# A COMPARISON OF HOSPITALIZED AND NON-HOSPITALIZED HIGH-RISK ANTEPARTUM PATIENTS IN TERMS OF PSYCHOLOGICAL STRESS REACTIONS

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We hereby recommend that the thesis prepared under our supervision by Edna M. Pearson Robinson entitled "A Comparison of Hospitalized and Non-Hospitalized High-Risk Antepartum Patients in Terms of Psychological Stress"

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# CHAPTER 1

## INTRODUCTION

Pregnancy is a life crisis of great impact, and like other life crises, it creates a delicate balance between positive and negative experiences, between growth and regression. As Colman and Colman (1971) report:

> Every moment of joy, anticipation, creativity, and exhilaration is likely to be balanced by one of anxiety, ambivalence, loss, and fear. Although there are emotional problems in pregnancy, they are rooted in the normal reactions to change and development. But it can be difficult to see them as normal when you are in the middle of them. (p. 144)

Although modern medical and technological advances have succeeded in decreasing the mortality rate of childbirth, there still exist, even under the most normal conditions, pain and bleeding during the delivery of a child. These conditions usually characterize morbid states. Therefore, the pregnant woman may have fear of bodily mutilation, inability to preserve body intactness and a deep seated fear of death because of these assumingly "normal" childbirth characteristics.

There may exist a new sense of vulnerability during pregnancy, particularly to loss, rejection, and damage by accident or mishap. There may also be a pervasive sense of potential threat and danger. As a result, the pregnant

woman may become more protective of her body, the protective harbor for her baby. However, for a woman who has a significantly high chance of morbidity or mortality, as in a high-risk pregnancy, there can be an even greater concern for self-welfare as well as the welfare of the unborn child.

The high-risk antepartum patient is often hospitalized during her pregnancy for control and management of her physical disorders. The patient, already in the midst of multiple crises, is particularly susceptible to environmental influences. It is this susceptibility that makes her more dependent than usual on her personal relationships. Hospitalization not only can separate her from these relationships, but also can add the additional strain of confirming fears about her condition of pregnancy and that of her unborn child.

Pregnancy, in the psychological sense, is a time when a woman is more open to her inner processes, her dreams and her fantasies. The diagnosis of high-risk pregnancy and family separation imposed by hospitalization can serve to increase the pregnant woman's anxiety, tension, and fears. These feelings can result in depression and anger projected on herself or others. Such psychological stress reactions can jeopardize an already sensitive period of life.

## Statement of Problem

Hospitalization for most people is a stressor, but for the pregnant high-risk patient it is tangible proof that her fears are justified: that the state or quality of life for herself and her unborn child may be in jeopardy. If nursing is to provide care for the "total patient," then nurses caring for the hospitalized high-risk antepartum patient need to be aware of, and responsive to, the psychological needs of this patient. Therefore, it is of value to compare normal antepartum patients, nonhospitalized high-risk antepartum patients, and hospitalized high-risk antepartum patients in terms of their stress. Such information may assist in planning nursing care for all types of antepartum patients, but would probably have particular importance for the high-risk antepartum patient.

## Purpose

The purpose of this study was to identify stress reactions of three groups of antepartum patients. Specifically, the study was designed to:

1. Determine the degree of stress experienced by three groups of antepartum patients: normal antepartum patients, nonhospitalized high-risk antepartum patients, and hospitalized high-risk antepartum patients.

2. Compare the three groups of antepartum patients in terms of psychological stress.

## Background and Significance

Janis (1958) referred to psychological stress as characterized by changes in the environment which typically induce a high degree of emotional tension and interfere with the normal patterns of response. Additionally, Rapoport (1967) stated that stress is assumed to have pathological potential, that it is a burden or load under which a person either "survives or cracks" (p. 23).

Psychological problems occurring during pregnancy involve whole families with consequences such as marital tension, mothering breakdown, and developmental failure in the child. Several authors have reported that the majority of these families' troubles can be traced to neglected stresses associated with pregnancy (Colman & Colman, 1971; Ferreira, 1969; Howells, 1972). Further, they have recognized the importance of emotional stress and individual personality types in the development of toxemia of pregnancy. Howells (1972) also suggested that the elimination of all factors which increase tension in the patient's environment might serve to decrease the severity of the toxemic disease.

Several authors have related psychological stress during pregnancy to various types of birth defects, spontaneous abortions, and miscarriages. Sontag (1950) reported that the children born to anxious neurotic mothers are smaller and more active than those of placid mothers. Also Stott (1957) found that emotional stress during the second and third months of pregnancy increases the risk of Down's syndrome. Severe vomiting throughout pregnancy, known as hyperemesis gravidarum, as well as spontaneous abortion or miscarriage, are frequently linked to emotional stress during pregnancy (Colman & Colman, 1971; Ferreira, 1969; Howells, 1972). Ferreira (1969), after reviewing investigative studies of maternal psychological influences on the fetus, concluded that:

> The mother's negative emotions if not always sufficient to destroy the fetus, may conceivably interfere with its normal development and lead or predispose to congenital malformations or perhaps other abnormalities of a more subtle and less obvious nature. (p. 134)

Hospitalization, an inherently unnatural event, is described by Taylor (1970) as stress-producing for most individuals. However, for the antepartum patient hospitalization is even more stressful since it requires not only separation from her family, but also involves indefinite confinement in an institutional setting. Unfamiliarity with the hospital situation alone is a distressing concern,

and the pregnant woman also must face the threat of disease and the possible loss of the child she carries.

The high-risk antepartum patient is often hospitalized until the termination of her pregnancy. This can involve a month or longer. Neal, Cohen, and Cooper (1974) reported that prolonged hospitalization can produce behavioral change in an individual. They stated that the talkative patient often becomes withdrawn and interacts less with the hospital staff and with her family; she becomes less active in self-care and develops passive-aggressive behavior. The independent patient may become dependent, the optimistic patient may become a pessimist. The authors attribute these reactions to fear of death, sensory disturbances, deprivation of affection, and lack of attention to the patient's basic personality needs.

Whatever the cause, psychological stress in the pregnant patient has been demonstrated to be a detriment--to the patient, to her family, and to the child that she carries. Since pregnancy itself is a stressful time, it seems likely that the high-risk pregnant woman may have even greater stress. Therefore, it is essential that the degree of stress the patient experiences be determined so that her psychological needs can be met.

## Theoretical Framework

The General System Theory (Riehl & Roy, 1974, p. 32) was used as the theoretical framework for the study. The systems approach is concerned with the relationship of parts to one another to form a purposeful, goal directed network. Man is viewed by this theory as an integrated, unified whole; interacting and reacting according to his biological, psychological, sociological, and developmental make-up in such a way that everything is either a part of, or in some way influenced by everything else (Brown & Fowler, 1971; Riehl & Roy, 1974).

All living systems are open systems which means they are in contact with their environment, receiving input and giving output across their boundaries. Because of the imperfect integration of internal components, the system of man can be affected by external disturbances resulting in varying degrees of tension. The amount of tension the disturbance will cause and man's reactions to it is determined by his perception of the disturbance. This perception includes: (1) interpersonal factors such as family relations, cultural factors, and other personal involvements in his life; (2) extrapersonal factors such as finances; and (3) intrapersonal elements such as his life style, self-image, coping patterns, and anxiety proneness. If the disturbance is perceived by man's system as a disruption,

adaptational changes are necessary, or the dysfunction engendered will be manifested in unusual behavior and/or physical symptoms (Neuman, 1974).

The high-risk pregnant patient, in accordance with the General System Theory, is a "total person": a physiological, sociological, psychological, and developmental system that has been threatened with the possibility of disease or death to herself and/or her unborn child. Her adaptation to this threat depends on her perception of the event. She perceives the threat according to the integration of extrapersonal, intrapersonal, and interpersonal factors. If the threat is perceived by the patient as a disruption, her reactions may result in physical as well as mental maladaptive changes.

## Assumptions

For the purpose of this study the following assumptions were made:

1. A threat to the state and quality of life is exhibited by affective changes in an individual.
2. Psychological stress that the individual experiences can be measured in terms of changes in her moods and feelings.
3. Respondents answered the questionnaire honestly and with an appropriate degree of expertise.

## Definition of Terms

For the purpose of this study, the following definitions were formulated.

1. High-Risk Antepartum: the pregnant woman and/or fetus with increased chance of morbidity or mortality.
2. Hospitalized High-Risk Antepartum Patient: the pregnant woman hospitalized for any physical disease entity that threatens her life or well-being, or that of her unborn child.
3. Nonhospitalized High-Risk Antepartum Patient: the pregnant woman diagnosed as being high-risk, but obstetrically managed on an out-patient basis.
4. Normal Antepartum Patient: the pregnant woman without a diagnosis of high-risk and without hospitalization during the current pregnancy.
5. Psychological Stress Reaction: negative changes in moods and feelings as measured by the Multiple Affect Adjective Check List (MAACL) in terms of anxiety, depression, and hostility.
6. Trait Affect: level of moods and feelings over an extended or indefinite period of time, as measured by the In General Form of the MAACL.
7. State Affect: changes in moods and feelings as the result of a situation, as measured by the Today Form of the MAACL.

## Limitations

Certain variables might have influenced the findings of this study, however it was beyond the scope of this investigation to control these variables.

1. Sources of variables due to subjects' ages, socioeconomic status, race, education, and cultural background, and previous pregnancies resulting in either live or stillbirth, were not considered.
2. Past high-risk pregnancies that required hospitalization were not controlled.

## Delimitations

In an attempt to control the variables of gestational weeks of pregnancy, marital status, and dissimilarities in obstetrical care, the study had the following delimitations:

1. The gestation of pregnancy was longer than 28 weeks for all subjects.
2. The marital status of pregnant women may have influenced feelings about their pregnancy. Therefore, all subjects participating in this study were married and living with their spouses.
3. The amount of information and instruction received by a pregnant woman can influence her reactions to a stressor. Therefore, hospitalized and nonhospitalized subjects were under the care of the same group of obstetricians.

All subjects received antepartum instructions from the same education department of the obstetrical clinic.

## Summary

The study is designed to determine the degree of psychological stress exhibited by normal antepartum patients, nonhospitalized high-risk antepartum patients, and hospitalized high-risk antepartum patients, and to compare the groups in terms of these stress reactions. The importance of the study was based upon findings that increased psychological stress in pregnancy can be a detriment to the woman and her family, as well as to the child she carries. Because pregnancy itself is a stressful situation, a diagnosis of high-risk pregnancy and the consequences of hospitalization can have an even greater impact on a woman already in a sensitive period of life. A study identifying stress reactions of pregnant patients might assist nurses in planning care for these patients.

# CHAPTER 2

## REVIEW OF THE LITERATURE

In this chapter, the literature is reviewed and reported. Pertinent points of discussion are: (1) psychological stress in pregnancy, (2) pregnancy complications and maternal stress, (3) stress of hospitalization, and (4) the emotional effect of hospitalization on the high-risk antepartum patient.

### Psychological Stress in Pregnancy

Investigators reporting on the emotional aspects of normal pregnancy reveal a common demoninator: psychological stress. Cassidy (1974) reported that stress occurs in all pregnant women, regardless of their physical, emotional, or economic state. She attributed this stress to a basic fear of the mysteries and trauma of labor and delivery and to feelings of helplessness. Ballou (1978) described the psychological symptomatology of pregnancy as feelings of anxiety, depression, and frequent mood swings.

Two of these conditions, anxiety and depression, were among the experiences Colman and Colman (1971) found to be shared by women in a prenatal discussion group at the University of California. Participants in this group also

revealed difficulty in interpersonal relationships, particularly with their husbands; feelings of vulnerability to dangers, both internal and external; and changes in self-concepts. These self-concept changes and feelings of vulnerability were not constant. The authors described shifts in the woman's moods and feelings throughout pregnancy that occur quite drastically and often unconsciously.

Cassidy (1974) reported on the unconscious nature of pregnancy fears. She described these fears as being related to misinformation received from the woman's mother, sister, or female friends regarding their experiences in childbirth. The fears may also be related to environmental factors such as previous interactions with mothers and the children of these mothers (Cassidy, 1974). Cassidy further reported that because these fears exist at an unconscious level, they may be "doubly threatening" to the woman, resulting in severe feelings of anxiety and depression.

Rubin (1976) described the changes in the woman's appearance and body function that heighten her sensory perceptivity, and tactile and kinesthic sensation. The author stated that few of these sensory experiences can be shared with others; therefore, the result is a heightened sense of difference, and of estrangement from those in the world around the pregnant woman. Rubin referred to this sensory awareness as a "turning inward" of attention energy,

the woman having an acute openness to her inner world. This feeling of estrangement from others worries most pregnant women according to Rubin. They worry that they will lose their achieved interpersonal relationships and forfeit their sense of competence and productivity in the real world.

The significance of maintaining interpersonal relationships for the pregnant woman was emphasized by Benedek (1970). She described the importance of a secure marriage, the considerate affection of a good husband, and the support of the parental family in supplying feedback to the pregnant woman. Benedek suggested that these factors might help maintain the emotional integrity of the mother-to-be. Yet, some studies have found that strained interpersonal relations exist during pregnancy, particularly between the husband and wife. For example, Griffith (1976) identified marital disharmony factors that could lead to marital crisis during pregnancy. Griffith's study, based on Schutz's (1966) assumption that people need people, examined three interpersonal needs of every individual: inclusion (interaction with others), control, and affection. Griffith theorized that when individuals involved in a relationship differ or are incompatible in their needs for affection, inclusion, and control during pregnancy, the likelihood is greater that their interpersonal relations will function as a stressor. This could act with other factors during

pregnancy to produce a crisis. Griffith, in her investigation, used The Fundamental Interpersonal Relationships Orientation Behavior (FIRO-B) to test 24 pregnant couples for behavior in the three areas of interpersonal need. The findings indicated a large discrepancy between husbands and wives' inclusion and affection needs. Husbands reported that their attempts to interact with their wives were frequently met with antagonism. The wives likewise reported that when they tried to include their husbands, they were often reproached by him. Both husbands and wives stated that they wanted to be affectionate toward one another, but that affectionate attempts by one were not reciprocated by the other. These findings seem to indicate incompatibility between the pregnant woman and her husband interpersonally. However, the meaningfulness of Griffith's study is limited by the fact that her research method did not include measurement of incompatibility in the couples before pregnancy.

Several investigators have attempted to identify concerns of the pregnant woman that might preoccupy her attention and decrease her interaction with others. Light and Fensler (1974) conducted a retrospective study to determine factors that correlate with worries during pregnancy. They tested 202 randomly selected patients on postpartum hospital units. Subjects responded to a 60-item "yes" (did

worry), "no" (did not worry) questionnaire. Findings indicated that the women's primary concern during pregnancy was for the baby's health status (87.56%). Other subjects of worry, in order of decreasing incidence, were: the childbirth experience (73.80%), self-attractiveness (51.55%), finances (47.24%), family (31.44%), and medical care (25.76%). Surprisingly, only 25.76% of the respondents indicated concerns of birth defects. Light and Fensler concluded that this might have been because the sample was comprised of postpartum patients who had already seen their normal newborns.

Rubin (1976) identified four major tasks of pregnancy that correlate with the maternal worries described by Light and Fensler (1974). These tasks were: (1) seeking safe passage for herself and her child through pregnancy, labor and delivery; (2) ensuring acceptance of her child by significant persons in her family; (3) binding-in to her unknown child; and (4) learning to give of herself. All four tasks are worked on concurrently and equally throughout the pregnancy, according to Rubin. He further reported that an impasse in any one task area seems to be directly related either to the abandonment of the pregnancy (as in abortion or prematurity), or to severe stress in maintaining the pregnancy (as in toxemia).

The studies reviewed thus far have in one way or another focused on similarities of pregnant women to each other. Additional research has been done to identify factors which explain why, with respect to degree of stress experienced, pregnant women differ from one another. The aim of research in this area has been to identify the factors that contribute to an individual's vulnerability to psychic stress and capacity for adaptation in circumstances of stress. Nuckolls, Cassel, and Kaplan (1972) conducted an investigation of the relationship between psychosocial assets, crises experienced in life, and the prognosis of pregnancy. Their subjects were 170 maternity patients whose psychosocial assets were measured early in pregnancy by a questionnaire indicating adaptability (The Adaptive Potential for Pregnancy--TAPPS). At 32 weeks, subjects completed the Schedule of Recent Experience (SRE) which yielded scores measuring life change during pregnancy and during the two years preceding it. After delivery, subjects' medical records were used to score each pregnancy as "normal" or "complicated" in terms of physical components such as hypertension, threatened abortion, admission to the hospital for hyperemesis, prolonged labor, and low infant apgar ratings. Taken alone, neither SRE nor TAPPS scores were significantly related to complications. However, when these variables were considered together, it was found that, if the life

change score was high both before and during pregnancy, women with high TAPPS scores, that is, strong psychosocial assets, had only one third the complication rate of women with low TAPPS scores. In the absence of high cumulative life change, there was no significant correlation between psychosocial assets and complications.

Ballou (1978) has likewise reported on variation in the degree of stress experienced by expectant mothers. She has found that the degree of stress experienced usually depends on both the woman's vulnerability to psychic stresses and her capacity for adaptation. The woman's adaptation, in turn, is dependent on her past methods of coping, availability to her of support systems, and her familiarity with the type of stressor.

## Pregnancy Complications and Maternal Stress

Rubin (1976) suggested an associative relationship between the pregnant woman's emotional state during the course and outcome of her pregnancy when he described the four maternal tasks of pregnancy. Although his inference was not based on his own scientific investigation, it does have the support of many previous investigative studies. Researchers have long reported on the relationship of maternal stress and such high-risk pregnancy factors as abortion, premature delivery, toxemia, and prolonged difficult labor.

The impact of the mother's emotional attitude on the developing fetus has also been studied.

As early as 1946, Kroger and DeLee reported that 17 of 19 "untreatable" hyperemesis gravidum cases had been cured by hypnotic suggestion, thereby indicating a psychological etiology. Chertok and his associates (1961, 1963), in intensive investigation of the psychological characteristics of the vomiting pregnant woman, came to the conclusion that the nausea and vomiting syndrome was related to the mother's attitude toward the unborn child. In particular, it was an expression of the mother's ambivalence toward the pregnancy and toward the baby. Howells (1972) reported that women with very disturbed personalities commonly are found among hyperemetics. Although Macfarlane (1977) supported the findings regarding a psychological etiology of nausea and vomiting, he also suggested physiological influences. He theorized that the biochemical changes that take place in pregnancy can lower the woman's threshold to nausea and vomiting.

The significance of emotional factors in habitual spontaneous abortion was reported by Mann (1959). In a retrospective study of 160 habitual aborters, he noted that 145 of these women had no apparent physical cause for their condition but displayed instead abnormal psychological patterns which pointed to a relationship between emotional

factors and the abortion habit. Grimm (1962) compared 61 habitual aborters with 35 controls. He observed that personality characteristics could differentiate the two groups, and that the habitual aborter's personality often corresponded to a dysfunctional temperament. Grimm (1962) also found, while retesting 18 habitual aborters after psychotherapy, that the aborters had resulting term pregnancies. Colman and Colman (1971) described the personality of the habitual spontaneous aborter as being an unusually dependent individual. They further described the habitual aborting woman as inclined to excessive guilt feelings, poor emotional control, and one who has trouble achieving a positive female identity.

Although the findings of Mann and Grimm, and the description of the habitual aborter's personality given by Colman and Colman, were quite interesting, it was difficult to know whether or not these patients' psychological problems were present before the abortion pattern developed. It is conceivable that part of their psychological problem resulted from the stress of repeated failure to complete a pregnancy.

Colman and Colman (1971) reported that women who gave birth to premature infants retrospectively attributed the premature delivery to such things as psychological stress, marital conflict, overwork, or just nervousness. Blau (1963)

described the delivery of a premature infant as an abortion attempt, a suicidal will, or an attempt to murder someone. In each of these studies, the mothers of premature infants were compared with mothers of full term infants. Although they showed differences between the mothers' personalities, these differences may have been the result of having a small and vulnerable baby, and had little to do with the reasons why the baby was born prematurely. Therefore, the role of psychological factors in bringing about premature labor is still uncertain, but the possibilities of influence cannot be dismissed.

Psychological influences of toxemia have been studied by many investigators. Walser (1948) suggested that fear, mediated through an increased production of epinephrine, may be an important component of the psychological makeup in toxemia. Weidon (1954) reported a significantly higher incidence of toxemia in schizophrenics than in nonpsychotic individuals.

In a more recent study, Ringrose (1972) used retrospective and prospective techniques in assessing the role of the mind in the etiology of toxemia. The Minnesota Multiphasic Personality Inventory (MMPI) test was given to 41 patients who manifested toxemia of pregnancy; 28 were given the test in the antepartum period, and 13 received the test immediately postpartum. Personality factors

evaluated were: hypochondriasis, depression, hysteria, psychopathic deviation, paranoia, psychasthenia, schizophrenia, hypomania, and sociability. The results of the study revealed that 19 of these toxemic patients had frankly abnormal personality traits, 19 had borderline abnormal traits, and only 3 personalities were definitely normal as measured by the MMPI. It is noteworthy that no particular abnormal personality pattern appeared to dominate the sample.

Ringrose (1972) tested the value of his findings of psychological influences in toxemia by studying 41 young, unmarried pregnant women in a prospective investigation. Subjects' ages ranged from 11 to 25 years. This population was selected because of the high incidence of toxemia in young, unmarried mothers. The MMPI was administered to the subjects before the onset of symptoms of toxemia. Eight of the participants developed pre-eclampsia, 14 manifested incipient pre-eclampsia, and 19 showed no evidence of toxemia. Of the 14 incipient pre-eclampsia patients, 64% had abnormal personality scores. Of the eight patients with pre-eclampsia, 75% were measured by the MMPI as having abnormal personalities. In contrast, only 32% in the group of 19 patients who did not develop toxemia showed abnormal personalities in the testing. From these findings Ringrose concluded that, in women who develop toxemia there is

frequently a preexisting concealed personality abnormality, that such a personality copes with stress less efficiently, and that decompensation can result in toxemia.

In 1973, Bakow (cited by Macfarlane, 1977) reported a relationship between anxiety and the length of labor. He found that mothers who were anxious during pregnancy and expressed greater than average concern over the course of their pregnancy more often than other mothers had babies who were in distress during delivery. Other recent studies suggest that women who are likely to have complications during childbirth are those who during pregnancy manifest a negative attitude to the pregnancy, show excessive concern for the condition of the child, and anticipate disruption of their pregnancy regardless of evidence of normalcy. These studies also suggest that both women who list a greater than average number of contacts with women who had complicated pregnancy, and women who describe their own mothers' health as poor, have complicated deliveries (Ballou, 1978; Benedek, 1970; Ferreira, 1969; Howells, 1972; Macfarlane, 1977).

As early as 1867, Whitehead (cited by Sontag, 1941) was the first to suggest that the mother's emotional attitude may have an impact on the fetus. However, the work of Sontag (1941) represents the first serious attempt to test Whitehead's observation in a modern setting. He provided the first findings regarding the effect of emotional

maternal factors on the fetal development and noted that a relationship existed between such factors as maternal emotions, ingestion of food, position, fatigue, and the pattern of fetal activity.

Many other investigators have studied the relationship of maternal stress on the developing fetus. Strean and Peer (1956), in a retrospective study of 232 cases of cleft palate, noted that the mothers' obstetrical histories contained an unusually high incidence of physiological, emotional, or traumatic stress at the time when the maxillae were expected to fuse in the developing embryo. Fraser (1959), in a retrospective study of 300 instances of harelip and cleft palate, found that there had been maternal emotional upset during the infant's prenatal life in 21.3% of the cases.

Turner (1956), in a survey of 100 mothers and their babies, also reported a relationship between emotional difficulties in mothers and a general syndrome of restlessness (fussiness, excessive crying, irritability, sleeplessness, vomiting, and loose stools) in their infants. She found that of 13 difficult babies suffering from the syndrome of restlessness, 11 had been born to mothers who appeared to have been under considerable emotional stress during pregnancy. From this survey, Turner concluded that prenatal stress might affect the reactivity of the fetal

nervous system and alter the whole pattern of postnatal behavior.

Ferreira (1960, 1962), in a double-blind study, investigated possible prenatal influence of the pregnant woman's emotional attitude on the infant. He administered an attitude questionnaire to pregnant women in their 36th week of pregnancy. Later, the nursery behavior of their newborns was independently rated. Of the 163 mother-infant pairs studied, it was found that 28 restless babies as compared with 135 normal infants belonged to mothers who stated they feared harming their babies and who had shown rejection of their pregnancy.

## Stress of Hospitalization

The psychological stresses associated with hospitalization have long been of interest to researchers. As early as 1954, Dichter reported the reactions to hospitalization of 160 medical in-patients. He found hospitalization was an emotional experience affecting the basic fears of the individual. The patient was found to regress to the status of a child. "I'm afraid," "I need assurance," were basic cries echoed over and over (p. 53).

Duff and Hollingshead (1968) also described patients' reactions to hospitalization. They interviewed 161 medical-surgical patients. The patients' responses could be categorized as one of three: apprehensive, anxious, and

fearful. The authors concluded that when the categories of anxiety and fear were combined, three out of four persons were worried about their hospital confinement.

Both Reichle (1975) and Robinson (1976) described the characteristic elements of human behavior as derivations of the emotion that surrounds the patient when hospitalized. They reported that each individual's mental situation might influence his or her physical illness and course of hospitalization. Reichle described the mental "set" an individual brings to the hospital: a set of expectations, a code of behavior, customs or rituals, and a defined manner of communication--nonverbal as well as verbal. She stated, "When experiences encroach upon these preexisting standards the individual finds himself with a conflict that is stress-producing" (p. 42). Reichle further explained that the coping methods used by an individual contemplating hospitalization will be the same as those used by him or her with other major stresses in life.

Taylor (1970) described two different kinds of crises the patient may experience during hospitalization; the community crisis and the personal crisis. A community crisis refers to those situations supporting universality such as, "We're all-in-the-same-boat." A personal crisis refers to a feeling that one is being intimidated by illness and hospitalization, a response referred to as the "Why-pick-on-me"

behavior (Taylor, 1970). Community crisis behavior, according to Taylor, may increase the patient's sense of social cohesion, and this increase can provide psychic support in situations of stress. Personal crisis behavior has the opposite consequence; it decreases the patient's sense of social cohesion and makes him or her less able to sustain stress.

Moffic and Paykell (1975) reported the occurrence and features of depression in 150 medical in-patients. They found that, within a week of admission to the hospital, these patients showed clinical features of depression. Feelings of pessimism, helplessness, anxiety, and self-pity were expressed. Depression was most prevalent in those patients with severe medical illness, more concomitant stress, and more previous depressions. From these findings Moffic and Paykell concluded that depression in hospital-confined patients appears to be in proportion to the life situation of the patient.

Barnett (1976) conducted a study identifying specific aspects of hospital life that evoked anxiety, depression, or other negative reactions in patients. Two hundred medical in-patients (male and female) responded to a scheduled item interview. The items included were situations that might affect the emotional state of patients either positively or negatively, such as routine ward events, separation from

family, and absence from work. She found that females and young males gave more negative responses than older males or aged persons. There were more expressions of fear, embarrassment, hostility, and dissatisfaction with hospital routines among the female and younger-aged groups. Based on the data obtained from this study, Barnett concluded that the differences between the responses of patients of different age and sex are expressions of the ways in which patients occupy the role of patient, or "sick role" (p. 356). The findings of this study were noteworthy, for the differences indicate that attitudes about hospitalization are not homogeneous, and that females might have more difficulty adapting than males. The hospital confined antepartum patient is usually young and is, of course, female.

## Emotional Effect of Hospitalization on the High-Risk Antepartum Patient

As recent as 1974, there was no research in psychological behavior of the hospital confined high-risk antepartum patient. Nursing, as well as medical obstetrical literature, mentioned hospitalization and the antepartum patient only in relation to the assessment and management of the physical components providing the threat to the woman and/or the fetus.

Rosen (1975) reported a case report studying the psychological behavior of one antepartum patient hospitalized

for 8 weeks with Placenta Previa. She observed and interviewed the patient almost daily. Data from the patient's chart, nurses' notes, and conversations with attending physicians were obtained. Rosen found that the patient frequently expressed anger, hostility, and irritation with many "senseless" hospital routines. She suffered interrupted periods of depression and wanted to leave the hospital. The patient sometimes expressed rejection toward her unborn child. She also was observed to sleep poorly and became tearful easily, particularly when discussing hospital confinement or her family. Based on the data, Rosen concluded that many of the patient's problems may have been related to individual personality traits (goals, ambitions, and so forth) that are relatively fixed. However, she suggested that the antagonistic, belligerent behavior exhibited by the patient may have been due to the confinement and separation imposed by hospitalization.

Although the findings of Rosen were quite interesting, the case report of only one patient limited her ability to make inferences. Nevertheless, the findings regarding the behavior of this hospitalized antepartum patient were noteworthy, and these findings represent the limited literature resources available on this topic.

In 1977, Burrell and Burrell suggested the need for psychological support of the hospitalized antepartum

patient. They stated that "emotional support is extremely important for this group of patients, for the mother has concern about her own life and also that of her infant" (p. 337).

## Summary

The literature review revealed such psychological stress reactions as fears, anxieties, depression, and conflicts that are related to gestation, parturition, and motherhood. Authors suggested that these reactions are usually not constant and that they occur suddenly and often unconsciously in most pregnancies. The woman's basic psychological make-up, the support she received from significant others, and the accumulation and impact of stressful life events were related to the woman's ability to cope with and adapt to stresses in pregnancies. A well-integrated personality and the existence of significant interpersonal relationships were found to be sustaining factors when stress occurs during pregnancy. Deficiencies in both psychological assets and supportive relationships, as well as accumulated stressful life events, seemed likely to make a pregnant woman incapable of coping successfully with stress.

Some studies concluded that a positive correlation exists between maternal stress and the nature of both the course and the outcome of pregnancy. It was suggested that

physical complications in pregnancy may be emotionally related or aggravated by psychological factors. The studies reviewed also concluded that prolonged or severe tension may alter the fetal environment in the delicate maternal-placental-fetal relationship, and thus impair fetal development.

Hospitalization was found to be an emotionally threatening event for most individuals. Therefore, the pregnant woman, with all her concerns and fears, may become problematically upset when confronted with the stresses of hospital confinement. Interestingly, very few studies investigated the emotional behavior of the hospitalized high-risk antepartum patients, and none of the studies reviewed compared the psychological stress reactions of hospitalized high-risk antepartum patients with non-hospitalized high-risk antepartum patients.

# CHAPTER 3

## PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

The review of the literature revealed that pregnancy is a time of crisis, and additional stress during this crisis can influence the pregnancy course and outcome. Hospitalization in itself is a stressful event that, when combined with the crises of pregnancy, only potentiates an already stressful situation.

The purpose of this study was to determine the degree of stress experienced by normal antepartum patients, non-hospitalized high-risk antepartum patients, and hospitalized high-risk antepartum patients; and to compare the three groups in terms of their psychological stress. In this chapter, the procedure followed in conducting the research is presented. Consideration is given to the following: design, setting, population, instrument, methodology, and treatment of data.

### Design

The study was a nonexperimental descriptive survey. The rationale for using this approach was to describe and compare the degree of psychological stress reactions in three groups of antepartum patients.

## Setting

The facilities chosen for the study were a private woman's hospital and an affiliated obstetrical-gynecological clinic in a metropolitan area located in the Southwest. Several factors were considered in selecting the setting. These included availability of facilities, adequate number of both hospitalized and nonhospitalized antepartum patients, homogeneous obstetrical care, and homogeneous antepartum teaching.

Hospitalized high-risk antepartum patients were selected from the antepartum unit of the 198 bed private woman's hospital. The average census of this unit was 15 patients. Patients admitted to the unit were at least 16 weeks gestation of pregnancy and were experiencing various types of pregnancy complications. Nonhospitalized high-risk and normal antepartum patients were selected from the affiliated obstetrical-gynecological clinic. Obstetricians in this clinic referred all antepartum patients to the education department for teaching and counseling. It was determined that six obstetricians in the clinic had the largest current maternity practice both in the clinic and the hospital. Therefore, permission was sought from these six physicians to contact their antepartum patients regarding participation in the study (Appendix A). The patients' participation was on a voluntary basis.

## Population

Purposive sampling technique was used to select subjects for the study. Prior to the implementation of the study, permission was obtained from the Human Rights Research Committee and The Graduate School of the Texas Woman's University (Appendix A). A written description of the study and an informed consent statement that each subject would sign before participating in the study was developed (Appendix B).

The population was comprised of three categories of antepartum patients. Group 1 consisted of 15 normal antepartum patients. Group 2 was made up of 15 patients who were diagnosed as high-risk but were neither hospitalized, nor had they been hospitalized during the existing pregnancy. Group 3 was comprised of 11 antepartum patients hospitalized for causes related to high-risk pregnancy.

Patients were selected for participation in the study after meeting certain predetermined criteria. These criteria were: (1) longer than 28 weeks gestation of pregnancy, (2) married and living with their spouse, and (3) under the obstetrical care of the same obstetrical clinic. Subjects were of varied ages, socioeconomic status, race, education, and cultural backgrounds.

## Instrument

The Multiple Affect Adjective Check List (MAACL), In General and Today Forms, was used to measure psychological stress reactions. This instrument was developed by Zuckerman and Lubin in 1965, and it demonstrated congruent validity with other affective scales such as the Minnesota Multiphasic Personality Inventory and Taylor Manifest Anxiety Scale. However, the MAACL has an advantage over the Minnesota Multiphasic Personality Inventory and Taylor Manifest Anxiety Scale in that it measures trait (In General) as well as state (Today) affect. Content validity of the MAACL has been established by demonstrated sensitivity to such situations as: examination--threat anxiety, stage fright, perceptual isolation, and changes induced by pictorial stimuli (Zuckerman & Lubin, 1965).

Reliability testing for the MAACL was conducted by Zuckerman and Lubin (1963). Because the instrument measures stress of today as well as stress in general, one would expect the Today Form to have less test-retest reliability than the In General Form. The rationale behind such an expectation is that a test that attempts to measure affect should not be statistically reliable from day to day if it is truly sensitive to the individual's daily fluctuations. Indeed, the test-retest reliability coefficients were found

to be r = .68 for In General and r = .31 for Today (Zuckerman & Lubin, 1965).

The In General and Today Forms of the MAACL yield separate numerical scores for trait and state of three variables: anxiety, depression, and hostility. The lists are brief and non-stressful and can be completed in approximately 5 minutes. Adjectives of low frequency in the written language are excluded in the test so that subjects of less than average intelligence can understand each item (Zuckerman, Persky, & Link, 1967).

## Methodology

Hospitalized high-risk antepartum patients were tested while hospitalized. Nonhospitalized high-risk antepartum patients and normal antepartum patients were tested as they made their regular antepartum appointments with their obstetrician at the Obstetrical-Gynecological Clinic. The patients were told that permission to conduct a research study had been obtained from their physician and they were asked if they were willing to participate in the study. Participation was described to them as entailing the completion of two check lists. In order to determine patients' compliance with the criteria used for participation in the study, hospitalized high-risk antepartum patients' charts were reviewed by the researcher prior to testing.

Nonhospitalized high-risk antepartum patients and normal antepartum patients were asked questions concerning the predetermined criteria for participant eligibility for the study. If they were eligible for participation in the study, they were given the written explanation of the study and the consent form to read and sign (Appendix B).

Subjects were assigned to the nonhospitalized high-risk antepartum patient group according to their knowledge of having pregnancy complications. The patients were asked if they were aware of any problems such as: severe or prolonged nausea and vomiting, high blood pressure, bleeding or spotting, previous abortions or miscarriage, or diabetes. This method was selected for determining high-risk because the patient's reactions to the pregnancy complication will depend on her knowledge of the problem. If the patient responded positively as to the existence of any of the high-risk problems, her diagnosis was then verified with the education department.

The MAACL In General and Today Forms (Appendix C) were given to the subjects, and directions for each test were read to each participant by the researcher. Subjects were instructed to check those adjectives which best described their feelings or mood generally. Each subject was then asked to check those adjectives which described her feelings or mood during the existing pregnancy. They were

permitted to complete the check lists and placed them in a provided envelope when they had finished. Anonymity was assured by asking them to refrain from signing their names on the tests.

Nonhospitalized subjects were selected over a period of one month. However, because of the low census on the hospital's antepartum unit, hospitalized high-risk antepartum subjects were selected over a 3 month period.

## Treatment of Data

The MAACL yields quantitative data about affective behavior. Data generated by this test were separated into six categories for each of the three antepartum groups: (1) In General--anxiety, (2) In General--depression, (3) In General--hostility, (4) Today--anxiety, (5) Today--depression, and (6) Today--hostility. Differences between In General and Today scores for each group were tested using nine Wilcoxin matched pairs signed rank tests. This is a powerful test for correlated samples because it not only tests the direction of differences between pairs but combines that difference with the relative size of the differences (Downie & Heath, 1974). The Kruskal-Wallis one-way analysis of variance by ranks test was used to determine differences between the three groups for each In General and Today category. Six Kruskal-Wallis tests were computed.

The .05 level of significance was selected for determination of significant difference. When statistically significant differences were noted in the Kruskal-Wallis test, multiple confidence intervals were used to test for pairwise differences (Maroscuilo & McSweeney, 1977; Siegel, 1956). These procedures and discussion of the findings are presented in Chapter 4.

# CHAPTER 4

# ANALYSIS OF DATA

## Introduction

Three groups of antepartum patients were surveyed to determine the degree of stress they experienced. The groups were also compared to determine if a difference existed between their levels of psychological stress reactions. The instrument used to collect the data was the 132-item MAACL. This check list has been widely used to measure trait and state affective reactions.

The statement of the problem, purpose, theoretical framework, review of the literature, and the methodology were described in previous chapters. In this chapter the data are presented and analyzed. Specifically the following are addressed: description of data, data regarding degree of psychological stress among antepartum patients, and comparative data of psychological stress between antepartum groups.

## Description of Data

In this section the scoring procedure will be detailed and the data will be presented in descriptive terms. The data were collected from the MAACL In General and Today

Forms. These check lists provide numerical scores which give separate quantitative data about levels of anxiety, depression, and hostility. Data generated from 15 normal antepartum patients and 15 nonhospitalized high-risk antepartum patients were collected in an obstetrical-gynecological clinic. Eleven hospitalized high-risk antepartum patients were tested in an affiliated woman's hospital. The total number of participants was 41 patients.

Subjects were first instructed to check from a list of 132 adjectives those words which best described their feelings or mood generally. They were then asked to check from a list of the same 132 adjectives those words which best described their feelings or mood during the existing pregnancy.

Each of the three dependent variables: anxiety, depression, and hostility, were scored separately for subjects' In General and Today responses. Positive items for these variables were scored if subjects checked them, while negative items were scored if the subjects omitted them. Positive adjectives were checked significantly more frequently by stressful patients rated high in anxiety, depression, and hostility than by nonstressful patients rated low in these feelings and moods. Negative words were checked significantly more frequently ($p<.05$) by nonstressful subjects than by stressful subjects. The range

and median MAACL In General and Today scores were determined for each group of antepartum patients. A summary of these data and maximum score possibilities for anxiety, depression, and hostility are presented in Table 1. Normal antepartum patients are represented as Group 1, Nonhospitalized high-risk antepartum patients are represented as Group 2, and Group 3 represents hospitalized high-risk antepartum patients.

## Data Regarding Degree of Psychological Stress Among Antepartum Patients

In this section the first purpose of the study will be addressed and the appropriate data will be analyzed. The first purpose of the study was to determine the degree of stress experienced by three groups of antepartum patients, normal antepartum patients, nonhospitalized high-risk antepartum patients, and hospitalized high-risk antepartum patients. This was accomplished by testing the differences between MAACL In General and Today raw scores of anxiety, depression, and hostility for each of the three groups separately using the Wilcoxin matched pairs signed rank test. This test not only gives information about the direction of the differences within pairs, but also the relative magnitude of the differences. Nine tests were performed. The outcomes are summarized in Table 2.

Table 1

Number, Range, and Median of Antepartum Patients' Scores on the MAACL

| Group | Anxiety[a] | | | | | | Depression[a] | | | | | | Hostility[a] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In General | | | Today | | | In General | | | Today | | | In General | | | Today | | |
| | Scores | Range | Median | Scores | Range | Median | Scores | Range | Median | Scores | Range | Median | Scores | Range | Median | Scores | Range | Median |
| 1 (N=15) | 0-12 | 13 | 6 | 1-13 | 13 | 8 | 1-21 | 21 | 11 | 1-22 | 22 | 14 | 2-17 | 16 | 9 | 2-15 | 14 | 9 |
| 2 (N=15) | 0-15 | 16 | 6 | 4-19 | 16 | 14 | 4-19 | 16 | 14 | 10-29 | 20 | 20 | 2-11 | 10 | 8 | 3-16 | 14 | 12 |
| 3 (N=11) | 0-14 | 15 | 7 | 4-19 | 16 | 14 | 2-21 | 20 | 14 | 13-31 | 19 | 24 | 1-15 | 15 | 10 | 8-23 | 16 | 14 |

[a]Anxiety Maximum Score = 21
Depression Maximum Score = 40
Hostility Maximum Score = 28

Table 2

T Values for Wilcoxin Matched Pairs Signed Rank Test Comparing MAACL In General and Today Scores of Individual Groups

| Group | Anxiety | | Depression | | Hostility | |
|---|---|---|---|---|---|---|
| | T | p | T | p | T | p |
| 1 (N=15) | 33.5 | n.s. | 44.5 | n.s. | 29.5 | n.s. |
| 2 (N=15) | 4.0 | <.01 | 0.0 | <.01 | 6.0 | <.01 |
| 3 (N=11) | 8.0 | <.05 | 3.0 | <.01 | 6.0 | <.02 |

The In General and Today scores of normal antepartum patients were not significantly different for anxiety, depression, or hostility. However, scores of nonhospitalized antepartum patients were consistently different ($p<.01$) in all three variables, as were the hospitalized antepartum patients' anxiety ($p<.05$), depression ($p<.01$), and hostility ($p<.02$) scores.

## Comparative Data of Psychological Stress Between Antepartum Groups

The second purpose of the study was to compare the three groups of antepartum patients in terms of psychological stress. This was accomplished by using the Kruskal-Wallis one way analysis of variance test. The

Kruskal-Wallis test assumes that sample values almost invariably differ somewhat, and the question is whether the differences among the sample signify genuine population differences or whether they represent merely chance variations (Siegal, 1956).

In the Kruskal-Wallis test, the null hypothesis is that there will be no difference in the sums of the ranks of the groups when they are corrected for sample size. If a significant difference between the ranks of the groups should be found, it would suggest that at least one group contained a disproportionate number of high or low ranks, and would indicate that the samples probably represented different populations (Kerlinger, 1973).

To analyze the data, six Kruskal-Wallis tests were performed on the three groups of subjects: (1) In General--anxiety, (2) In General--depression, (3) In General--hostility, (4) Today--anxiety, (5) Today--depression, and (6) Today--hostility. Scores from all three antepartum patient groups were combined in a single ordered series and ranked. Each rank-order score was identified as belonging to a given sample and the sum of the ranks for each group was calculated. The calculations were performed according to the Kruskal-Wallis formula. Because tied scores were encountered in the analysis, a corrective factor was used. A summary of these data is presented in Table 3.

Table 3

Kruskal-Wallis MAACL In General and Today Anxiety, Depression, and Hostility Scores (N=41)

| | In General | | Today | |
|---|---|---|---|---|
| | Sum of Ranks | H | Sum of Ranks | H |
| Anxiety | $R_1$ = 282.5<br>$R_2$ = 337.5<br>$R_3$ = 241.0 | .81 | $R_1$ = 183.0<br>$R_2$ = 391.5<br>$R_3$ = 286.5 | 12.7* |
| Depression | $R_1$ = 290.5<br>$R_2$ = 312.0<br>$R_3$ = 258.5 | .70 | $R_1$ = 184.5<br>$R_2$ = 357.0<br>$R_3$ = 319.5 | 13.7* |
| Hostility | $R_1$ = 306.5<br>$R_2$ = 379.0<br>$R_3$ = 275.5 | 1.90 | $R_1$ = 194.0<br>$R_2$ = 364.5<br>$R_3$ = 315.0 | 16.0* |

Note: All H values corrected for ties.

*p<.01
*p<.001

No significant differences were found among the three antipartum groups' In General test scores. However, significant differences were noted in the three Today tests: Today--anxiety (p<.01), Today--depression (p<.01), and Today--hostility (p<.001).

Because the Kruskal-Wallis tests of Today scores revealed significant differences among the group, multiple confidence intervals were computed to determine pairwise differences and to test the difference between the high-risk and normal groups. Specifically, three confidence

intervals were calculated to determine which pairs differed. A fourth test compared the normal group to the mean of the high-risk groups. A summary of these data is presented in Tables 4, 5, and 6.

Table 4

Post-hoc Multiple Contrasts Between Groups' Today Anxiety

| Contrast | Estimate | Lower Limit | Upper Limit |
|---|---|---|---|
| $\bar{R}_1 - \bar{R}_2$ | -13.9* | -19.05 | - 8.75 |
| $\bar{R}_1 - \bar{R}_3$ | -13.85* | -19.19 | - 8.51 |
| $\bar{R}_2 - \bar{R}_3$ | .05 | - 5.29 | + 5.39 |
| $\bar{R}_1 - \frac{(\bar{R}_2 + \bar{R}_3)}{2}$ | -27.75* | -40.25 | -15.25 |

*Significant at $p \leq .05$

Since the contrast of Groups 1 and 2, and Groups 1 and 3, were significantly different from zero, the normal antepartum patients were significantly different in Today--anxiety from the nonhospitalized high-risk antepartum patients and the hospitalized high-risk antepartum patients (Table 4). The secondary comparison of the normal group, $\bar{R}_1$, with the combined high-risk groups, $(\bar{R}_2+\bar{R}_3)/2$, confirms this finding. The contrast of Groups 2 and 3, however, were not significantly different from zero, indicating that

the nonhospitalized and hospitalized high-risk groups did not differ in their Today--anxiety scores.

The comparison of Today--depression scores of Groups 1 and 2, and Groups 1 and 3, were again significantly different from zero. Table 5 reflects this difference.

Table 5

Post-hoc Multiple Contrast Between Groups' Today Depression

| Contrast | Estimate | Lower Limit | Upper Limit |
|---|---|---|---|
| $\bar{R}_1 - \bar{R}_2$ | -11.5* | -16.65 | - 6.35 |
| $\bar{R}_1 - \bar{R}_3$ | -16.7* | -22.04 | -11.36 |
| $\bar{R}_2 - \bar{R}_3$ | - 5.2 | -10.54 | + .14 |
| $\bar{R}_1 - \frac{(\bar{R}_2 + \bar{R}_3)}{2}$ | -28.20* | -40.70 | -15.70 |

*Significant at $p \leq .05$.

The normal antepartum patients were significantly different in Today--depression from the nonhospitalized high-risk antepartum patients and the hospitalized high-risk antepartum patients. Again, this is confirmed by the specific test of normal and high-risk groups. While the nonhospitalized high-risk antepartum group (Group 2) and the hospitalized high-risk antepartum samples (Group 3) were not significantly different from one another in Today--depression ($p \leq .05$), the confidence interval indicates a

strong trend toward a significant difference between the two in that it includes zero by a small margin. A narrower confidence interval ($p \leq .1$) does exclude zero, indicating that the difference between Groups 2 and 3 would be a chance occurrence of $p \leq .1$ under the null hypothesis of no difference.

Since the contrast of Groups 1 and 2, and Groups 1 and 3, were significantly different from zero in that the intervals exclude zero, the normal antepartum patients were significantly different in terms of Today--hostility from both the nonhospitalized high-risk antepartum patients and the hospitalized high-risk antepartum patients (Table 6).

Table 6

Post-hoc Multiple Contrast Between Groups' Today Hostility

| Contrast | Estimate | Lower Limit | Upper Limit |
|---|---|---|---|
| $\bar{R}_1 - \bar{R}_2$ | -11.37* | -16.52 | - 6.22 |
| $\bar{R}_1 - \bar{R}_3$ | -15.71* | -21.05 | -10.37 |
| $\bar{R}_2 - \bar{R}_3$ | - 4.44 | - 9.78 | + .90 |
| $\bar{R}_1 - \frac{(\bar{R}_2 + \bar{R}_3)}{2}$ | -27.08* | -39.58 | -14.58 |

*Significant at $p \leq .05$.

This was again confirmed by contrasting Group 1 with the average of Groups 2 and 3. The contrast of Groups 2 and 3

were not significantly different from zero ($p \leq .05$). Again, the data indicate a trend in difference between these latter two groups as indicated by the highly unbalanced confidence interval. Reducing the interval size ($p \leq .1$) produces an excluded zero value and indicates that the difference would be chance occurrence of $p \leq .1$ under the null hypothesis.

## Summary

Data concerning the degree of psychological stress reactions collected from normal antepartum patients, non-hospitalized high-risk antepartum patients, and hospitalized high-risk antepartum patients were analyzed by three non-parametric tests for significance. The range and median MAACL In General and Today scores were identified for each of the three sample groups on each of three variables (anxiety, depression, and hostility). Nine Wilcoxin matched pairs signed rank tests were performed to analyze existing differences in trait (In General) and state (Today) affective behavior within each of the three different populations surveyed. No significant differences were found when the normal antepartum groups' In General and Today scores were compared with each other. However, nonhospitalized high-risk antepartum patients and hospitalized high-risk antepartum patients' scores were significantly different for all three variables.

The Kruskal-Wallis one way analysis of variance was calculated to analyze existing differences between the groups for anxiety, depression, and hostility. In General scores were not significantly different when the three groups were compared. However, the three groups were significantly different in the Today scores for all three reactions.

Since the Kruskal-Wallis Today tests indicated that the samples represented different populations, multiple confidence intervals were calculated to determine pairwise differences in all three variables. The normal antepartum sample significantly differed from both high-risk samples individually, and when the high-risk samples were combined. Although the high-risk samples did not differ significantly from one another at $p \leq .05$, both depression and hostility in the hospitalized antepartum patients approached significance ($p < .1$) when compared with the nonhospitalized high-risk antepartum patient group.

The direction of results of this study agreed with previous findings that maternal health factors influence the degree of stress experienced by pregnant patients. Normal antepartum patients experienced less stress than nonhospitalized high-risk antepartum patients and hospitalized high-risk antepartum patients. Although the nonhospitalized and hospitalized high-risk antepartum patients did not

differ at conventional levels of significance, there were trends in the data indicating higher depression and hostility reactions in the hospitalized antepartum group.

# CHAPTER 5

## SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

This study was designed to determine the degree of psychological stress experienced by three groups of antepartum patients, and to compare the three groups in terms of their stress. A review of the literature, procedure for collection of data, and the data analysis were presented in previous chapters. This chapter will summarize the study, discuss the findings and implications, and give suggestions for further study.

### Summary

The Multiple Affect Adjective Check List In General and Today Forms were used in this study to survey 41 antepartum patients from an obstetrical-gynecological clinic and an affiliated woman's hospital. Both of these agencies were located in a metropolitan city in the southwest. The purpose was to determine the degree of stress experienced by three groups of antepartum patients: normal antepartum patients, nonhospitalized high-risk antepartum patients, and hospitalized high-risk antepartum patients. Additionally,

the three groups were compared in terms of their psychological stress.

The theoretical framework for the study was based on the General System Theory. In accordance with this theory the antepartum patient is viewed as a system consisting of interrelated parts that come together to form a purposeful goal directed network. A disturbance in any system part can influence, in some way, the system as a whole. Since it was possible that emotional stress increases even in normal pregnancy, it seemed likely that physical complications in pregnancy and hospitalization might cause additional stress, and disorganization of the interrelated parts of the maternal system. Therefore, the degree of psychological stress experienced by the pregnant woman in her situation was assessed.

In support of this theory, research findings indicated that some physical complications in pregnancy may be emotionally related or aggravated by psychological factors. Severe or prolonged maternal stress was described as a possible threat to fetal development in utero. Several authors reported hospitalization to be emotionally threatening to most individuals. However, only one case study reported the emotional behavior of the hospitalized antepartum patient, and none of the studies reviewed compared

hospitalized high-risk antepartum patients with nonhospitalized high-risk antepartum patients.

The instrument used to collect the data was the Multiple Affect Adjective Check List (MAACL), a tool that has been widely used to measure trait and state affective behavior. Analysis of the data was accomplished by the use of descriptive statistics and three nonparametric statistical tests: Wilcoxin matched pairs signed ranks, Kruskal-Wallis one way analysis of variance by ranks, and post-hoc multiple confidence-interval procedures for significant findings from the Kruskal-Wallis test.

Nine Wilcoxin matched pairs signed ranks tests were used to compare differences in trait and state affect behavior for each group of antepartum patients. The data analysis indicated that the normal antepartum patients' In General (trait) and Today (state) MAACL scores were not significantly different ($p<.05$). However, the nonhospitalized high-risk antepartum patients and hospitalized high-risk antepartum patients had significantly higher Today scores than In General scores in all three--anxiety, depression, and hostility--and indicated increased changes in the degree of anxiety, depression, and hostility experienced among high-risk antepartum patients.

Six Kruskal-Wallis one way analysis of variance were used to determine differences between the three groups in

terms of state and trait anxiety, depression, and hostility. In General scores were not significantly different between the three antepartum groups. However, Today scores did differ significantly in anxiety, depression, and hostility between the three groups. This indicated that there was a difference in the degree of state affect experienced by at least one of the antepartum groups. Therefore, three post-hoc multiple confidence intervals were computed to determine precisely which groups differed. Significant differences were found between normal antepartum patients, and nonhospitalized high-risk antepartum patients; and between normal antepartum patients and high-risk antepartum patients. No differences were found between the two high-risk groups in terms of their Today scores although the depression and hostility variables indicated a strong trend toward significance. Significant differences existed between the normal group and the two high-risk groups ($p<.05$) in all three state affect behaviors.

## Conclusions

The study was conducted to gain information about antepartum patients' stress reactions. When interpreting the data, it must be remembered that the sample was drawn from antepartum patients at one obstetrical-gynecological clinic and an affiliated woman's hospital. Therefore, it

would be inappropriate to make generalizations beyond this population.

Based on the findings and within the limitations of this study, the following conclusions seem justified:

1. Nonhospitalized high-risk antepartum patients and hospitalized high-risk antepartum patients' state affect behavior differed from their trait affect behavior, while the normal antepartum patients' trait and state affect did not differ. This finding suggested that high risk antepartum patients experience a higher degree of stress than normal antepartum patients. Therefore, maternal physiological stress could have been a determinant of emotional stress for these antepartum patients.

2. Normal antepartum patients, nonhospitalized high-risk antepartum patients, and hospitalized high-risk antepartum patients did not differ in their trait affect. This finding suggested that all the subjects were similar in their general psychological behavior before pregnancy. However, since the three groups differed in their state affect, variations in pregnancy health conditions and/or hospital confinement were probably factors in determining the degree of stress experienced by antepartum patients.

3. Although the normal antepartum patients were significantly different from both high-risk groups in terms of state affect, the high-risk groups did not differ from

each other in this behavior. Therefore, normal antepartum patients were less stressed than high-risk antepartum patients. The degree of stress increased with a diagnosis of high-risk, but high-risk antepartum patients who required hospitalization did not differ from the nonhospitalized high-risk patients in terms of stress at conventional significance levels. This finding does not support previous research findings that hospitalization increases individuals' stress levels. However, there were trends in the data described in the following conclusion.

4. Higher depression and hostility scores were indicated by hospitalized high-risk antepartum patients when compared with nonhospitalized high-risk antepartum patients. Although these were trends and not significantly different ($p<.1$), they deserve further investigation. A larger sample size, or combinations of certain sets of variables such as age, cultural background, and previous pregnancy complications might provide more conclusive findings regarding the effect of hospitalization on stress among high-risk antepartum patients.

## Implications

Present trends in nursing are gravitating toward the "total person" approach to patient care. No longer are nurses relying on the treatment and management of physical

disease as the rehabilitating force of patient recovery. The patient is viewed as an integration of related physiological, psychological, sociological, and developmental components. Thus, nursing intervention can only be successfully achieved when patient adaptation in all of these areas is considered.

The interrelationship of psychological, physiological, sociological, and developmental factors in pregnancy has been addressed by several authors, and is reported in the literature. This investigation supported the interrelationship of these factors in that the high-risk antepartum patient experienced greater psychological stress than normal antepartum patients. These findings point to the need for nursing care that focuses on reduction of anxiety, depression and hostility in high-risk antepartum patients. Although further research is needed to identify the effectiveness of specific interventions in reducing stress related to being a high-risk pregnant patient, the results of this study can provide the initial data needed to support the value for these future research projects.

## Recommendations

Based on the findings of this study the following recommendations are made:

1. That the role of patient education be assessed for its effectiveness in relieving psychological stress.
2. That further research be conducted to determine the effectiveness of specific nursing interventions in relieving psychological stress of high-risk antepartum patients.
3. That this study be replicated with greater control over the following variables: age, socioeconomic status, race, education, cultural background, and previous obstetrical complications, so that the effect of these variables can be assessed in determining psychological stress of the high-risk antepartum patient.

# APPENDIX A

# AGENCY PERMISSION

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING
DENTON, TEXAS 76204

DALLAS CENTER
1810 INWOOD ROAD
DALLAS, TEXAS 75235

HOUSTON CENTER
1130 M. D. ANDERSON BLVD.
HOUSTON, TEXAS 77025

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE_____

GRANTS TO Edna M. Pearson Robinson, B.S.N.
a student enrolled in a program of nursing leading to a Master's Degree at Texas Woman's University, the privilege of its facilities in order to study the following problem:

A Comparison of Hospitalized and Non-Hospitalized High-Risk Antepartum Patients in Terms of Psychological Stress

The conditions mutually agreed upon are as follows:

1. The agency (may) (may not) be identified in the final report.
2. The names of consultative or administrative personnel in the agency (may) (may not) be identified in the final report.
3. The agency (wants) (does not want) a conference with the student when the report is completed.
4. The agency is (willing) (unwilling) to allow the completed report to be circulated through interlibrary loan.
5. Other_____

_____

_____

Date:_____ _____
Signature of Agency Personnel

_____ _____
Signature of Student Signature of Faculty Advisor

* Fill out and sign three copies to be distributed as follows: Original-Student; First copy - agency; Second copy - TWU College of Nursing.

GP:GEN 13
07026074 cd

TEXAS WOMAN'S UNIVERSITY
HOUSTON CAMPUS
HUMAN RESEARCH REVIEW COMMITTEE
REPORT

STUDENT'S NAME Edna M. Pearson Robinson, B.S.N.

PROPOSAL TITLE A Comparison of Hospitalized and Non-Hospitalized High-Risk Antepartum Patients in Terms of Psychological Stress

COMMENTS: _____

DATE: May, 1979

Disapprove approve

Disapprove approve

Disapprove approve

Disapprove approve

kw

# APPENDIX B

# QUESTIONNAIRE PACKET

Subject Consent for Participation in the Following Research Study:

A COMPARISON OF HOSPITALIZED AND NON-HOSPITALIZED HIGH-RISK ANTEPARTUM PATIENTS IN TERMS OF PSYCHOLOGICAL STRESS REACTIONS

---

I would like to invite you to participate in a study I am conducting in this institution to determine the degree of psychological stress reactions of antepartum patients, and to compare hospitalized high-risk, non-hospitalized, and normal antepartum patients in terms of these stress reactions. If you decide to participate, I would like you to complete the check lists accompaning this form. Please check the list entitled In-General form first. The data will be reported in a Masters Degree Thesis.

The cost to you for this study is as follows:

1. Economic: None.
2. Personal: Approximately 5 mimutes to complete both check lists.

The benefit to you is as follows:

1. Findings may assist nurses in planning care for antepartum patients.
2. Findings will increase knowledge of stress to the antepartum patient.

Any information that is obtained in connection with this study and that can be identified with you, will remain confidential. You will not be identified by name in this study, nor will this institution be identified by name. Your decision whether or not to participate will not prejudice your future relations with this institution. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without prejudice.

I will be glad to answer any questions you may have regarding this study. Later, if you have questions please contact me:

Edna Robinson, 13103 Buxley, Houston, Texas, 7212782

YOU ARE MAKING A DECISION WHETHER OR NOT TO PARTICIPATE IN THIS STUDY. YOUR SIGNATURE INDICATES THAT YOU HAVE DECIDED TO PARTICIPATE HAVING READ THIS INFORMATION.

I hereby agree to participate in the study as described above. An offer to answer all my questions regarding the study has been made. I understand that I may terminate my participation in the study at anytime.

Subject's Signature _____

Date _____

## EXAMPLE OF MAACL IN GENERAL FORM

The following is an example of the MAACL In General Form. Not all items are included, for the test can not be reproduced in total. These are 28 of the adjectives included in the test. The actual number of adjectives is 132. The MAACL is available through Education and Industrial Testing Service, Box 7234, San Diego, California 92107. The adjectives are listed here according to their numbered sequence on the actual test.

Directions: On this sheet you will find words which describe different kinds of moods and feelings. Mark an X in the boxes beside the words which describe how you generally feel. Some of the words may sound alike, but I want you to check all the words that describe your moods and feelings. Work rapidly.

| | | |
|---|---|---|
| 1. ___active | 40. ___energetic | 85. ___offended |
| 3. ___affection | 45. ___fit | 90. ___pleased |
| 5. ___agitated | 50. ___frightened | 100. ___satisfied |
| 10. ___amiable | 55. ___gloomy | 105. ___steady |
| 15. ___bashful | 60. ___healthy | 110. ___sullen |
| 20. ___cautious | 65. ___indignant | 115. ___tense |
| 25. ___contrary | 70. ___joyful | 120. ___tormented |
| 30. ___cruel | 75. ___low | 125. ___vexed |
| 35. ___disagreeable | 80. ___merry | 130. ___wilted |
| | | 132. ___young |

## EXAMPLE OF MAACL TODAY FORM

The following is an example of the MAACL Today Form. Not all items are included, for the test can not be reproduced in total. These are 28 of the adjectives included in the test. The actual number of adjectives is 132. The MAACL is available through Education and Industrial Testing Service, Box 7234, San Diego, California 92107. The adjectives are listed here according to their numbered sequence on the actual test.

Directions: On this sheet you will find words which describe different kinds of moods and feelings. Mark an X in the boxes beside the words which describe your moods and feelings during this pregnancy. Some of the words may sound alike, but I want you to check all the words that describe your moods and feelings. Work rapidly.

| | | |
|---|---|---|
| 1. ___active | 40. ___energetic | 85. ___offended |
| 3. ___affection | 45. ___fit | 90. ___pleased |
| 5. ___agitated | 50. ___frightened | 100. ___satisfied |
| 10. ___amiable | 55. ___gloomy | 105. ___steady |
| 15. ___bashful | 60. ___healthy | 110. ___sullen |
| 20. ___cautious | 65. ___indignant | 115. ___tense |
| 25. ___contrary | 70. ___joyful | 120. ___tormented |
| 30. ___cruel | 75. ___low | 125. ___vexed |
| 35. ___disagreeable | 80. ___merry | 130. ___wilted |
| | | 132. ___young |

BIBLIOGRAPHY

Abdellah, F., & Levine, E. Better patient care through nursing research. New York: The Macmillan Co., 1965.

Ballou, J. W. The psychology of pregnancy: Reconciliation and resolution. Lexington: Lexington Books, D. C. Heath and Co., 1978.

Barnett, J. W. Patients' emotional reactions to hospitalization: an exploratory study. Journal of Advanced Nursing, 1976, 1(5), 351-356.

Benedek, T. Towards the biology of the depressive constellation. Journal of The American Psychoanalytic Association, 1956, 4, 389-427.

Benedek, T. The psychobiology of pregnancy. In J. Anthony & T. Benedek (eds.), Parenthood: Its psychology and psychopathology. Boston: Little, Brown & Co., 1970.

Blau, A., Slaff, B., Easton, D. Welkowitz, J., & Coher, J. The psychogenic etiology of premature births: A preliminary report. Psychosomatic Medicine, 1963, 25(3), 201-211.

Brown, M., & Fowler, G. Psychodynamic nursing: a biosocial orientation. Philadelphia: W. B. Saunders Co., 1971.

Burrell, Z. L., Jr., & Burrell, L. O. Critical care (3d ed.). St. Louis: C. V. Mosby, 1977.

Cassidy, J. E. A nurse looks at childbirth anxiety. Journal of Obstetric, Gynecologic, and Neonatal Nursing, 1974, 3(1), 52-54.

Chertok, L. Desir d'endant et vomissement. Paper presented at World Congress for Psychiatry, Montreal, June 1961.

Chertok, L., Mondzain, M. L., & Bonnaud, M. Vomiting and the wish to have a child. Psychosomatic Medicine, 1963, 25(1), 13-18.

Colman, A., & Colman, L. Pregnancy: The psychological experience. New York: Herder & Herder, 1971.

Dichter, E. The hospital-patient relationship: What the patient really wants from the hospital. Modern Hospital, 1954, 83(3), 51-54.

Downie, N. M., & Heath, R. W. Basic statistical methods (4th ed.). New York: Harper & Row, 1974.

Duff, R., & Hollingshead, A. Sickness and society. New York: Harper & Row, Publishers, 1968.

Dumas, R. G. Utilization of a concept of stress as a basis for nursing practice. In ANA Clinical Sessions American Nurses' Association 1966. San Francisco. New York: Appleton-Century-Crofts, 1967.

Ferreira, A. J. The pregnant mother's emotional attitude and its reflection upon the newborn. American Journal of Orthopsychiatry, 1960, 30, 553-561.

Ferreira, A. J. Emotional factors in the prenatal environment. Psychosomatic Medicine, 1962, 24(1), 16-17.

Ferreira, A. Prenatal environment. Illinois: Charles C. Thomas, 1969.

Fraser, F. C. Antenatal factors in congenital defects: Problems and pitfalls. New York State Journal of Medicine, 1959, 59(4), 1597-1605.

Griffith, S. Pregnancy as an event with crisis potential for marital partners: A study of interpersonal needs. Journal of Obstetric, Gynecologic, and Neonatal Nursing, 1976, 5(6), 35-38.

Grimm, E. Psychological investigation of habitual abortion. Psychosomatic Medicine, 1962, 24(4), 369-378.

Grimm, E., & Venet, W. The relationship of emotional adjustment and attitudes to the course and outcome of pregnancy. Psychosomatic Medicine, 1966, 28(1), 34-49.

Howells, J. G. Modern perspectives in psycho-obstetrics. New York: Brunner and Magel, 1972.

Janis, I. L. Psychological stress. New York: John Wiley & Sons, Inc., 1958.

Jense, M., Benson, R., & Bobak, I. Maternity care: The nurse and the family. St. Louis: The C. V. Mosby Co., 1977.

Kerlinger, F. S. Foundations of behavioral research (2d ed.). New York: Holt, Rinehart, & Winston Corp., 1973.

Kroger, W. S., & DeLee, J. The psychosomatic treatment of hyperemesis gravidarum by hypnosis. American Journal of Obstetrics and Gynecology, 1946, 51(4), 544-552.

Light, H., & Fenster, C. Maternal concerns during pregnancy. American Journal of Obstetrics and Gynecology, 1974, 118(1), 46-50.

Macfarlane, A. The psychology of childbirth. Cambridge: Harvard University Press, 1977.

Mann, E. Habitual abortion. American Journal of Obstetrics and Gynecology, 1959, 77(4), 706-718.

Maroscuilo, L., & McSweeney, M. Nonparametric and distribution-free methods for the social sciences. Monterey, Calif.: Brooks/Cole Publishing Co., 1977.

Moffic, H. S., & Paykel, E. S. Depression in medical inpatients. British Journal of Psychiatry, 1975, 126(4), 346-353.

Moos, R. H. Human adaptation. Lexington: D. C. Heath & Company, 1976.

Neal, M., Cohen, P., & Cooper, P. The effects of hospitalization: Part C/prolonged confinement. Nurse Update Review Seminar Guide No. 1:42. Calif.: NURSE Co., 1974.

Neuman, B. The Betty Neuman Health Care Systems Model: A total person approach to patient problems. In J. Riehl & C. Roy (eds.), Conceptual models for nursing practice. New York: Appleton-Century-Crofts, 1974.

Nuckolls, K., Cassel, J., & Kaplan, B. Psychosocial assets, life crisis and the prognosis of pregnancy. American Journal of Epidemiology, 1972, 95(5), 431-440.

Rapoport, L. The state of crisis: theoretical considerations. In H. Parad (ed.), Crisis intervention: selected readings. New York: Family Service Association of America, 1967.

Rees, W. L. Anxiety factors in comprehensive patient care. New York: American Elsevier Company, Inc., 1973.

Reichle, M. Psychological stress in the Intensive Care Unit. Nursing Digest, 1975, 3(3), 12-15.

Riehl, J., & Roy, C. Conceptual models for nursing practice. New York: Appleton-Century-Crofts, 1974.

Ringrose, D. Psychopathology of toxemia of pregnancy. In J. Howells (ed.), Modern perspectives in psycho-obstetrics. New York: Brunner and Magel, 1972.

Roberts, S. Behavioral concepts and the critically ill patient. New Jersey: Prentice-Hall, Inc., 1976.

Robinson, L. Psychological aspects of the care of hospitalized patients (3d ed.). Philadelphia: F. A. Davis Company, 1976.

Rosen, E. Concerns of an obstetric patient experiencing long-term hospitalization. Journal of Obstetric, Gynecologic and Neonatal Nursing, 1975, 4(2), 15-19.

Rubin, R. Maternal tasks in pregnancy. Nursing Digest, 1976, 6, 91-94.

Schutz, W. The interpersonal underworld. Palo Alto, Calif.: Science and Behavior Books, 1966.

Siegel, S. Nonparametric statistics for the behavioral sciences. New York: McGraw-Hill Book Company, 1956.

Sontag, L. W. The significance of fetal environmental differences. American Journal of Obstetrics and Gynecology, 1941, 42(6), 996-1003.

Sontag, L. W. The genetics of differences in psychosomatic patterns in childhood. American Journal of Orthopsychiatry, 1950, 20, 479-489.

Sontag, L. W., & Wallace, R. F. Study of fetal activity. American Journal of Diseases of Children, 1934, 48(5), 1050-1057.

Spellacy, W. Management of the high-risk pregnancy. Baltimore: University Park Press, 1976.

Spielberger, C., & Sarason, I. Stress and anxiety (4th ed.). New York: John Wiley and Sons, 1977.

Stott, F. D. Physical and mental handicaps following a disturbing pregnancy. Lancet, 1957, 1, 1006-1011.

Strean, L., & Peer, L. Stress as an etiologic factor in the development of cleft palate. Plastic Reconstruction Surgery, 1956, 18(1), 1-8.

Taylor, C. In horizontal orbit: Hospitals and the cult of efficiency. New York: Holt, Rinehart and Winston, 1970.

Turner, E. The syndrome in the infant resulting from maternal emotional tension during pregnancy. Medical Journal of Australia, 1956, 1(6), 221-222.

Walser, H. Fear: important etiological factor in obstetric problems. American Journal of Obstetrics and Gynecology, 1948, 55(6), 799-805.

Weidorn, W. Toxemia of pregnancy and schizophrenia. Journal of Nervous and Mental Disease, 1954, 120(1-2), 1-9.

Zuckerman, M. The development of an affect adjective check list for the measurement of anxiety. Journal of Consulting Psychology, 1960, 24(5), 457-452.

Zuckerman, M., & Biase, D. V. Replication and further data on the affect adjective check list measure of anxiety. Journal of Consulting Psychology, 1962, 26(3), 291.

Zuckerman, M., Lubin, B., Vogel, L., & Valerius, E. Measurement of experimentally induced affects. Journal of Consulting Psychology, 1964, 28(5), 418-425.

Zuckerman, M., & Lubin, B. Manual for the Multiple Affect Adjective Check List. San Diego, Calif.: Educational and Industrial Testing Service, 1965.

Zuckerman, M., Lubin, B., & Robins, S. Validation of the multiple affect adjective check list in clinical situations. Journal of Consulting Psychology, 1965, 29(6), 594.

Zuckerman, M., Nurnberger, J. A. Vandineer, J. M., Barrett, B.H., & denBreeijen, A. Psychollgical correlates of somatic complaints in pregnancy and difficulty in childbirth. Journal of Consulting Psychology, 1963, 27(4), 324-329.

Zuckerman, M., Persky, H., & Link, K. The relation of mood and hypnotizability: An illustration of the importance of the state vs. trait distinction. Journal of Consulting Psychology, 1967, 31(5), 464-470.