

Warm	
Solemn	
Willing to take a stand	
Tender	
Friendly	
Aggressive	
Gullible	
Inefficient	
Acts as a leader	
Childlike	

Adaptable	
Individualistic	
Does not use harsh language	
Unsystematic	
Competitive	
Loves children	
Tactful	
Ambitious	
Gentle	
Conventional	

APPENDIX VII
ATTITUDE TOWARD WOMEN SCALE

The statements listed below describe attitudes toward the role of women in society which different people have. There are no right or wrong answers, only opinions. You are asked to express your feelings about each statement by indicating whether you (A) Agree strongly, (B) Agree mildly, (C) Disagree mildly, or (D) Disagree strongly. Please indicate your opinion by marking the column on the answer sheet which corresponds to the alternative which best describes your personal attitude. Please respond to every item.

(A) Agree Strongly (B) Agree Mildly (C) Disagree Mildly (D) Disagree Strongly

1. Women have an obligation to be faithful to their husbands.

2. Swearing and obscenity is more repulsive in the speech of a woman than a man.

3. The satisfaction of her husband's sexual desires is a fundamental obligation of every wife.

4. Divorced men should help support their children but should not be required to pay alimony if their wives are capable of working.

5. Under ordinary circumstances, men should be expected to pay all the expenses while they're out on a date.

6. Women should take increasing responsibility for leadership in solving the intellectual and social problems of the day.

7. It is all right for wives to have an occasional, casual, extramarital affair.

8. Special attentions like standing up for a woman who comes into a room or giving her a seat on a crowded bus are outmoded and should be discontinued.

9. Vocational and professional schools should admit the best qualified students, independent of sex.

10. Both husband and wife should be allowed the same grounds for divorce.

11. Telling dirty jokes should be mostly a masculine prerogative.

12. Husbands and wives should be equal partners in planning the family budget.

13. Men should continue to show courtesies to women such as holding open the door or helping them on with their coats.

14. Women should claim alimony not as persons incapable of self-support but only when there are children to provide for or when the burden of starting life anew after the divorce is obviously heavier for the wife.

15. Intoxication among women is worse than intoxication among men.

16. The initiative in dating should come from the man.

17. Under modern economic conditions with women being active outside the home, men should share in household tasks such as washing dishes and doing the laundry.

18. It is insulting to women to have the "obey" clause remain in the marriage service.

19. There should be a strict merit system in job appointment and promotion without regard to sex.

20. A woman should be as free as a man to propose marriage.

21. Parental authority and responsibility for discipline of the children should be equally divided between husband and wife.

22. Women should worry less about their rights and more about becoming good wives and mothers.

23. Women earning as much as their dates should bear equally the expense when they go out together.

24. Women should assume their rightful place in business and all the professions along with men.

25. A woman should not expect to go to exactly the same places or to have quite the same freedom of action as a man.

26. Sons in a family should be given more encouragement to go to college than daughters.

27. It is ridiculous for a woman to run a locomotive and for a man to darn socks.

28. It is childish for a woman to assert herself by retaining her maiden name after marriage.

29. Society should regard the services rendered by the women workers as valuable as those of men.

30. It is only fair that male workers should receive more pay than women even for identical work.

31. In general, the father should have greater authority than the mother in the bringing up of children.

32. Women should be encouraged not to become sexually intimate with anyone before marriage, even their fiances.

33. Women should demand money for household and personal expenses as a right rather than as a gift.

34. The husband should not be favored by law over the wife in the disposal of family property or income.

35. Wifely submission is an outworn virtue.

36. There are some professions and types of businesses that are more suitable for men than women.

37. Women should be concerned with their duties of child-rearing and housetending, rather than with desires for professional and business careers.

38. The intellectual leadership of a community should be largely in the hands of men.

39. A wife should make every effort to minimize irritation and inconvenience to the male head of the family.

40. There should be no greater barrier to an unmarried woman having sex with a casual acquaintance than having dinner with him.

41. Economic and social freedom is worth far more to women than acceptance of the ideal of femininity which has been set by men.

42. Women should take the passive role in courtship.

43. On the average, women should be regarded as less capable of contribution to economic production than are men.

44. The intellectual equality of woman with man is perfectly obvious.

45. Women should have full control of their persons and give or withhold sex intimacy as they choose.

46. The husband has in general no obligation to inform his wife of his financial plans.

47. There are many jobs in which men should be given preference over women in being hired or promoted.

48. Women with children should not work outside the home if they don't have to financially.

49. Women should be given equal opportunity with men for apprenticeship in the various trades.

50. The relative amounts of time and energy to be devoted to household duties on the one hand and to a career on the other should be determined by personal desires and interests rather than by sex.

51. As head of the household, the husband should have more responsibility for the family's financial plans than his wife.

52. If both husband and wife agree that sexual fidelity isn't important, there's no reason why both shouldn't have extramarital affairs if they want to.

53. The husband should be regarded as the legal representative of the family group in all matters of law.

54. The modern girl is entitled to the same freedom from regulation and control that is given to the modern boy.

55. Most women need and want the kind of protection and support that men have traditionally given them.

APPENDIX VIII
LETTER TO PROSPECTIVE SUBJECTS

Dear Prospective Mother:

You are reading this letter in the office of your obstetrician because he is interested in the research I am doing and thought you might be willing to participate. I am a graduate student in Psychology at the University of Florida and an Intern at the Henderson Clinic in Fort Lauderdale, and I am doing research on pregnancy.

The purpose of this study is to look at some of your feelings and attitudes about being a woman and about being pregnant. We are interested in the kinds of things you have experienced and the way you feel about them.

The questionnaires we would like you to answer can be filled out at your own rate of speed in your own home. They will take a few hours of your time spread throughout your entire pregnancy. All the information you give us will be completely confidential, so we hope you will be as honest about your feelings as possible.

Since we are also interested in the medical aspects of your pregnancy and delivery, we would like to have your doctor fill in a form after your child's birth which will tell us the length of your labor and any difficulties you might have experienced.

If you have no objections to the conditions of the study which are stated above, and if you agree to participate, please sign the attached sheet and obtain a Background Information Questionnaire from the receptionist. I will call you to set up an appointment to explain more about the study and to give you instructions for each questionnaire.

I sincerely hope that you will be able to take part in this study. I believe that research of this sort can eventually be of great help to women who are pregnant. I hope you will consider these other persons, as well as yourself, when you decide whether or not to participate.

Thank you for your time.

Sincerely,

Katherine E. Peres

APPENDIX IX
LETTER TO PHYSICIANS

330 S.W. 27th Avenue
Fort Lauderdale, FL 33312
October 14, 1975

Dear Doctor

I am presently a doctoral candidate in Clinical Psychology at the University of Florida, and have just begun my internship at the Henderson Clinic of Broward County. During my internship year, I would like to collect my dissertation data so that I might receive my degree sometime in the next two years.

My dissertation proposal is a study designed to examine some of the emotional and psychological precursors of complications of pregnancy, labor and delivery. I will be measuring demographic variables such as age, race, and parity, as well as the psychological factors of feminine identification, life stress, attitude toward the pregnancy, and anxiety. My supervisors and I believe that a careful study of this wide range of variables will allow us to examine the complex relationship to pregnancy outcome. I believe that my proposal goes somewhat farther than previous efforts in the elucidation of the many variables at hand, but to be successful I will need the cooperation of a number of local obstetricians (though without excessive time demands) and permission to approach their patients with my proposal.

I would very much like to have the opportunity to discuss my research with you, either in person or on the telephone, and to send you a more detailed description of the proposal. If you believe that you might be interested in participating in what my supervisors and I believe to be a significant research project, please contact me by letter or telephone at:

Henderson Clinic
330 S.W. 27th Avenue
Fort Lauderdale
791-4300
from 8 a.m. to 5 p.m.

251-174th Street, Apt. 2103
Miami Beach, Florida 33160
931-7738
after 6 p.m.

I hope to hear from you soon.

Sincerely,

Katherine E. Peres

APPENDIX X
STRUCTURED INTERVIEW PROTOCOL

I. Brief introduction of self.

II. Introduction to study. Complete explanation.

"The purpose of this study is to record the way you experience your pregnancy. The questionnaires pertain to your feelings--physical and emotional--your attitudes, and your ways of dealing with the world. Some are related directly to your pregnancy, some are about your experience of life in general. All taken together will give us some idea of the way you personally have experienced your pregnancy. The questionnaires may take about five hours spread over the next few months. They can be filled out at your own rate of speed in your home. All the information you give us will be completely confidential, so we hope you will be as honest about your feelings as possible. Your name will not be written on anything but this card and the release forms. Everything will be coded by number. After all your data are in, this card will be destroyed to make sure that you remain anonymous."

"Since we are also interested in some of the medical aspects of your pregnancy and delivery, we will need your permission to obtain your hospital record after delivery. From this record we will complete a checklist about such things as the length of your labor, the condition of the baby at birth, any medications you received, and other medical aspects of your experience."

"If you are sure that you would like to participate, please sign these release forms. This one states that I have told you what the study is about and that you are free to discontinue at any time. It is just an agreement between you and the Experimenter. This other form is what we will use to obtain your medical data. It will be presented at the hospital records room (or to your doctor) in order to complete the checklist I talked about."

"Now we need to set up a calendar of your pregnancy and determine when each questionnaire should be done. When was your last period?."....."We'll calculate an approximate due date by adding seven days to the date and substracting three months. That puts you due on..... Now I'll count backward from that date to spread the questionnaires out. If you find that your due date as computed by the doctor when you go to the clinic is much different from the one we figured out, please call Kathy and let her know so she can compute when the questionnaires can be done."

"The dates for each of these questionnaires are approximate. As long as you can do them within a week of the date written on them, that will be fine."

"All the questionnaires are aimed at discovering your feelings and beliefs. There are no right or wrong answers, only opinions. Please give as honest an answer as you can based on your experience."

"The instructions for filling out each questionnaire are at the top of each one. Most are printed on both the front and back of the page. Don't forget to do the backs. If you have any trouble reading the print or understanding the questions, feel free to call Kathy. Her phone number is on the back of this calendar. Please answer as many of the questions as possible. (IF THE GIRL IS SINGLE: Are you single? "Yes" There are some questions here about your husband. Are you still seeing the father of the baby? Try to answer the questions if you possibly can.)"

"I'll be calling you to remind you when it is time to do the next set of questionnaires. When you finish a group of questionnaires, you can turn them in at the clinic, or Kathy can pick them up from you after you deliver."

"If you have no further questions, we can stop now. If you think of anything else you would like to know, don't hesitate to call Kathy or me. We'll be glad to answer your questions if we can."

APPENDIX XI
RELIABILITY DATA OF MEASURES EMPLOYED

Test	Mean	Standard Deviation	Test-Retest Reliability	Internal Consistency
1. Pregnancy Information Questionnaire(5)[a]	13.89	.63	---	---
2. Marlowe-Crowne Social Desirability Scale (6)	13.72	5.78	.89	.88
3. Social Readjustment Rating Scale (7)	---	---	.74	.95
4. Somatic Symptoms List from H.I.P. Pregnancy Questionnaire (8,9)	---	---	.67	.93
5. State-Trait Anxiety Inventory				
A-State (10)	37.57	11.76	.27	.92
A-Trait (11)	41.61	11.29	.76	.92
6. Attitudes toward Women Scale (12)	98.21	23.16	---	---
7. Bem Sex Role Inventory				
Masculinity (14)	4.55	.75	.90	.86
Femininity (15)	5.08	.58	.90	.80
Androgyny difference score (F-M)	.53	.97	.93	.85
Androgyny t-ratio	1.23	2.42	---	---

[a]The number in parentheses refers to the variable number and names listed in Table 1.

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BIOGRAPHICAL SKETCH

Katherine E. Peres was born September 23, 1950, in New Orleans, Louisiana. She attended parochial schools and graduated valedictorian from St. Mary's Dominican High School in May, 1968. The following fall she entered Newcomb College of Tulane University in New Orleans, where she pursued majors in psychology and philosophy. She received a Bachelor of Science degree graduating magna cum laude with honors in psychology in May, 1972.

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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Jacquelin R. Goldman, Chairperson
Professor of Clinical Psychology

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Franz R. Epting, Co-Chairperson
Associate Professor of Psychology

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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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August 1978

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