STRESSFUL POSTPARTUM PSYCHOLOGIC REACTIONS IN ADOLESCENT AND ADULT AFRICAN-AMERICAN MOTHERS OF LOW BIRTHWEIGHT INFANTS

A THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF MASTER OF SCIENCE

IN THE GRADUATE SCHOOL OF THE

TEXAS WOMAN'S UNIVERSITY

COLLEGE OF NURSING

BY

LAURIE B. BRADSHAW, R.N., B.S.N.

DENTON, TEXAS

AUGUST, 1994

June 10, 19 94

To the Associate Vice President for Research and Dean of the Graduate School:

I am submitting herewith a thesis written by Laurie B. Bradshaw, entitled "Stressful Postpartum Psychologic Reactions in Adolescent and Adult African-American Mothers of Low Birthweight Infants." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Nursing.

Sandra K. Goodnough Hanneman
Sandra K. Goodnough Hanneman,
Major Professor

We have read this thesis and recommend its acceptance:

Betty Henderson
Robin Burns Britt
Judith L. Stocks

Dean of College

Accepted

Leslie M Thompson
Associate Vice President for Research and
Dean of the Graduate School

ACKNOWLEDGMENTS

I acknowledge and thank my co-investigator, Kristen Oelman Miles, R.N., M.A. Without her this thesis would not have been possible.

I would like to express my gratitude and appreciation to Sandra K. Goodnough-Hanneman R.N., Ph.D.for the unwavering expertise and compassion that she provided as my thesis chairperson. I would also like to thank my committee members, Robin Britt, R.N., Ed.D., Judith Stocks, R.N., Ph.D., and Betty Henderson, R.N.,M.N. In addition I would like to thank my family; Bryan, Michael, and Casey for their patience and faith. I would also like to thank my close friend William for the personal support he provided, and the hours he spent assisting with formatting.

STRESSFUL POSTPARTUM PSYCHOLOGIC REACTIONS IN ADOLESCENT AND ADULT AFRICAN-AMERICAN MOTHERS OF LOW BIRTHWEIGHT INFANTS

ABSTRACT

LAURIE BRADSHAW, RN, BSN

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING
AUGUST, 1994

A descriptive cross-sectional design was used to test the hypothesis that adolescent African-American mothers of low birthweight infants would have greater stressful postpartum psychologic reaction than adult African-American mothers of low birthweight infants. The convenience sample consisted of 25 adolescent and 28 adult mothers. All had Medicaid or Medicaid eligibility.

Descriptive and inferential statistics were used to analyze data. There were no significant differences between stressful postpartum psychologic reactions in the two groups of mothers as measured by the MAACL-Today Scale. Questions regarding the validity of the instrument for measuring stressful psychologic reaction in low-income postpartum African-American mothers were raised. It appeared that no

stress is imposed in the early postpartum period for the African-American mothers studied by the birth of an infant weighing less than 2500 grams.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1

INTRODUCTION

Research indicates that low birthweight infants comprise 7% of all births in the United States (McCormick, 1985). Most of these infants are preterm, and modern medical technology is increasing the number of low birthweight infants that survive. These facts have far reaching economic implications for the health care system, as well as society.

Young, poor, unmarried, and less well-educated mothers are giving birth to the greatest number of low birthweight infants (Brown, et al., 1989). Statistics indicate that of this population African-American adolescents have a birth rate nearly twice as high as Caucasian adolescents (The Institute of Medicine, 1985). Furthermore, African-American adolescents are 60% more likely then Caucasians to be single mothers (National Center for Health Statistics, 1991).

In 1989, 15.8% of the female adolescents in the United States were African-American, yet these young women accounted for 30.4% of the births to adolescents that year. From 1983 to 1989, the birthrate for African-American females aged 15 to 19 years increased 20%, yet the birthrate for Caucasian-Americans aged 15 to 19 years increased 8.4% in the same time period (Gibbs, 1992).

The birth of any infant requires a role transition by the parents, and this transition may have a negative impact on psychological well-being (Dohrenwend & Dohrenwend, 1974; Barrett, 1979). The birth of a low birthweight infant has been shown to produce significantly more stress than the birth of a normal birthweight infant (Trause & Kramer, 1983; Jeffcoate, Humphrey & Lloyd, 1979). Increased stressful psychological reaction in mothers of preterm infants appears to be related to difficulty in adapting to these low birthweight newborns (Mercer, 1977).

The birth of a child is considered by many researchers to be a maturational or developmental stressor. Erikson (1963) stated that stressors are often maturational or developmental in nature. Stressors occur simultaneously with predictable, commonplace events that are generally associated with the ordinary maturation of an individual (i.e., marriage, birth of a child, death of a spouse). Stressors may also be situational or unpredictable, such as accidents or illnesses. Such events may potentially affect any family or individual.

Adolescence, pregnancy, and parenthood are considered maturational stressors, yet are not generally expected to occur simultaneously. According to Erikson (1968), adolescence is a time of tremendous change and excitement, a time when adolescents are expected by society to begin defining their interests in relation to life choices and establishing a sense of identity. The maturational stressor of adolescence itself

is compounded when the adolescent is pregnant and/or a new parent. Identity development may be delayed and motherhood may take the form of a situational stressor. The teenage mother may not have completed the developmental tasks of adolescence before being faced with the tasks of motherhood. The birth of a low birthweight infant further complicates the stressor of childbirth. The potential failure of achieving developmental milestones may be a basis for difficulties in the parenting role (Butnarescu, 1982).

The development of an individual occurs through the resolution of the different sequential stages of development, and behavioral outcomes are determined by the successful or unsuccessful completion of each stage (Erikson, 1963; Holt & Johnson, 1991). Many problems have been associated with adolescent motherhood. Research has found a higher incidence of health problems in both mothers and infants, as well as increased unemployment, poverty, divorce, and child abuse (Ruff, 1987). Other research has demonstrated that the adolescent's adaptation to parenthood may be a more difficult process than the adult's, as it necessitates a simultaneous focus on the various developmental tasks of parenthood and adolescence, while dealing with cognitive skills that may not yet be fully developed (Butnarescu, 1982).

The degree of stress typically associated with childbirth is magnified in the adolescent due to the conflicting nature of her own development and search for identity, with the role of

motherhood itself (Becker, 1987). The majority of adolescent mothers are less likely to receive early or any prenatal care (National Center for Health Statistics, 1980). Adolescent mothers are also more likely to be unmarried, less well-educated, and financially dependent by virtue of their age.

Ruff (1987) reported that adolescents do not 'mother' as well as adults. Adolescents do not understand the growth and development process of their infants and offer less than optimal stimulation. Adolescent mothers tend to be insensitive, impatient, and prone to use physical punishment with their infants, thus increasing the risk of child abuse (DeLissovoy, 1973; Fontana, 1980; Jarrett, 1982; Sandler, 1979).

As adolescents deliver one in every six infants born in this country, a significant economic and human cost to society exists (Kemp, Sibley, & Pond, 1990). From an economic standpoint, adolescent mothers have more potential health problems, emotional stress, and interrupted education, resulting in a higher risk for unemployment, poverty, and welfare dependency (Mercer, 1979; Chilman, 1980). Additional costs are incurred for the care of abused children. The human costs are tremendous in terms of lost or decreased potential for both the adolescent mothers and their infants, and many infants of adolescent mothers grow up with health, behavioral, developmental, and cognitive problems (Hardy, Welcher, & Dallas, 1978).

Problem of Study

The study was proposed to examine two groups of African-American mothers of low birthweight infants, one group consisting of adolescents and the other of adults. This study was a collaborative effort undertaken by two master's degree seeking students in a maternal-child health program. Data collection and analysis were shared, as was the writing of Chapters One and Three in both documents. The companion thesis by Oelman (1994) focuses on the conceptual implications of psychologic reaction whereas this thesis focuses on psychometric aspects of the instrument used in the study. It was believed that differences in postpartum psychologic reactions would be found between the two groups, and that knowledge of such would be helpful in guiding nurses and healthcare givers in the planning of age-appropriate interventions to enhance the care of African-American mothers of low birthweight infants.

Rationale for Study

The birthrate in African-American mothers was 2.3% in 1989 per 1000 people, as compared to 1.5% per 1000 people in 1989 for Caucasians (U.S. Department of Commerce, 1992). African-American newborns are more than twice as likely to be low birthweight at the time of delivery as are Caucasian newborns (The Institute of Medicine, 1985). Between 1983 and 1989, the birthrate for Caucasian adolescent women increased by 8.4%,

while the birthrate for African-American adolescent women increased by 20% (National Center for Health Statistics, 1991). African-American adolescent mothers, therefore, constitute a particularly high-risk group, and this situation needs to be addressed by the United States healthcare system, as well as by society.

The level of depression, anxiety, and stress has been shown to be greater in mothers of preterm and low birthweight infants when compared to mothers of term, normal birthweight infants (Gennaro, Zukowsky, Brooten, Lowell, & Visco, 1990; Trause & Kramer, 1983; Jeffcoate, Humphrey & Lloyd, 1979). It has been suggested that the increased stress felt by mothers and families at the birth of a low birthweight infant is the perceived failure to have the idealized baby (Caplan, Mason, & Kaplan, 1965; Medoff-Cooper, 1986; Scheiner, Sexton, Rockwood, Sullivan & Davis, 1985). Young mothers may be especially susceptible to these stresses, and high levels of anxiety in young mothers may impede the adaptation to motherhood (Brooten, et al., 1988; Pond & Kemp, 1992). Furthermore, maternal stress appears to be associated with altered mother-infant interaction (Crnic, Greenberg, Ragozin, Robinson & Basham, 1983; Crnic, Greenberg, Robinson & Ragozin, 1984; Minde, Whitelaw, Brown & Fitzhardinge, 1983) and may impact infant health (Levy, 1980; McCormick, 1985; Mercer, 1986). The findings of Gennaro and Stringer (1991) demonstrated that infants of mothers with high levels of early postpartum anxiety and depression had more

acute care visits to health care facilities than did infants of mothers with lower levels of anxiety and depression.

There are conflicting research results concerning similarities or differences in stress levels between adult and adolescent mothers of low birthweight infants. Blumberg (1980) reported that younger mothers of ill neonates had higher depression and anxiety levels than older mothers of comparably high-risk newborns. The event of birth has also been correlated to higher depression levels in young mothers (Hayworth, et al., 1980). However, no differences in anxiety, depression, and hostility were found between younger and older mothers of low birthweight infants in Brooten et al.'s study (1988). Additionally, Mercer (1985) found no significant differences between adolescents and adults in the process of maternal role attainment. However, Ruff (1987) discovered differences within the adolescent group, stating that younger adolescents had more difficulty adapting to their new role as a mother than older adolescents. Thus, a need exists for further study of possible differences between adults and adolescents.

Interventions designed to decrease stress are especially important for mothers of preterm low birthweight infants because more stress is experienced in the early postpartal period by these mothers than by mothers of full term infants (Gennaro, Brooten, Roncoli & Kumar, 1993). Although most infants weighing between 1500 and 2500 grams are kept in the hospital a relatively short period of time, hospital-based

nurses are in a position to intervene to decrease maternal susceptibility to the stress of having a low birthweight infant. Before steps can be taken towards developing interventions for these mothers, it is necessary to determine if the stress, or psychologic reaction, to the birth of a low birthweight infant is different between adolescent and adult mothers. The developmental level of mothers may need to be considered in planning nursing interventions. Currently, interventions assume similar postpartum psychologic reactions, regardless of maternal developmental level. Dissimilar psychologic reactions would suggest the need for different interventions.

Conceptual Framework

For the purpose of this study, the conceptual model of stress by Elliot and Eisdorfer (1982) was used. Stress has been a widely studied phenomenon and, as a result, has a large array of definitions. Depending on the situation, stress may be defined as a stimulus, the reaction to that stimulus, or the consequence of that reaction. Unfortunately, the varied conceptualizations of stress have led researchers away from the critical analysis of how stress impacts or causes disease. Elliot and Eisdorfer (1982) compiled and systematized the relevant research on stress to provide a model which enables investigators to study more thoroughly the mechanisms through which stress produces consequences. The framework categorizes

the many definitions of stress and highlights their interrelationships, and provides an understanding of the elements that impact the interaction between an individual and the environment. Inherent in the model is the allowance that the same experience can result in disparate outcomes for different people.

The following definitions explain the crucial elements in the Elliot and Eisdorfer Stress and Human Health Model (Elliot & Eisdorfer, 1982):

Activators (stressors) are those internal and external environmental factors that alter an individual's present state. An activator does not have to be a real event or stimulus, but may also be the lack of an event that evokes a change (e.g., unmet expectation).

Potential activators (stressors) are those that have been empirically known to be stressors under certain situations. A potential activator need only have the quality of being able to affect a change. Birth may be a potential or actual stressor.

Reactions are the psychosocial or biological responses of an individual to an activator. Reactions can occur at different levels of intensity, and may be transient in nature with little observable effect, or develop into a more noted and severe consequence. Psychologic reactions can occur in response to a potential or actual stressor.

Consequences are the sequela to reactions. It is often difficult to differentiate between a reaction and a

consequence, but a reaction tends to be more ephemeral, while a consequence may be more extensive or cumulative. For instance, emotional or physical illness is considered a consequence.

Mediators are the "filters and modifiers that act on each stage in the sequence to produce individual variations in the sequence" (Elliot & Eisdorfer, 1982; p. 22). Mediators help explain why exposure to potential stressors produce no apparent consequences in some, and marked consequences in others. For example, social support is considered a mediator.

This model describes the relationship between an individual and the environment. First, something in the environment may become an activator; secondly, the individual may react to that activator; and thirdly, that reaction may lead to a consequence (Elliot & Eisdorfer, 1982). All of the components described in this model are interrelated.

In the context of this study, the potential stressor was the birth of a low-birthweight infant, the stressful psychologic reactions were anxiety, depression, and hostility; and the potential consequences were emotional and/or physical illness (e.g., possible parenting difficulties). Age of the mother was a mediator of the potential stressor of the birth of a low birthweight infant. For this research, the effect of maternal age/level of development as a mediator of psychologic reaction to the potential stressor of the birth of a low birthweight infant was measured and compared in two groups of African-American mothers of low birthweight infants.

A supplemental framework utilized in guiding the hypothesis was Erikson's psychosocial theory of development (1963) which provides support for the idea of maternal age/developmental level as a mediator of stress in this study. Erikson believed in epigenesis, or a time plan for maturational processes. Erikson explained epigenesis as follows: "Anything that grows has a ground plan, and... out of this ground plan the parts arise, each having its time of special ascendency until all parts have arisen to form a functioning whole" (Erikson, 1963, p. 52). Both psychologic and physical components come together in an individual in Erikson's theory which outlines eight stages of development, each with developmental tasks that must be accomplished in order to move towards maturity and wholeness (Salkind, 1981).

Briefly, the two developmental stages this study was concerned with, the approximate period during which they occur, and their tasks, are as follows:

Identity vs. role confusion (adolescence): older children are attempting to establish an identity, asking, "Who am I?" If the adolescent's environment is less than supportive or if difficulty is met in the attempts to establish a role, confusion results.

Intimacy vs. isolation (young adulthood): companionship and intimacy with other people are sought at this stage. Intimate relationships may exist with lovers, spouses, friends

and the person's own children. If intimacy cannot be established, isolation results (Berger, 1983; Salkind, 1981).

Erikson (1968) suggested that the search for identity must be accomplished before it is possible to begin an intimate relationship. Although adolescents are often physically able to conceive and bear children, their lives are focused on personal desires and the search for identity, experiences which are not conducive to dealing with an infant's needs (Young, 1987; Holt & Johnson, 1991).

Assumptions

The basic assumptions of this study were derived from the Stress and Human Health Model (Elliot & Eisdorfer, 1982), and Erikson's psychosocial theory of development (1963).

1. The birth of a low birthweight infant is a potential stressor.

2. Mothers of low birthweight infants experience stressful psychologic reaction, a potential precursor to a consequence.

3. Maternal age/developmental level is a mediator of stress.

4. Development is a sequential process, with completion of each stage being necessary for the beginning of the next.

Hypothesis

The research hypothesis was: Adolescent African-American mothers of low birthweight infants will have greater postpartum stressful psychologic reaction than adult African-American mothers of low birthweight infants as measured by the Multiple Affect Adjective Checklist Today Scale (MAACL-Today Scale) (Zuckerman & Lubin, 1965).

Definitions of Terms

The following terms were defined for this study as follows:

1. Stressful postpartum psychologic reaction was conceptually defined as the maternal postpartum response to the potential stressor of a low birthweight infant (Elliot & Eisdorfer, 1982). Stressful psychologic reaction was operationally defined as the summated scores on the subscales for anxiety, hostility, and depression (total negative affect score) as measured by the Multiple Affect Adjective Checklist (MAACL) using the Today Scale (Zuckerman & Lubin, 1965).

2. Adolescence was conceptually defined according to Erikson (1963) as a period of maturational stress as the adolescent is seeking identity. This term was operationally defined as 12 to 17 years of age.

3. Adulthood was conceptually defined according to Erikson (1963) as a period where maturational stresses

arelikely to occur with the onset of pregnancy and parenthood. This term is operationally defined as age 21 years and older.

4. Low birthweight infant was conceptually defined as a potential stressor (Elliot & Eisdorfer, 1982) that may elicit a stressful maternal postpartum psychologic reaction. It was operationally defined as an infant weighing 1500 to 2500 grams at birth.

Limitations

The limitations of this study included the following:

Subjects were selected using a convenience sampling technique. Only African-American mothers were studied, and the sample was homogeneous with respect to socioeconomic status. Generalization of the findings beyond the specific sample is limited. No attempts were made to control for possible confounding variables such as lack of prenatal care, high risk behaviors during pregnancy, and abnormal laboratory tests. Furthermore, the study did not attempt to determine the consequences of psychologic reactions to the stressor of having a low birthweight infant.

Summary

The purpose of this study was to determine if differences exist in stressful postpartum psychologic reactions (anxiety, hostility and depression) of postpartum adolescent and adult African-American mothers of low birthweight infants.

Insufficient research has been done comparing these two age groups within this ethnic group.

The conceptual framework used in this research was Elliot and Eisdorfer's Stress and Human Health Model (1982). Erikson's psychosocial theory of development (1963) was used to supplement the model of stress, and to provide support for the researchers' beliefs that differences in developmental level would affect maternal stressful psychologic reactions. The researchers assumed that (1) the birth of a low birthweight infant is a potential stressor, (2) mothers of such infants experience stressful psychologic reaction, a potential precursor to a consequence, and (3) maternal age/developmental level is a mediator of this stress. Thus, the researchers hypothesized that adolescent African-American mothers of low birthweight infants would have greater stressful postpartum psychologic reaction than adult African-American mothers of low birthweight infants.

CHAPTER 2

REVIEW OF LITERATURE

This chapter provides a review and synthesis of the literature relevant to the major variables of interest and the population sampled in this study. The literature concerning stressful psychologic reactions associated with adolescent motherhood is discussed first. Next, psychologic reactions in motherhood are compared for adolescents and adults. Third, literature concerning the psychologic reactions of mothers of low birthweight infants is outlined. Finally, the relationships among socioeconomic and cultural factors and motherhood in African-American adolescents are discussed.

Stressful Psychologic Reactions Associated with Adolescent Motherhood

As adolescent pregnancy and motherhood has become increasingly common in Western society, many of the psychological stressors for these young women have been reduced. Individuals within society have been exposed to pregnant adolescents, and teen pregnancy is no longer something just to be read about in the newspapers (Rickel, 1989).

It is evident, however, that adolescent parents suffer far more emotional pressures than their non-parenting peers. Indeed, poor, minority adolescents have been shown to

experience emotional difficulties that last into their children's elementary school years (Brown, Adams, & Kellam, 1981). It is possible, however, that economic and social factors have a greater impact on the mental health of this group than childbearing or rearing (Fisher 1984).

Zongker (1977) studied 88 adolescents (80% African-American) at a secondary school who were voluntarily attending a school for teenage mothers. The control group consisted of a random sample of 108 adolescent women from a centrally located secondary school in the same city (18% African-American, and representative of the county racial proportions). Socioeconomic information was not reported. The Tennessee Self Concept Scale (TSCS) (Fitts, 1964), and an information questionnaire were used to obtain data. Significant differences were found on 13 of 27 variables measured. Zongker (1977) reported that the school-age mothers had poor self-esteem, were less content with their physical appearance and family relationships, and felt generally unworthy and inadequate when compared to the control group. It was not clear if these factors were a cause or a result of pregnancy.

Abernethy, Robbins, Abernethy, Grunebaum, & Weiss (1975) researched adolescent self-concept and found that pregnant adolescents had lower self-esteem than teens who had never been pregnant. These authors maintained that adolescents with low self-esteem devalue themselves, leading to a greater degree of

sexual activity as they search for approval, which in turn leads to an increased risk of pregnancy.

Rich (1990) studied 17 homeless, predominantly African-American, adolescents and their infants who were living in a shelter for homeless adolescent mothers. Subjects were videotaped during feeding times on five occasions during the first year of the infant's life, including a time when the infant was less than one month old. The videotapes were analyzed according to the Nursing Child Assessment Feeding Scale (NCAFS) (Barnard, 1978), and the mean scores compared with normative data that had previously been obtained by the developer of the instrument. Four of the subscales combine to form a parent behavioral score, and the remaining two make up a child behavioral score. Rich (1990) found no significant differences between the parent scores in the subjects and normative data, or national scores. This was attributed to four factors: the desire to be a good mother, the role modeling present due to the professionals who staffed the shelter, the parenting education provided in the shelter, and the fact that a great many of the girls had experience with young siblings. The child behavioral score in the study sample was significantly different from the national child behavioral score. This finding was attributed to the age of the infants at the time of testing, as the majority of videotaped sessions occurred when the infant was over one-month old, and the NCAFS (Barnard, 1978) was designed to be used within the first four

weeks of life. The total feeding score (parent behavioral score plus the child behavioral score) for the sample was significantly different from the national total feeding score. Similar factors to those previously discussed were considered explanatory.

Barthe, Schinke, and Maxwell (1983) compared pregnant and parenting adolescents with adolescents who were not pregnant or parents. They found that for all groups, psychological well-being was far better predicted by circumstantial variables than by childbearing status. Another finding was that both the parenting and pregnant adolescents believed they received more social support than the control group, although the effects of social support appeared to be the greatest for the parenting group.

Nelson, Gumlak, and Politano (1986) studied personality differences between pregnant and non-pregnant, non-parenting adolescents in three groups: (a) primigravadas, (b) multigravidas, and (c)a sexually active control group who were not pregnant or parents. Forty-two subjects made up the convenience sample, 39 of which were African-American. The mean age was 18 years. All subjects were recruited in clinics that served predominantly low-income families. Using the Minnesota Multiphasic Personality (MMPI), the researchers detected significant differences between the pregnant and nonpregnant adolescents, but found minimal differences between

the primigravidas and multigravidas. Primigravidas, however, were more concerned about their bodily functions and health than were the multigravidas. As a group the pregnant adolescents appeared to experience more guilt, feelings of alienation, inferiority, being misunderstood, and isolation. They also found it more difficult to be assertive than did the nonpregnant adolescents.

Colletta and Gregg (1981) studied the ability of 65 African-American adolescents to cope with the stresses of pregnancy and parenthood. They attempted to identify the individual and situational variables that modify adolescent mother's perceived stress. A personal interview was used to assess perceived stress, the extent of social support network, and coping style. Self-esteem was measured via the use of a questionnaire. Multivariate analysis indicated the adolescent's perceived stress was eased by a strong system of social support, high self-esteem, and the willingness to face and deal directly with problems rather than avoiding them. The study also indicated a positive correlation between the total amount of social support received and the amount of maternal behavior demonstrated. In addition, emotional support appeared to be the most important type of support, especially when provided by the mother's immediate family.

Several researchers found that adolescent mothers had low self-esteem and generally negative feelings about themselves and various aspects of their lives (Abernathy et al., 1975;

Zongker, 1977; Nelson, Gumlak, & Politano, 1986). Rich (1990), however, found no differences in the mothering behaviors of homeless adolescents living in a shelter when compared to more 'traditional' mothers, although the sample was handpicked and probably not representative of the homeless adolescent population.

In the context of motherhood, other researchers have demonstrated that social support may lessen stress, increase knowledge of infant and child behaviors, provide positive reinforcement for parental effectiveness and self-esteem, and, at times, provide necessary physical assistance (Barthe, et al., 1983; Colletta & Gregg, 1981). Frequent contact with caring health providers may provide social support, may positively affect maternal behaviors, and may alleviate some of the stressors of adolescent mothers (Rich, 1990).

Stemp, Turner and Noh (1986) determined that social support is extremely difficult to operationalize. When defined as the extent of perceived supportive network of family and friends, no changes were noted in the psychologic distress of postpartum mothers. When defined as marital intimacy, however, social support was significantly associated with psychologic distress.

Brown, Adams, & Kellam (1981) studied 72 families and 79 infants weighing 1500 grams or less over a two-year period in order to determine sociodemographic resources and characteristics of these families. Subjects were obtained via

convenience sampling, and seriously ill, dysmorphic, or non-singleton infants were excluded from the study. In comparison to national norms, the families of the very low birthweight infants studied were more likely to be living in poor, crowded conditions, more likely to be unmarried, and had lower levels of education. Information was collected on a number of demographic variables, as well as family structure, location and type of residence, availability of physical resources, and type of insurance. In addition, follow-up medical visits for the infants as well as length and costs of any rehospitalizations that occurred during the first 18 months of life were tabulated. One conclusion was the families of very low birthweight infants are functioning under an extremely high level of stress. This was supported by the level of poverty observed, the reported incidence of child abuse, the number of infant rehospitalizations, and the number of emergency room visits in the study population. Although the ethnicity of the study population was noted to be diverse, numbers were not provided. However, more than a third of the mothers in the study were under 19 years of age.

Protinsky, Sporakowski, and Atkins (1982) studied identity formation according to Erikson's stages of identity development among pregnant and non-pregnant adolescents. Pregnant adolescents had significantly lower scores on the overall identity score, as well as on three of the five subscales, indicating earlier developmental deficiencies. Furthermore,

data analysis indicated that the pregnant adolescents had not yet developed a realistic perspective of the concept of time, and therefore had greater difficulty delaying prompt gratification in order to work towards a future goal. The greatest difference was found on the subscale which measured initiative versus guilt ego integrity, which is generally learned at the preschool age. This finding indicated that the non-pregnant adolescents were better able to experiment with different roles. Other subscale scores indicated that the pregnant adolescents felt a general sense of inadequacy concerning their abilities and themselves.

Field, Widmayer, Stringer and Ignatoff (1980) studied 150 lower class, African-American mothers and divided them into four groups as follows: (1) 60 adolescent mothers and their preterm infants, (2) 30 adolescent mothers and their full-term infants, (3) 30 adult mothers and their preterm infants, and (4) 30 adult mothers and their full-term infants. Preterm infants were classified as infants that were less than 37 weeks gestation and less than 2500 grams. Full-term infants were at least 40 weeks gestation and weighed more than 2500 grams; numerous instruments were used to evaluate the risks of being born preterm to an adolescent mother, and to assess the effects of an intervention program. The study found that the infants with the greatest risks for developmental problems were born preterm and to the adolescent mothers.

Research indicates that childbirth and parenting are stressful (McLanahan & Adams, 1987), and adolescent mothers are known to have immature coping responses (Mercer, 1990). Adolescents are often unable to separate the stress of caring for an infant from the stress of day to day life or from stress within themselves. They may be more likely to lash out at their child when some other factor is the major cause of their perceived stress, especially if their ego boundaries are immature (Egeland, Breitenbucher, & Rosenberg, 1980). An adolescent's decision making capabilities are less mature than those of an adult due to cognitive level and life experience, as the adolescents are attempting to control and adjust to the stress of adolescence itself. The demands of an infant only compound this stress (Field et al., 1980; Protinsky et al., 1982; Young, 1988; Mercer, 1990).

In summary, the postpartum period is stressful for all women as they attempt to cope with new demands and changes. The birth of a low birthweight infant is an additional stressor. This stress is compounded in the adolescent, who is attempting to cope with emotional ups and downs of adolescence. The adolescents in which the birth rate is the highest, African-Americans living at a low socioeconomic level, may be attempting to cope with the stress of crowded, dirty, and/or unsafe living conditions, unstable family units, and meeting basic survival needs.

Adolescent versus Adult Motherhood

In 1981, the Alan Gutmacher Institute published the findings of a study of European and American women. The Institute's research indicated that reproductive issues and behaviors in the United States are common to both adult and adolescent women. The study concluded that the ramifications of adolescent pregnancy and childbirth may be more closely related to cultural factors, such as the organization of our health care system, sexual identity, and attitudes concerning sexuality rather than age. McLanahan and Bumpass (1988) stated that role models and socialization are the most likely reasons for adolescent motherhood, and this was supported by Williams (1991). When American adults and adolescents are compared, reproductive behavior differs only in degree (McLanahan and Bumpass, 1988). The reactions to motherhood, however, often differ profoundly.

Elster, McAnarney, and Lamb (1983) reviewed over 80 research articles concerning the parental behaviors of adolescent mothers. This landmark work synthesized, compared, and contrasted the published literature with a meta-analysis. The results indicated that adolescent parental behaviors are very different from those of adult mothers. Adolescent mothers tend to be more physical and less verbal with their infants, and have a slightly higher incidence of child abuse. Elster, et al. (1983), concluded that teen mothers have excessive stress, lack social support, lack sufficient knowledge of child

development, are themselves developmentally immature, and have socially inappropriate attitudes toward child raising. Furthermore, these authors pointed out that a large number of the studies on the subject are methodologically flawed or poorly controlled, and it is not possible to determine reasons for these differences.

Von Windeguth and Urbano (1989) studied the relationships among maternal age, perceived social support, and home environment on mother/baby interaction using a convenience sample of 63 adolescent mothers and 33 adult mothers. A scheduled home visit provided the opportunity to complete the NCAFS (Barnard, 1978), the Personal Resource Questionnaire (PRQ) (Brandt & Weinert, 1981), and the Home Observation for Measurement of the Environment (HOME) (Bradley & Caldwell, 1984). The authors found that maternal behavior was related to mother's age, with the adult mothers exhibiting higher scores.

Ruff (1987) studied African-American primiparas aged 15 to 19 years at two points in time: once in the hospital and at the subject's home within three months after delivery. Adolescent maternal behavior was analyzed using the Nursing Child Assessment Feeding Scale (NCAFS) (Barnard, 1978) which has four parent subscales: sensitivity to cues, response to distress, social-emotional growth fostering, and cognitive growth fostering. The NCAFS also has two infant subscales: clarity of cues, and responsiveness to parent. The mean scores for each subscale were tabulated and then compared to

previously determined norms for Caucasian adolescents, as well as African-American and Caucasian adults. Mean scores on all subscales were lowest for African-American adolescents. Although the adolescent mothers were sensitive to their infants' cues, they scored low in the provision of emotional, cognitive, and social stimulation for their infants.

Norr and Roberts (1991) studied maternal attachment in a convenience sample of three groups: 69 mothers aged 14 to 17 years, 36 mothers aged 18-19 years, and 79 mothers aged 20-24 years. The majority of the subjects were African-American and of low socioeconomic status. Mothers were studied during the initial postpartum period while feeding their infants. Of the three groups, the women aged 14-17 and 18-19 demonstrated significantly fewer maternal attachment behaviors than did the 20-24 year-olds. Norr and Roberts (1991) concluded that their study indicated, as did the previously discussed Ruff (1987) study, that African-American adolescents have greater difficulty than African-American adults in their mothering behaviors and that these differences are present soon after the births of their babies.

Levine, Garcia-Coll, and Oh (1985) examined the effects of maternal age, education, support, and ego development on mother-infant interaction. The researchers hypothesized that these variables significantly affect mother-infant interaction. A convenience sample was obtained, and 15 adolescent/infant dyads were compared with 15 adult/infant dyads. Maternal

education, social support and ego development were all significant predictors of mother-infant interaction. The authors concluded that adolescents, merely by virtue of their age, have fewer years of education and thus have less ego development.

A study by Kemp, Sibley, and Pond (1990) explored the relationships among maternal age, prenatal attachment, perception of birth experience and maternal role attainment. Serendipitously they found that the adolescent mothers perceived themselves as more prepared to be mothers than did the adults. Conversely, they found no significant differences between the two groups in prenatal attachment or mother-infant adaptation.

Pond and Kemp (1991) studied self-confidence and anxiety in pregnant adolescents (13-16 years) and in adults (21-33 years). Most subjects were single, and all were primiparas. Results indicated that both state and trait anxiety were negatively correlated with self-confidence in both groups. Furthermore, no significant differences in anxiety or self-confidence existed between the two groups.

In the meta-analysis of literature conducted by Elster et al. (1983), the majority of published research comparing adolescent and adult mothers indicated differences in the mothers and their infants. In more recent years, additional researchers have noted a lack of skills in maternal-child interaction and attachment behavior in adolescent mothers when

compared with adults (Levine et al., 1985, Ruff, 1987; Von Windeguth & Urbano, 1989; Norr & Roberts, 1991). However, Kemp, et al. (1990) found no significant differences in the maternal-infant attachment and adaptaton behaviors of adolescents and adults.

Becker (1987) studied the perceptions of 23 adolescents (aged 15 to 17 years) and 22 adults (aged 20 to 28 years) concerning their infant's development. She found that in her convenience sample, adolescents' expectations regarding their infants were lower than those of their adult counterparts, and that some infant behaviors were less optimally perceived, but that the two groups did not differ in terms of experienced prenatal stress. Maternal stress was measured via the Life Experiences Survey (Sarason, Johnson, & Siegel, 1978), a self-report instrument.

Furstenberg (1976) suggested that while adolescent mothers appear to know less about child care than adults, no differences exist in terms of warmth or overall quality of care. Furthermore, the developmental effects on a child raised in poverty are greater than or equal to the effects on a child raised by an adolescent mother (Furstenberg, Hughes, & Brooks-Gunn, 1992).

Overall, research supports the notion that adolescents and adults differ in the way they respond to motherhood and in the way that they mother. This author believes that the differences in stressors encountered between adolescents and

adults by virtue of their developmental age contribute substantially to this notion. Negative stressors are compounded in poor, single, African-American, adolescent mothers (Randolph & Gesche, 1986).

Psychologic Reactions in Mothers of Low Birthweight Infants

Gennaro, Zukowsky, Brooten, and Lowell (1990) utilized a convenience sample of 65 mothers of infants who weighed < 2500 grams. Infants were all singletons and without congenital anomalies. Seventy-three percent of the mothers were African-American. Data about the mother's concerns were collected in the hospital following birth and at eight other points through six months of infant age. Most concerns occurred during the week following birth and the week of infant discharge. Concerns were classified as fitting into 1 of 13 categories, such as infant health, infant weight, infant development, personal-maternal, parental roles, money, etc. Concerns about infant health accounted for over half of the total number of concerns expressed during all eight data collection points. No statistically significant differences were reported when mothers were grouped according to infant gender or maternal parity. There was, however, a statistically significant difference in the overall number of concerns offered by mothers of differing educational levels. Mothers with a high school education or less expressed fewer concerns than the mothers with more than a high school education. In their discussion,

Gennaro et al. (1990) ventured that perhaps less educated mothers are not as likely to verbalize their concerns.

Gennaro, Brooten, Roncoli, and Kumar (1993) studied stress and health outcomes in a convenience sample of 95 mothers of low birthweight infants using Elliot and Eisdorfer's conceptual model of stress and health (1982). Ninety-five mothers of low birthweight infants who were singletons and without congenital anomalies were studied. Eighty-one percent of the sample was African-American, and the mean level of education was 12.5 years. The potential stressor of negative life events within the six months prior to delivery was measured using the fe Experiences Survey (Sarason, et al., 1976). The mediator of social support was measured by the Inventory of Socially Supportive Behaviors (ISSB) (Barrera, 1981). Neonatal morbidity, as a new construct within the existing model, was measured using the Neonatal Morbidity Scale (NMS) (Minde, et al., 1983). Psychologic reactions measured were anxiety and depression, as measured by the Multiple Affect Adjective Checklist-Revised (MAACL-R) (Lubin, et al., 1986) The instrument consists of 132 adjectives, and measures state affect via five subscales, which are reportedly valid as independent measures (Gennaro, et al., 1993). Health outcome was examined by measuring the mother's perception of her own postpartal health according to the Health Perceptions Questionnaire (HPQ) (Ware, 1976). Significant relationships were found between stress and anxiety, neonatal morbidity and

anxiety, and anxiety and depression, out of twelve proposed relationships. Negative life events in the six months before delivery were related to maternal anxiety, which in turn were related to depression.

Gennaro, York, and Brooten (1990) studied anxiety and depression in 35 mothers of low birthweight infants (1500 - 2500 grams) and 27 mothers of very low birthweight infants (500 - 1500 grams). All infants were singletons and without congential anomalies. Seventy-three percent of the mothers were African-American, and the mean age was 24 years. Instruments used were the MAACL-R (Lubin, et al., 1986) and the NMS (Minde, et al., 1983) outlined in the previously discussed study. Data were collected at birth, the time of infant discharge and at six other points until the infant was five months old at adjusted gestational age. Significant differences were detected in the levels of anxiety and depression between the mothers of low birthweight infants and the mothers of very low birthweight infants during the time data were collected. Anxiety and depression were higher in the mothers of very low birthweight infants up until two months of age, and higher in the mothers of low birthweight infants at three and four months of age. The researchers pointed out that the very low birthweight infants were sicker than the low birthweight infants, and that this may be why their mothers experienced more anxiety and depression in the neonatal period. It is possible that since the mothers of the very low

birthweight infants had been more anxious earlier in the study, they were less likely to experience anxiety as the infant became older. The researchers concluded that nursing efforts to diffuse maternal stress during the first postpartal week could have a positive effect over time (Gennaro, et al., 1990).

In a similar study, Gennaro and Stringer (1990) compared 36 mothers of low birthwieght infants with 27 mothers of very low birthweight infants with a mean maternal age of 24. The purpose of the study was to determine if a relationship existed between maternal anxiety and depression, infant acute care visits, and infant growth and development. The MAACL-R (Lubin, et al., 1986) was used to measure maternal anxiety and depression in the hospital and during the week of infant discharge. The NMS (Minde, et al., 1983) was used in the hospital via chart review throughout the infant's hospital stay. Infant growth and development were measured using the Bayley Scales of Infant Development (Bayley, 1969) at the time the infant was six months adjusted age. Data were also collected on various demographic variables and the number of acute care infant visits between the time of discharge and six months adjusted age. The mothers were divided into three groups based on the number of acute care visits their infants had. In the study, 25 of the infants had no acute care visits, 20 had one acute care visit, and 18 had more than one acute care visit. When compared, the mothers of infants who had more than one acute care visit experienced significantly higher

anxiety than the mothers in the other two groups. A significant difference was also found between the three groups in the amount of depression experienced at birth and the time of infant discharge. Post-hoc analysis indicated that the mothers of the infants who had more than one acute care visit also had a significantly higher amount of depression than the mothers in the other two groups. The researchers concluded that maternal stress leads to an increased number of acute care infant visits.

Gennaro (1988) studied maternal anxiety in mothers of preterm infants (weighing between 1000 and 1500 grams) and mothers of term infants (weighing over 2500 grams) using the state scale of the State-Trait Anxiety Inventory (STAI) (Spielberger, Gorsuch, & Lushene, 1970). Maternal depression was evaluated via the Depression Adjective Check List (DACL) (Lubin, Gardner, & Roth, 1975). Subject ethnicity was not described but the mean maternal age was 23 years. The researcher also classified infants according to their level of morbidity based on their gestational age, using the Neonatal Risk Categorization Schema (Blumberg, 1980). A three-way multivariate analysis of variance was done to determine if there was an effect on postpartal anxiety or depression in the first postpartal week from type of delivery, term or preterm status, or maternal parity, and no significant three-way effect was found. A statistically significant difference was evident between mothers of term and preterm infants in depression and

anxiety during the first postpartal week, with the mothers of preterm infants being significantly more anxious and depressed.

Brooten, et al. (1988) studied anxiety, hostility and depression in 47 mothers of high-risk preterm infants. Data on ethnicity were not provided, but 34% of the mothers had less than a high school education and 49% reportedly had annual incomes of less than $10,000. Using the Multiple Affect Adjective Checklist - Today Scale (MAACL-Today) (Zuckerman & Lubin, 1965), data were collected at the time of infant discharge and again when the infant was nine months old. Mothers were found to be significantly more depressed and anxious at the time of discharge then at nine months, and multiparas were more depressed at discharge than were primiparas. Furthermore, infants who were hospitalized longer than the mean of 51 days had mothers who were significantly less depressed at the time of infant discharge than the mothers of infants who were hospitalized less than 51 days. Anxiety, depression and hostility did not differ based on socioeconomic status, marital status, maternal education or maternal age at the time of infant discharge or nine months of age.

The MAACL-Today Scale (Zuckerman & Lubin, 1965) was chosen for use in this study because evidence for its reliability and validity, as well as justification for its use in the population studied, was well documented in the literature, including the previously discussed study by Brooten, et al. (1988). A number of studies are cited in the Manual for the

MAACL-Today Scale (Zuckerman & Lubin, 1965) under the topic of validity. Seven studies are described in which college students were given the MAACL-Today Scale at different points in time. It was found that anxiety scores were significantly elevated above the baseline just prior to taking an examination. In one study, hostility and depression scores were also elevated when an examination was threatened but not given. In students who did poorly on examinations, post-examination scores on the MAACL-Today Scale were high on the depression subscale. Validity was also tested by administering the MAACL-Today Scale to persons who were experiencing stage fright, and to people subjected to generally offensive and/or upsetting pictorial stimuli. Furthermore, the results of the MAACL-Today Scale were compared with clinical observations in a group of in-patient psychiatric patients, with patients who were given anxiety-reducing medication, and with psychological and biochemical measures in another group of patients.

Zuckerman and Lubin (1965) suggested that the MAACL (General or Today forms not specified) could be used in testing the effects of drugs or psychotherapy, experiments with stress where before and after measures are required, and in situations where reactions to natural stresses (such as exams) need to be measured. It was the belief of these researchers that the birth of a low birthweight infant could be considered a natural stress. Further discussion of the instrument is provided in Chapter Three of this thesis.

In summary, stressful postpartum psychologic reactions appear to be increased in mothers of smaller infants. The time for evaluating these psychologic reactions definitely appears to be a factor, and the manifestations of early postpartum psychologic reaction may have long term effects on infants and their mothers.

Cultural and Socioeconomic Factors and Motherhood in African-American Adolescents

Fisher (1984) stated that it is impossible to discuss the psychodynamics of adolescent motherhood without considering the traditions and patterns of culture and socioeconomic class. At the same time, it is necessary to remember that each maternal experience is an individual experience. Having a child may be an attempt to obtain responsibility or a sense of adulthood, an attempt to obtain the proximity of a constantly loving companion, or merely be allowed to occur for reasons the adolescent cannot even explain (Fisher, 1984). An African-American woman may achieve a degree of adult recognition and, for the first time, begin to attain a valued role by becoming a mother (Raines, 1991). Indeed, Zabin, Hirsch, and Boscia (1990) studied adolescents under age 17 who were awaiting the results of their pregnancy tests, and found tremendous ambivalence when asked specific questions relating to feelings about childbearing. These authors suggested that the ambivalence indicated there was no real reason for these young girls to avoid having a child. Many of the adolescents were

living with a low socioeconomic status or in poverty, had few or no goals, and were unable to imagine a future outside their present frame of reference, so there was little to disuade them from giving birth (Zabin & Hayward, 1993). Specifically, African-American adolescents are more likely to be living in poverty than are Caucasians, and poverty is more likely to be an antecedent to adolescent pregnancy than a result of it (Williams, 1991).

Moynihan (1965) reported that in 1984 nearly half (47.8%) of America's people living at or below the poverty level were living in female-headed households, and African-Americans are more likely than Caucasians to live in a female-headed household. Bane (1986) stated that African-Americans are more likely to move from a poor family of origin to establishing a poor family of their own, whereas Caucasians more often become poor due to situations or events. When an African-American adolescent living in poverty or at a low socioeconomic level becomes a mother, a tough financial situation merely becomes worse. Velsor-Friedrich (1992) maintained that some of the far-reaching problems for young individuals living in poverty include emotional and behavioral problems, AIDS, fetal alcohol syndrome, delinquency, learning disabilities and a multitude of other social and health problems. The cognitive level of adolescents, however, will not generally allow them to associate current activities with future problems.

Hamburg (1986) studied African-American women living in poor urban areas and found them to be demonstrating an "alternative life course strategy". Furthermore, the ghetto subculture may generate such a strategy as a reaction to social, developmental, and economic factors. In a three-year study conducted by Burton (1990), 20 multigenerational, low-income African-American families were studied. Four characteristics of these families were described: early parenthood and grandparenthood, the separation of childbearing and marriage, little disparity in the ages of adults within the family, and a family system in which grandparents reared children and grandchildren. This study demonstrates the complexity of the contributing cultural factors to the high rate of adolescent pregnancy and childbearing among poor, African-American adolescents.

Duncan and Hoffman (1988) researched trends in pregnancy, childbearing, and education in adolescents since the 1960s. Although there was a slight increase in the rates of education for both Caucasian and African-American teenagers, and only a slight change in the incidence of illegitimate births, the number of African-American adolescents who were educated and/or mothers who were gainfully employed had declined significantly by the 1980s. Furthermore, the use of Aid to Families with Dependent Children (AFDC) by African-American adolescent mothers had increased.

The high rate of poverty among African-Americans is not the only reason the rate of adolescent pregnancy is so high in this group. The rate of adolescent childbearing has been historically higher in African-Americans than in Caucasians, and social analysts are not certain exactly how environmental, historical, and cultural factors have contributed to this situation (Washington, 1988; Williams, 1991).

Schorr & Schorr (1989) note that many aspects of adolescent childbearing can be explained by the interaction of emotional and economic deprivation. Adolescents who are growing up in poverty, often without adequate adult supervision, encouragement, or guidance tend to have low self esteem and few goals. Without goals, there appears to be no reason to postpone parenthood. Furthermore, a girl who is unable to visualize opportunity, or achieve a sense of self-worth may perceive that she has nothing to lose, and perhaps something to gain, by becoming a mother (Schorr & Schorr, 1989). Indeed, African-American adolescent childbearing does not generally appear to be viewed as a negative occurrence within the African-American culture. A young woman may achieve a degree of adult recognition and for the first time begin to attain a valued role by becoming a mother (Raines, 1991).

Certain cultural patterns among African-Americans also contribute to the relatively high birthrates in the population. Indeed, sociocultural factors within the African-American community have interacted with sociocultural factors within the

larger society to increase the growth of single parent families (mostly female-headed) and in turn the prevalence of adolescent motherhood (Zongker, 1977; Raines, 1991; Franklin, 1992).

From a historical perspective, the condition of slavery must be recognized. African-American women were often considered to be greater assets if they had numerous children at a young age. Furthermore, the fathers of these children were legally unknown, and therefore the dependence of the children upon the mother was reinforced, and contributed to family continuity. The matriarchal system, therefore, was the product of racism and economics, and not a reflection of the slave's values (Washington, 1988). Mintz and Kellogg (1988) stated that social codes, attitudes and patterns in African-American culture were shaped by slavery.

This section described some of the socioeconomic and cultural factors that affect adolescent motherhood within the African-American culture. It is obvious that adolescent motherhood in this population is complex and multifaceted.

Summary

This chapter reviewed a portion of the current literature representative of the major variables of interest in this study: psychologic reactions in adolescent mothers, differences between adult and adolescent mothers, psychologic reactions in mothers of low birthweight infants, and socioeconomic and cultural factors affecting adolescent motherhood in African-

Americans. Although society generally views adolescent motherhood as problematic, it may not be considered so in the population with the highest birthrate, African-American adolescents. It is clear that the situation is far from simple, yet also that low socioeconomic status may be inextricably intertwined with the situation.

CHAPTER 3

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

This chapter contains information on the study design, population and sample, and the protection of human subjects. The research instruments are described as are the procedures for data collection and treatment. A summary concludes this chapter.

A descriptive cross-sectional design (Campbell & Stanley, 1963) was used to test the hypothesis that adolescent African-American mothers of low birthweight infants would have a greater degree of stressful postpartum psychologic reaction than adult African-American mothers of low birthweight infants. Psychologic reactions of adolescent and adult mothers of low birthweight infants were measured using the Multiple Affect Adjective Checklist (MAACL) Today scale (Zuckerman & Lubin, 1965). The MAACL-Today was administered to the mothers in the early postpartum period prior to hospital discharge.

Extraneous variables that may have affected the psychologic reaction of the mother included a multitude of factors, such as a recent separation or divorce from a significant other, parity, social support, and other variables. Attempts to control for socioeconomic status, ethnicity, and

age, were made by sample selection criteria. Demographic data were collected on age, parity, marital status/significant other status, with whom the mother was living, number of children living in the home, educational level, and type of delivery. Information was also collected on infant birthweight and Apgar scores. In an attempt to control for infant health status, infants were all singletons, and without congenital anomalies, Grade IV intraventricular hemorrhages, extensive surgical interventions, ventilator dependency, or oxygen dependency.

Threats to internal validity included the potential for a disruptive environment as the instrument was administered at the hospital bedside with normal hospital activities going on as usual, as well as the possibility of the mothers providing perceived socially desirable responses to the interviewer. The mothers were told that there were no correct responses and that they should respond to the words based on what they were feeling at the time.

Setting

The study was conducted in a centrally located city of the southwestern United States with a metropolitan area population in excess of three million people. Two 300+ bed, public, not-for-profit, teaching hospitals served as the study sites. There were approximately 200 beds in the combined hospitals' nurseries including those in Neonatal Intensive Care Units, High-risk, Low-risk, and Newborn nurseries. It was reported by

hospital personnel that approximately 80 low birthweight babies a month were delivered in the combined hospitals' obstetrics units. Infants were admitted to the appropriate nursery based on their overall physical condition and needs. Data were collected during the fall of 1993 and winter of 1994 until the final sample size was obtained.

Population and Sample

The population for the proposed study was African-American adolescent and adult mothers of low birthweight infants. A convenience sample of 25 adolescent and 28 adult African-American mothers of low birthweight infants (for a total of 53 subjects) was the final sample for the study. To be eligible for the study, mothers had to:

- be African-American
- be between ages 12 and 17 years, or 21 years and over
- have the ability to read, write, and speak English
- have an infant that weighed between 1500 and 2500 grams at the time of birth
- have an infant that met the following exclusion criteria: (a) not one of a multiple birth, (b) no congenital anomalies, (c) no Grade IV intraventricular hemorrhage, (d) no extensive surgical interventions, and (e) no ventilator-dependency and oxygen-dependency.

All mothers were recipients of, or eligible for Medicaid, and were classified by hospital medical personnel as either

high or low-risk for labor and delivery. Many of the patients that delivered at the study sites were classified as high risk due to their age (under 18 years or over 35 years); a lack of prenatal care; high risk behaviors during pregnancy such as the use of chemicals; the presence of more than one fetus; a previous abnormal non-stress test, ultrasound, amniocentesis; or various other reasons. Such mothers may have different psychologic reactions due to pre-existing factors. Exclusion criteria attempted to control for multiple births, serious infant illness, and congenital anomalies. Factors that were not controlled for were lack of prenatal care, high risk behaviors during pregnancy, abnormal laboratory tests, and others.

The original desired sample size of 90 was estimated with an alpha of .05, power of .80, and an effect size of .60 for the independent t-test (Cohen, 1988). Balancing the conflicting research in this area with the expectation of a difference in psychologic reaction based on the conceptual framework, a moderate effect size was anticipated. Some difficulties in obtaining the proposed sample size of 90 subjects occurred. Three eligible adolescent mothers declined participation in the study. One adult mother was not included in the study due to her decreased ability to speak and understand English. In addition, most of the patients delivering infants at the study settings were Hispanic. While the researchers were informed that approximately 40 low

birthweight infants a month were delivered at each setting, the number of babies who met the study criteria was closer to 20-30 at both settings. The final sample size was 53.

Protection of Human Subjects

Approval to conduct the study was obtained from the institutional review boards of Texas Woman's University and the study institutions (Appendix A). Written informed consent (Appendix B) was obtained from the subjects during their hospitalization at the time of data collection. The researchers explained the study and the procedure for data collection at this time. Potential risks to the subjects included: (1) fatigue, anxiety, or frustration regarding the content or meaning of the adjectives used, or towards the checklist itself, and (2) loss of confidentiality. Steps taken to reduce the potential risks included: (1) availability of the researcher to answer questions or provide explanations at the time of data collection, (2) informing subjects that they could stop study participation at any time, and (3) insuring confidentiality by the use of code numbers to represent the subjects, and the reporting of aggregate data only, and (4) the storing of data in a locked cabinet and destroying it after analysis.

Instruments

Two instruments were used to collect data, a demographic data form (Appendix C), and the Multiple Affect Adjective Checklist-Today Scale (Zuckerman & Lubin, 1965) (Appendix D). The demographic data form was used to record information on the following items: maternal age (the independent variable in the study and necessary to determine group assignment), parity, living arrangements, educational level, infant's primary caregiver, and type of delivery. In addition, data were collected on infant birthweight, and one- and five-minute Apgar scores. It took approximately three to five minutes per subject to complete the demographic data form. Information on these variables was collected to aid in explanation of the research findings.

The Multiple Affect Adjective Checklist (MAACL) Today Scale was used to measure psychologic reaction (Zuckerman & Lubin, 1965). The instrument has well documented psychometric properties and has been used in over 600 research studies (Zuckerman & Lubin, 1965). The instrument measures current state anxiety, hostility, and depression at the nominal level of measurement. Adequate evidence of the reliability and validity of the MAACL-Today Scale is presented in its accompanying manual, with numerous studies cited. The instrument is recommended by its developers for use in testing the effects of drugs and/or other psychotherapies, experiments

involving stress where before and after measures are required, and in situations where the effects of natural stresses are to be measured (Zuckerman & Lubin, 1965). These researchers felt that the birth of a low birthweight infant was a natural stress. Subjects indicate any of the 132 words on the checklist that describe how they feel. The checklist took approximately five minutes to complete and all of the words are at or below an eighth grade reading level (Zuckerman & Lubin, 1965).

Ordinal level scores were derived from summing the items on each subscale of the MAACL-Today Scale. Individual subscale scores range from 0 to 21 on the Anxiety scale, 0 to 40 on the Depression scale, and 0 to 30 on the Hostility scale. The subscale scores were summated to yield a stressful psychologic reaction score at the interval level of measurement (Munro, Visintainer, & Page, 1986). Higher scores on the MAACL-Today Scale reflect higher levels of psychologic reaction (anxiety, hostility, and depression). The test is not valid for discriminating separate affective states; in other words, numerical scores from the subscales cannot be evaluated separately from one another, but must be summated (Zuckerman & Lubin, 1965). This is due to the fact that the three subscales are highly correlated at a given time, and have a reduced ability to distinguish one affective state from another (Zuckerman & Lubin, 1965). The summation of the scores on the subscales was used, as is intended in the use of the MAACL-

Today Scale, to reflect psychologic reaction in the adolescent and adult mothers in the study, thereby conveying interval level data.

Internal consistency reliability ranged from .72 to .92 in a group of nonpregnant college students (Zuckerman, 1960). An additional study by Brooten and colleagues (1988) found Cronbach's alphas of .85 or higher on the anxiety subscale, .87 on the depression subscale, and .83 on the hostility subscale in a study of mothers of low birthweight infants. The study by Brooten, et al., (1988) provided support for the use of the MAACL-Today Scale with a very similar population. Scores on the MAACL-Today Scale have been well-correlated to other standardized tools such as the Taylor Manifest Anxiety Scale and Cattel and Scheier's (1963) IPAT Anxiety Scale (Brooten et al., 1988). Gennaro (1988) found that the anxiety subscale was well correlated ($r = .66$) with the State Trait Anxiety Inventory (Spielberger, et al., 1970) when used with mothers of preterm infants (Brooten, et al., 1988).

For the purposes of this study, evidence for the reliability of the MAACL-Today Scale was determined in a pilot study. After institutional review board approvals were obtained, 10 adolescent mothers and 13 adult mothers who met the sample selection criteria and provided written informed consent were interviewed to obtain information for the demographic data form and given the MAACL-Today Scale to complete. Cronbach's alpha was used to test internal

consistency. As the reliability coefficients were $\geq$ .80, the pilot data were included with the overall study data. It is notable, however, that the researchers in this study observed maternal affect that was not always congruent with adjectives marked on the MAACL-Today Scale.

From review of the literature, the MAACL-Today Scale appeared to be valid for use with the intended study population. The instrument was designed to provide measures of three clinically relevant negative affects that contribute to psychologic reaction: anxiety, hostility, and depression.

Data Collection

After all necessary approvals were obtained, data collection was begun. The procedure for data collection was as follows for the pilot study and the overall study:

1. A daily visit was made to the study sites to determine which newly admitted mother-infant dyads met the sample selection criteria.
2. On arrival at each site, maternal and infant charts were reviewed to finalize eligibility for participation.
3. One of the researchers met with the mother at her bedside to explain the study and procedure for data collection.
4. Informed consent was obtained and a code number assigned to the participant.

5. The mother was interviewed to obtain the information necessary to complete the demographic data form. This took approximately three to five minutes.

6. The mother was given the MAACL-Today Scale to complete. This took about five minutes. The researcher answered any questions or explained terms using predetermined explanations (definitions from a dictionary were selected and used to maintain consistency). Words requiring explanation were so indicated with asterisks after the instrument was returned to the researcher. If the mother experienced difficulty in comprehending 10 or more words or exhibited confusion, the mother was to be dropped from the study, but no such cases occurred. All participants were told they could stop the checklist at any time, and those data would not be included in the data analysis. No such cases occurred.

7. Time was allowed after checklist completion for the mothers to voice any concerns or questions they may have had regarding their participation in the study.

8. Data were entered by the researchers into the VAX6360 mainframe computer and data entry checked for accuracy.

Treatment of Data

Descriptive and inferential statistics were used to analyze the data. The alpha was set at .05.

Measures of central tendency and variability were used to describe each group of mothers. Information collected on the

demographic data forms was described with means, medians, standard deviations, frequencies, percentages and ranges. Differences in the nominal and ordinal demographic variables between groups were tested with Chi-square.

Raw data were entered into a mainframe computer. This was done according to the instructions in the MAACL-Today Scale manual, in order to obtain scores for each of the subscales as well as the score for total negative affect. Special commands were written in order to score the subscales accurately. To score the MAACL-Today Scale, certain words that are marked by a subject count as a point, and certain words that are left blank also count as a point. For example, if the word 'depression' is marked, the subject is attributed one point toward the subscale depression. If the word 'happy' is not marked, the subject is also attributed one point toward the subscale depression.

The t-test for independent samples (SPSS, 1988) was used to compare the MAACL-Today mean scores between groups to test the hypothesis that African-American adolescent mothers would have a greater degree of strtessful postpartum psychologic reaction than African-American adult mothers of low birthweight infants.

Independent t-tests were used to compare the mean subscale scores for each group of mothers in the study with the mean subscale scores of two similar groups of women provided as

normative data in the Manual for the MAACL-Today Scale (Zuckerman & Lubin, 1965).

Summary

A descriptive cross-sectional design was used to test the hypothesis that adolescent African-American mothers of low birthweight infants would have a greater degree of stressful postpartum psychologic reaction than adult African-American mothers of low birthweight infants. The convenience sample consisted of 25 adolescent (12 to 17 years of age) and 28 adult mothers (21 years of age and over). The two groups were described and compared on the basis of demographic characteristics, and independent t-tests were used to compare the mean scores for the subscales anxiety, hostility, and depression, as well as the summated subscale scores (total negative affect), on the MAACL-Today Scale (Zuckerman & Lubin, 1965). Data were collected on hospitalized mothers in the postpartum period, usually within 48 hours after delivery. T-tests were also used to compare mean subscale scores between the two groups of mothers in the the study with a portion of the subscale scores provided as normative data by the developers of the MAACL-Today Scale. The normative subscale scores had been obtained from two groups of women similar in age to the mothers in this study.

CHAPTER 4

ANALYSIS OF DATA

This chapter describes the sample and reviews the descriptive and inferential statistics used to determine differences between the two groups of African-American mothers of low birthweight infants. Also compared are the subscale scores of the adolescent mothers and a normative group of female college students, and the subscale scores of the adult mothers and a normative group of female job applicants. A summary of findings concludes this chapter.

Description of Sample

The convenience sample for the study was obtained from clients at two county hospitals in a large urban area in the southwestern United States. A total of 53 African-American mothers of low birthweight infants participated in the study. All mothers were recipients of, or eligible for, Medicaid, and were classified by hospital medical personnel as either high or low-risk for labor and delivery. Frequency distributions were used to describe characteristics of the mothers and their infants.

Demographic data for the mothers are shown in Table 1. The adolescent mothers (n = 25) ranged in age from 12 to 17

Table 1

Maternal Demographic Data for the Adolescent Group, the Adult Group, and the Total Sample.

Variable	Adolescents (n = 25)	Adults (n = 28)	Total Sample (N = 53)
Age in years (mean ± SD)	16 ± 1	27 ± 5	22 ± 7
Marital Status* (frequency and percentage)			
Single	23(92%)	22(79%)	45(85%)
Married	-	6(21%)	6(11%)
Divorced	1(4%)	-	6(11%)
Did not specify	1(4%)	-	-
Highest Grade of School Completed (mean ± SD)	10 ± 1	12 ± 1	11 ± 2
Number of Children (mean ± SD)	1 ± 1	2 ± 1	1 ± 1
Living Arrangement* (frequency and percentage)			
Alone	-	2(7%)	2(4%)
Spouse/boyfriend	3(12%)	12(43%)	15(28%)
Parent(s)	18(72%)	10(36%)	28(53%)
Other family	3(12%)	3(11%)	6(11%)
Friend(s)	1(4%)	1(4%)	2(4%)
Number of Children Living in the Home (mean ± SD)	2 ± 2	3 ± 2	2 ± 2
Type of Delivery* (frequency and percentage)			
Vaginal	19(76%)	27(96%)	46(87%)
Cesarean	6(24%)	1(4%)	7(13%)

n = subsample size; N = total sample size; SD = standard deviation; * = signifcant difference found ($p < .05$)

years, with a mean age of 16 years and a mode of 17 years. Of the adolescent mothers, 92% were single. The mean number of grades in school completed by the adolescent mothers was 10, and ranged from 8 to 11. The mean number of other children the adolescents had was one with a median of zero and a range of three. Seventy-two percent of the adolescents lived with their parents. The mean number of other children living with the adolescent at home was two, with a mode of one, and a range of five. Seventy-six percent of the adolescents had vaginal deliveries.

As shown in Table 2, the mean birthweight for the infants of the adolescent mothers was 2252 grams with a median of 2280 grams and a mode of 1701 grams. The infants of the adolescent mothers had a mean one-minute Apgar of seven with a median of eight; the scores ranged from two to nine. The infant five-minute Apgar scores had a mean of nine and ranged from seven to nine. Sixty-eight percent of the adolescents indicated that they would be the primary caretaker of their infant.

As shown in Table 1, the mean age of the adult mothers (n = 28) in the study was 27 years, with a mode of 21 years; and the range was from 21 to 39 years. Seventy-nine percent were single and 21% married. The mean number of grades in school completed by the adult mothers was 12 and the range was from tenth grade to four years of college. The mean number of other children was two with a mode of one and a range of six.

Table 2

Infant Demographic Data for the Adolescent Group, the Adult Group, and the Total Sample.

Variable	Adolescent (n = 25)	Adult (n = 28)	Total Sample (N = 53)
Birthweight in Grams (mean ± SD)	2252 ± 202	2220 ± 253	2236 ± 229
1 Minute Apgar Score (mean ± SD)	7 ± 2	8 ± 1	7 ± 2
5 Minute Apgar Score (mean ± SD)	9 ± 1	9 ± 1	9 ± 1
Primary Caretaker (frequency and percentage)			
Mother	17(68%)	24(86%)	41(77%)
Grandmother	7(28%)	2(7%)	9(17%)
Boyfriend/Spouse	1(4%)	2(7%)	3(6%)

n = subsample size; N = total sample size; SD = standard deviation

Forty-three percent lived with a spouse or boyfriend, and 36% lived with either their mother or father. The mean and modal number of children living at home with the adult mothers was two with a range of seven. Ninety-six percent had had a vaginal delivery.

As shown in Table 2, the mean birthweight of the infants of the adult mothers was 2220 grams with a median of 2308 and a mode of 2320. The mean one-minute Apgar score for the infants of the adult mothers was eight with a minimum of five and a maximum of nine. The mean five-minute Apgar score was nine, and the scores ranged from eight to 10. Eighty-six percent of the adult mothers indicated that they would be the primary caregiver for their new infant.

Most of the differences found between the two groups of mothers are due to maternal age. Chi-square revealed significant differences in living arrangements (X^2 = 9.5, df = 4, p = .048), marital status (X^2 = 7.9, df = 3,p = .049), and type of delivery (X^2 = 4.8, df = 1, p = .03). Chi-square revealed no significant differences in the other demographic variables (p > .05).

Findings

The hypothesis was that adolescent African-American mothers of low birthweight infants would have a greater degree of stressful postpartum psychologic reaction than adult African-American mothers of low birthweight infants as measured

by the MAACL-Today Scale(Zuckerman & Lubin, 1965). Out of a possible score of 21 on the anxiety subscale, the mean score for the adolescent mothers was six, and the mean score for the adult mothers was also six. For the hostility subscale, the mean score for the adolescent mothers was seven, and seven for the adult mothers, out of a possible 30. For the depression subscale the maximum possible score is 40, and the mean scores for the adolescent mothers was 10, and 11 for the adult mothers. For total negative affect, the mean and median score for the adolescent mothers was 23, the mode was 22, with a range from 7 to 47. The mean and median total negative affect score for the adult mothers was 24, with a mode of 12, and a range from 2 to 49.

Cronbach's alpha was used to test internal consistency of the MAACL-Today Scale in the sample. The instrument was reliable for the African-American adolescents (alpha = .85), for the African-American adults (alpha = .92), and for the total sample (alpha = .90). It is noteworthy that the instrument proved to be less reliable in the adolescents than in the adults for all subscales as well as for total negative affect; the differences are discussed in Chapter Five of this thesis. These data are reflected in Table 3.

A t-test for independent samples (SPSS, 1988) was used to determine if differences in stressful postpartum psychologic reaction existed between the two groups of African-American

Table 3

Cronbach's Alpha Reliability Coefficients for MAACL-Today Scale Subscales in Adolescents, Adults, and the Total Sample

Subscale	Adolescents (n = 25)	Adults (n = 28)	Total Sample (N = 53)
Anxiety	.55	.76	.69
Depression	.73	.86*	.81*
Hostility	.52	.76	.69
Total negative affect (Stressful psychological reaction)	.85*	.92*	.89*

n = subsample size; N = total sample size
* indicates evidence for adequate internal consistency reliability (Polit & Hungler, 1991).

mothers of low birthweight infants. Results of this analysis revealed a t-value of -.25 (df = 51, p = .81) for total negative affect (the summated subscale scores); therefore no significant differences were found between the two groups. For the subscales hostility (t = -.07, df = 51, p = .943), depression (t = -.45, df = 51, p = .658), and anxiety (t = -.01, df = 51, p = .992), no significant differences were found between the two groups. The subscales of the MAACL-Today Scale are not considered valid measures of the separate constructs, and only the total negative affect (the total of the summated scores of the three subscales) was actually considered in determining if differences exist (Zuckerman & Lubin, 1965). These data are reflected in Table 4.

Additional Analysis

A portion of the normative data on the MAACL-Today was obtained from a group of 75 college students (31 females and 44 males), as well as 200 job applicants (100 females, 100 males) by Zuckerman and Lubin (1965). The mean scores of the adolescent mothers who were subjects in this study did not differ statistically from the scores provided as normative data for the female college students (mean age 18), except on the subscale for depression. An independent t-test showed that the female college students scored significantly higher in depression than the African-American adolescent mothers of low birthweight infant (t = -2.28, df = 54, n = 56, $p \leq .05$).

Table 4

Comparison of MAACL-Today Scale Subscale Scores Between Adolescent and Adult African-American Mothers of Low Birthweight Infants, Using Independent *t*-tests with alpha = .05.

Subscale	Adolescents (n = 25)	Adults (n = 28)	Total Sample (N = 53)
Anxiety (mean ± SD)	6 ± 3	6 ± 4	6 ± 3
Depression (mean ± SD)	10 ± 5	11 ± 7	10 ± 6
Hostility (mean ± SD)	7 ± 3	7 ± 4	7 ± 4
Total negative affect (stressful psychological reaction) (mean ± SD)	23 ± 10	24 ± 14	24 ± 12

n = subsample size; N = total sample size; SD = standard deviation

The mean subscale scores for the adult mothers in this study did not differ significantly from the mean subscale scores of 100 female job applicants (mean age 28) provided as normative data by the developers of the MAACL-Today Scale (Zuckerman & Lubin, 1965). The mean scores of the African-American adolescent and adult mothers of low birthweight infants, as well as the mean scores provided as normative data are presented in Tables 5 and 6. Unfortunately, the mean scores for total negative affect of the normative samples were not provided in the MAACL-Today Scale manual, therefore only subscale score means could be compared.

Of interest is the fact that the mean scores were relatively low in both groups of mothers in this study. Subscale scores range from 0 to 21 on the Anxiety subscale, 0 to 40 on the Depression subscale, and 0 to 30 on the Hostility subscale. Summation of the subscale scores yields a total negative affect score, the operational definition of stressful postpartum psychologic reaction in this study. High scores on the MAACL-Today reflect high levels of psychologic reaction (Zuckerman & Lubin, 1965). In this study, the relatively low scores of the mothers were contradictory to the maternal affects observed by the researchers. Subjects frequently complained of pain or asked the researcher to get them pain medication just before or after the completion of the MAACL-Today Scale. One subject appeared angry when the term low

Table 5

Comparison of MAACL-Today Scale Subscale Scores between African-American Adolescents (n = 25) and Female College Students (n = 31), Using Independent *t*-tests with alpha = .05 and df = 54.

Subscale	**Adolescent Mean Score**	**College Student Mean Score**	**t-value**
Anxiety	6	6	-0.6
Hostility	7	7	-0.32
Depression	10	14	-2.28*

n = subsample size; * indicates significance at $p \leq .05$

Table 6

Comparison of MAACL-Today Scale Subscale Scores between African-American Adults (n=28) and Female Job Applicants (n = 100), Using Independent *t*-tests with alpha = .05 and df = 126.

Subscale	Adult Mean Score	Job Applicant Mean Score	t-value
Anxiety	6	7	-0.55
Hostility	7	7	0.45
Depression	11	11	0.03

n = subsample size

birthweight was used and subsequently explained to her. Two subjects were incarcerated and only in the hospital to deliver their infants. Other subjects' infants were to be placed in foster care or with another family member after discharge due to testing positive for illegal drugs, although it is not certain if the mothers were aware of this fact.

Summary of Findings

The findings of this study demonstrated that no significant differences existed in postpartum stressful psychologic reaction between the adolescent and adult African-American mothers of low birthweight infants. The instrument was reliable in both groups of mothers, although evidence for reliability was lower in the adolescents.

Using Chi-square, significant differences were found between the two groups of mothers in living arrangements, marital status, and type of delivery ($p < .05$). No differences were found in the other demographic variables. In addition, mean scores for anxiety and hostility of a normative population provided with the MAACL-Today Scale (Zuckerman & Lubin, 1965) did not differ significantly from the mean scores of either of the groups of mothers in this study. There was no significant difference in the mean scores for depression between the adult mothers in this study and the normative mean scores provided for female job applicants. The normative sample of female

college students scored significantly higher in depression than the adolescent mothers in this study.

CHAPTER 5

SUMMARY OF THE STUDY

This chapter presents a summary of the study. The findings are discussed in relationship to the findings described in the reviewed literature. Also presented are conclusions based on the findings, as well as a discussion of the instrument's suitability for use in this population. Implications for further research are also presented.

Summary

The purpose of this study was to determine if differences existed in the stressful postpartum psychologic reactions of African-American adolescent and adult mothers of low birthweight infants. A descriptive cross-sectional study was used to test the hypothesis that African-American adolescent mothers of low birthweight infants would have a higher degree of stressful postpartum psychologic reaction than the African-American adult mothers of low birthweight infants.

Elliot and Eisdorfer's (1982) conceptual model of stress was used as a conceptual framework for the study. Erikson's psychosocial theory of development (1963) was used as a supplemental framework.

The convenience sample was obtained from the postpartum patient population of two public, not-for-profit teaching hospitals, both located in a large urban area in the southwestern United States. A pilot study of 12 African-American adolescent mothers and 13 African-American adult mothers of low birthweight infants was conducted to determine reliability of the instrument. As the MAACL-Today Scale proved to be reliable, the data from the pilot study were subsequently included in the final sample total of 53 (25 adolescent and 28 adult) African-American mothers of low birthweight infants.

After institutional review board approvals and informed consents were obtained, a demographic data form was used to collect information about certain demographic variables. The Multiple Affect Adjective Checklist-Today Scale (Zuckerman & Lubin, 1965) was used to measure state anxiety, hostility, and depression as stressful psychologic reaction in the postpartum mothers. Descriptive and inferential statistics were used to analyze the data. Independent t-tests were used to analyze the interval level data and Chi-square was used to evaluate the nominal level data. Significant differences were found between the two groups of mothers in living arrangements, marital status, and type of delivery. Independent t-tests were used to compare the mean scores of each of the subscales, and for total negative affect, between the African-American adolescent and adult mothers of low birthweight infants. No significant

differences were found in stressful postpartum psychologic reaction.

Independent t-tests were used to compare mean subscale scores between the adolescents and adults in this study with mean scores provided by Zuckerman and Lubin (1965) as normative data. The only significant difference found was that the normative sample of female college students scored significantly higher in depression than did the adolescent mothers in this study.

Cronbach's alphas demonstrated adequate evidence of internal consistency for total negative affect for each group and for the total sample. The instrument was somewhat less reliable for the adolescent mothers than for the adult mothers of low birthweight infants.

Discussion of Findings

There was no difference in the amount of stressful postpartum psychologic reaction experienced by the African-American adolescent and adult mothers of low birthweight infants as measured by the MAACL-Today Scale. This supports the findings of other researchers who found no significant differences in postpartum psychologic reactions in similar populations based on parity, age, marital status, and socioeconomic status (Brooten, et al., 1988). However, Brooten and colleagues (1988) found mothers of preterm infants were more anxious and depressed in the immediate postpartum period

before their infant was discharged from the hospital than when the infant was nine months old. Brooten, et al. (1988) stated that qualitative data indicated increased anxiety and depression during hospitalization and at the time of infant discharge, although the scores of the subjects were only slightly higher than the normative data provided by Zuckerman and Lubin (1965). They did not report whether or not t-tests were done, nor did they offer any explanation for the similarities in scores, except to comment on the overall low socioeconomic staus of the sample.

Numerous other studies found differences between adolescent and adult mothers. Norr and Roberts (1991) and Ruff (1987) found that African-American adolescents had greater difficulty with mothering behaviors than did African-American adults. Levine, Garcia-Coll, and Oh (1985) found that, by virtue of their age, adolescents have fewer years of education and, therefore, less ego development, which in turn negatively affects their ability to interact with their infants. In the meta-analysis of literature concerning adolescent motherhood by Elster, et al., (1983), the bulk of the published literature comparing adolescent and adult mothers found significant differences in both the mothers and their infants.

One group of researchers, Gennaro et al. (1990), who studied the concerns of mothers of low birthweight infants, felt that mothers with less education were less likely to verbalize their concerns. By virtue of its design (a list of

132 adjectives) the MAACL-Today Scale eliminates the need to verbalize, it requires merely that a subject express. In spite of the educational levels attained, the mothers in the present study may have had difficulty reading and/or comprehending the adjectives.

The MAACL-Today Scale met the criterion for evidence of reliability for use in the total sample for this study. Although none of the subscales was highly reliable for the adolescents, and the subscales for anxiety and hostility had poor reliability for the adults and for the total sample, Cronbach's alpha was $\geq .80$ for total negative affect for the adolescents, the adults, and for the total sample. As subscale scores must be summated into a score for total negative affect, this was the only score considered and the MAACL-Today Scale was considered reliable for the purposes of this study. Summation of the scores also allows for the examination of the scores at the interval level of measurement (Munro, et al., 1986), as was done in this study. The stronger evidence for reliability observed in the adult group (.92 versus .85 in the adolescent group) may be a reflection of the larger subsample size of the adult group (28 versus 25 in the adolescent group). Larger samples tend to yield stronger evidence of internal consistency (Munro, et al., 1986).

In apparent contrast to Zuckerman and Lubin's (1965) mandates for the summation of subscale scores on the MAACL-Today Scale, Brooten, et al. (1988) reported and evaluated the

means of the subscale scores separately in relationship to the other variables. In general, the mean anxiety, hostility, and depression subscale scores were only slightly higher than the normative mean scores on the MAACL-Today Scale obtained by testing college students. Qualitative data collected concurrently indicated increased anxiety and depression, both during infant hospitalization and at the time of infant discharge from the hospital when compared to other data collection points (Brooten, et al., 1988).

The question of the validity of the MAACL-Today Scale in the sample in this study is an issue that merits attention. Polit and Hungler (1991) maintain that the reliability and validity of an instrument are interrelated, and that is not possible for an instrument to be valid if it is not reliable. It is, however, possible for an instrument to be reliable and not valid, and validity exists in degrees. The validity of an instrument describes the degree with which an instrument measures what it is supposed to measure (Polit & Hungler, 1991). In the context of this study, Cronbach's alphas demonstrated reliability of the MAACL-Today Scale for total negative affect (the summated subscale scores) for both groups of mothers and the total sample, although not for any of the subscales in the adolescents, and not for anxiety or hostility in the adults. This lack of reliability in the subscales was expected as the three constructs are so closely related that they cannot be evaluated separately (Zuckerman & Lubin, 1965).

Reliability of the MAACL-Today Scale in the mothers in this study does not insure its validity. Although the instrument was reliable in measuring total negative affect (anxiety, hostility, and depression), it was not necessarily valid in measuring stressful postpartum psychologic reaction in this study or in the study by Brooten, et al.(1988).

The validity of the MAACL-Today (Zuckerman & Lubin, 1965) in this sample is in question primarily for three reasons. First of all, minimal differences occurred between the mean subscale scores of 31 female college students provided by the instrument's developers and the mean subscale scores of the adolescents in this study. In addition, when the mean subscale scores of the adult mothers in this study were compared with the mean subscale scores of 100 female job applicants which were provided as normative data, no significant differences were found. It is uncertain why this occurred. As previously mentioned, similarities in sample mean scores and normative mean scores were reported by Brooten, et al., (1988), who attributed the relatively low subscale scores to being typical of the responses of a low socioeconomic group. Further exploration of this notion is warranted.

Secondly, one must consider the educational level of the adolescents and adults in the sample. The 132 adjectives on the MAACL-Today are reported by Zuckerman and Lubin (1965) to be at or below an eighth grade reading level. The instrument was originally published for widespread use almost 30 years

ago, and the possibility exists that 8th grade reading level is different today. It seems likely that some of the words on the instrument are outdated, and therefore unfamiliar or not commonly used by young people today. Although subjects were told that they could ask the researcher if they did not know what a word meant (a list of dictionary definitions was used to provide definitions), the only words consistently asked about were 'amiable', 'indignant', and 'vexed'. It is possible that mothers guessed at the meaning of words.

Thirdly, it is possible that the ethnicity of the researchers (Caucasian) was a barrier to communication with the African-American subjects. Perhaps a desire for socially acceptable responses prevailed and the subjects felt obligated to put checkmarks in the boxes of the more positive words, thinking that these words described how new mothers should feel. In addition, researchers in white laboratory coats in a hospital setting may be perceived as authority figures. As previously discussed in Chapter Four, the observed affect often differed considerably from the descriptive words checked on the MAACL-Today (Zuckerman & Lubin, 1965).

It is important at this time to mention several points for consideration. First of all, the initially desired sample size for the study was 90, and the final sample size of 53 was considerably smaller. It is possible that differences in postpartum psychologic reaction would have been detected if the sample size had been larger.

Secondly, the timing of the data collection merits attention. Data were collected in the hospitals when infants were usually between 24 and 48 hours old. Although information on the ages of the infants was not collected, the researchers went to the study sites every day to insure identifying any eligible subjects. Thus, infants were unlikely to be older than 48 hours. Women who have just delivered a baby are in a unique state of delight with their infant. A discussion of these conceptual considerations appears in the companion thesis by Kristen Oelman (1994). As this research was a collaborative effort, the companion thesis shares data and analysis with this thesis. In addition, it is possible that hormonal changes accompanying delivery affect maternal psychologic reaction.

Thirdly, Zuckerman and Lubin (1965) maintained that the MAACL-Today Scale is ideally administered more than once, in order to detect change. As it was administered only once in this study, it is not known if the women were more or less stressed after the birth of the baby in comparison to another point in time.

Fourthly, consideration of Erikson's (1963) developmental framework used in this study is warranted. It is possible that the mothers who participated in this study come from backgrounds so dissimilar to the people on which Erikson based his theories that his framework may not be applicable. Erikson himself believed that each culture furthers different ways of development, in part because a society is most functional when

its adults share a common character structure (Berger, 1983). Some would consider African-American society to exist within a larger society.

Finally, one must consider the socioeconomic and cultural background of the sample. As discussed in Chapter Two, it is possible that there is no particular stressful significance attached to having a low birthweight infant by the African-American mothers studied. Many of these women may have been around small babies many times and may be comfortable caring for them. The adolescent group may not be cognizant of the difficulty in caring for an infant and going to school, simply by virtue of their age and developmental level. As many adolescents were living in their family of origin, it is presumed that childcare help would be close at hand. Many of the women in the study indicated their concern about other things, and perhaps these worries took precedence over worry about a low birthweight baby.

It may be important to note here that the incredible amount of research concerning adolescent pregnancy and parenting, may indicate a desire on the part of society to find problems, stresses, or psychologic reactions in this population. The birth of a baby, even a low birthweight baby, may not be a stressor to an African-American woman of low socioeconomic status. As discussed in Chapter 2 of this thesis, numerous cultural factors appear to influence the high birthrate in this group. Furthermore, the greatest influence

on postpartum psychologic reaction to the birth of any weight infant in this group may be the familiar stress of living at a low socioeconomic status.

Conclusions and Implications

Based on the findings of this study, and cognizant of the sample size and possible instrument validity problems, the following conclusions were drawn:

1. No significant difference in stressful postpartum psychologic reaction existed between African-American adolescent and adult mothers of low birthweight infants in this sample.

2. There was no stress imposed by the birth of an infant weighing between 1500 and 2500 grams on adolescent or adult African-American mothers of low socioeconomic status in this sample.

Based on the findings of this study, the following implications were apparent:

1. The MAACL-Today Scale may not have adequate validity for measuring stressful postpartum psychologic reaction in low socioeconomic status African-American adolescent and adult mothers. The construct of postpartum stress needs further exploration in this population.

2. There is no evidence that postpartum nurses need to tailor stress reduction intervention to maternal developmental level.

Recommendations for Further Study

The following recommendations for future research are offered:

1. This study should be replicated with larger, randomly selected samples from numerous study sites.

2. Qualitative research should be done to better understand the phenomenon of postpartum psychologic stress in low income African-American women.

3. The use of other instruments should be explored and, if such instruments should be found to be inadequate, appropriate instruments should be developed.

4. Contemporary models for assessing an individual's developmental level should be developed and evaluated. In particular, models should be culturally, ethnically and socioeconomically sensitive.

REFERENCES

Abernathy, V., Robbins, D., Abernathy, G.L., Grunebaum, H., & Weiss, J.L. (1975). Identifying women at risk for unwanted pregnancy. American Journal of Psychiatry, 132, 1027-1030.

Alan Guttmacher Institute (1981). Teenage pregnancy: The problem that hasn't gone away. New York: Alan Guttmacher Institute.

Bane, M.J. (1986). Household composition and poverty. In S.H. Danziger (Ed.), Fighting poverty: What works and what doesn't, (pp. 209-231), Cambridge, MA: Harvard University Press.

Barnard, K. (1978). Nursing child assessment satellite training (NCAST) learning resource manual. Seattle: University of Washington School of Nursing.

Barrera, M. (1981). Social support in the adjustment of pregnant adolescents: Assessment issues. In B. Gottlieb (Ed.), Social networks and social support (pp. 69-94). Beverly Hills, CA: Sage Publications.

Barrett, J. (1979). Stress and mental disorders. New York: Raven Press.

Barthe, R.B., Shincke, S.P., & Maxwell, J.S. (1983). Psychological correlates of teenage motherhood. Journal of Youth and Adolescense, 12(6), 471-487.

Bayley, N. (1969). Bayley scales of infant development. New York: The Psychological Corporation.

Becker, P.T. (1987). Sensitivity to infant development and behavior: A comparison of adolescent and adult single mothers. Research in Nursing and Health, 10, 119-127.

Berger, K.S. (1983). The developing person through the life span. New York: Worth Publishers, Inc.

Blumberg, N. (1980). Effects of neonatal risk, maternal attitudes, and cognitive style on early postpartum adjustments. The Journal of Abnormal Psychology, 89, 139-150.

Bradley, R.H., & Caldwell, B.M. (1984). 174 children: A study of the relationship between home enviroment and cognitive development during the first five years. In A.W. Gottfried (Ed.), Home environment and early cognitive development (pp. 2-56). Orlando, FL: Academic Press.

Brandt, P.A., & Weinert, C. (1981). The PRQ - a social support measure. Nursing Research, 30, 277-280.

Brooten, D., Gennaro, S., Brown, L., Butts, P., Gibbons, A., Bakewell-Sachs, S., & Kumar, S. (1988). Anxiety, hostility, and depression in mothers of preterm infants. Nursing Research, 37(4), 213-216.

Brown, L., Brooten, D., Kumar, S., Butts, P., Finkler, S., Bakewell-Sachs, S., Gibbons, A., & Delivoria-Papadapoulos, M. (1989). A sociodemographic profile of families of low birthweight infants. Western Journal of Nursing Research, 11(5), 520-532.

Brown, H., Adams, R., & Kellam, S. (1981). A longitudinal study of teenage motherhood and symptoms of distress: The Woodlawn Community Epidemiological Project. In R. Simmons (Ed.) Research in community mental health, (Vol. 2). Greenwich, CT: JAI press.

Burton, L.M. (1990). Teenage childbearing as an alternative life course strategy in multigenerational black families. Human Nature, 1, 123-143.

Butnarescu, G. (1982). Developmental aspects of human reproduction. In P. Hill, & P. Humphrey, (Eds.), Human growth and development throughout life (pp. 49-102). New York: John Wiley & Sons.

Campbell, D., & Stanley, J. (1963). Experimental and quasi-experimental designs for research. Boston: Houghton-Miflin Company.

Caplan, G., Mason, E., & Kaplan, D. (1965). Four studies of crisis in parents of prematures. Community Mental Health Journal, 1, 149-161.

Cattel, R., & Scheier, I. (1963). Handbook for the IPAT Anxiety Scale. Champaign, Ill: Institute for Personality and Ability Testing.

Chilman, C. (1980). Social and psychological research concerning adolescent childbearing; 1970-1980. Journal of Marriage and the Family, 42, 67-69.

Cohen, J. (1988). Statistical power analysis for the behavioral science (2nd. ed.). Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.

Colletta, N.D., & Gregg, C.H. (1981). Adolescent mothers' vulnerability to stress. Journal of Nervous and Mental Diseases, 169, 50-54.

Crnic, K., Greenberg, M., Ragozin, A. Robinson, N., & Basham, R. (1983). Effects of stress and social support on mothers of premature and full-term infants. Child Development, 54, 209-217.

Crnic, K., Greenberg, M., Robinson, N., & Ragozin, A. (1984). Maternal stress and social support: Effects on the mother-infant relationship from birth to eighteen months. American Journal of Orthopsychiatry, 54, 224-235.

DeLissovoy, V. (1973). Child care by adolescent parents. Children Today, 2, 22-25.

Dohrenwend, B., & Dohrenwend, B. (1974). Stressful life events: Their nature and effects. New York: Wiley & Sons.

Duncan, G.J., & Hoffman, S.D. (1988). The use and effects of welfare: A survey of recent evidence. Social Services Review, 62,238-257.

Egeland, B., Breitenbucher, M., & Rosenberg, D. (1980). Prospective study of the significance of life stress in the etiology of child abuse. Journal of Consulting and Clinical Psychology, 48, 195-205.

Elliot, G., & Eisdorfer, C. (1982). Stress and human health. New York: Springer Publishing Company.

Elster, A.B., McAnarney, E.R., & Lamb, M.E. (1983). Parental behavior of adolescent mothers. Pediatrics, 71, 494-503.

Erikson, E. (1963). Childhood and society (2nd. ed.). New York: W.W. Norton & Company.

Erikson, E. (1968). Identity, youth and crisis. New York: W.W. Norton & Company.

Field, T.M., Widmayer, S.M., Stringer, S., & Ignatoff, W.A. (1980). Teenage, lowerclass black mothers and their preterm infants: An intervention of developmental follow-up. Child Development, 51, 426-436.

Fisher, S.M. (1984). The psychodynamics of teenage pregnancy and motherhood. In M. Sugar (Ed.) Adolescent parenthood. Jamaica, N.Y.: Spectrum Publications, Inc.

Fitts, W.H. (1964). Tennesse self concept scale manual. Nashville: Counselor Recordings and Tests.

Fontana, V. (1980). Child abuse: Prevention in the teenage parent. New York State Journal of Medicine, 80, 53-56.

Franklin, D.L. (1992). Early childbearing patterns among African-Americans: a socio-historical perspective. In M.K. Rosenheim & M.F. Testa (Eds.), Early parenthood and coming of age in the 1990s (pp. 55-70). New Brunswick: Rutgers University Press.

Furstenberg, Jr., F. (1976). Unplanned parenthood: The social consequences of teenage childbearing. New York: Free Press.

Furstenberg, Jr.,F., Hughes, M.E., & Brooks-Gunn, J. (1992). The next generation: The children of teenage mothers grow up. In M.K. Rosenheim & M.F. Testa (Eds.), Early parenthood and coming of age in the 1990s (pp. 113-135). New Brunswick, NJ: Rutgers University Press.

Gennaro, S. (1988). Postpartal anxiety and depression in mothers of premature infants. Nursing Research, 37(2), 82-85.

Gennaro, S., York, R., & Brooten, D. (1990). Anxiety and depression in mothers of low birthweight and very low birthweight infants: Birth through 5 months. Issues in Comprehensive Pediatric Nursing, 13, 97-109.

Gennaro, S., Zukowsky, K., Brooten, D., Lowell, L., & Visco, A. (1990). Concerns of mothers of low birthweight infants. Pediatric Nursing, 16(5), 459-462.

Gennaro, S., & Stringer, M. (1991). Stress and health in low birthweight infants: A longitudinal study. Nursing Research, 40(5), 308-311.

Gennaro, S., Brooten, D., Roncoli, M., & Kumar, S. (1993). Stress and health outcomes among mothers of low birthweight infants. Western Journal of Nursing Research, 15(1), 97-113.

Gibbs,J.T. (1992). The social context. In M.K. Rosenheim and M.F. Testa (Eds.). Early parenthood and coming of age in the 1990s (pp. 71-88) New Brunswick: NJ.

Hamburg, B.A. (1986). Subsets of adolescent mothers: Developmental bio-medical, and psychosocial issues. In J. Lancaster & B. Hamburg, (Eds.), School-age pregnancy and parenthood: Biosocial dimensions, (pp. 15-36), New York: Aldine de Gruyter.

Hardy, J., Welcher, D., & Dallas, J. (1978). Long-range outcome of adolescent pregnancy. Clinical Obstetrics and Gynecology, 21, 1215-1232.

Hayworth, J., Little, B., Carter, S., Raptopoulos, T., Priest, R., & Sandler, M. (1980). A predictive study of postpartum depression: Some predisposing characteristics. British Journal of Medical Psychology, 53, 161-167.

Holt, J., & Johnson, S. (1991). Developmental tasks: A key to reducing teenage pregnancy. Journal of Pediatric Nursing, 10(3), 191-196.

Institute of Medicine, Committee to Study the Prevention of Low Birthweight. (1985). Preventing Low Birthweight. Washington, D.C.: National Academy Press.

Jarrett, G. (1982). Childrearing patterns of young mothers: Expectations, knowledge, and practices. Maternal-Child Nursing, 7, 119-124.

Jeffcoate, J., Humphrey, M., & Lloyd, J. (1979). Disturbance in parent-child relationship following preterm delivery. Developmental Medicine and Child Neurology, 21, 344-352.

Kemp, V., Sibley, D., & Pond, E. (1990). A comparison of adolescent and adult mothers on factors affecting maternal role attainment. Maternal-Child Nursing Journal, 19(1), 63-75.

Levine, L., Garcia-Coll, C.T., & Oh, W. (1985). Determinates of mother-infant interaction in adolescent mothers. Pediatrics, 75(1), 23-29.

Levy, J. (1980). Vulnerable children: Parents' perspectives and the use of medical care. Pediatrics, 65, 956-963.

Lubin, B., Gardner, S., & Roth, A. (1975). Patterns of mood and somatic symptoms during pregnancy. Psychosomatic Medicine, 37, 136-146.

Lubin, B., Zuckerman, M., Hanson, P., Armstrong, A., Rinck, C., & Seever, M. (1986). Reliability and validity of the Multiple Affect Adjective Checklist-Revised. Journal of Psycho-Pathology and Behavioral Assessment, 8, 103-117.

McLanahan, S., & Adams, J. (1987). Parenthood and psychological well-being. Annual Review of Immunology, 5, 237-257.

McLanahan, S., & Bumpass, L. (1988). Intergenerational consequences of family disruption. American Journal of Sociology, 94(1), 130-152.

McCormick, M. (1985). The contribution of low birthweight to infant mortality and childhood morbidity. The New England Journal of Medicine, 312(2), 82-90.

Medoff-Cooper, B. (1986). Temperment in very low birthweight infants. Nursing Research, 35, 139-143.

Mercer, R. (1977). Nursing care for patients at risk. Thorofare, NJ: Charles B. Slack, Inc.

Mercer, R. (1979). Perspectives on adolescent health care. Philadelphia: J.B. Lippincott Company.

Mercer, R. (1985). The process of maternal role attainment over the first year. Nursing Research, 34(4), 198-204.

Mercer, R. (1986). First-time motherhood: Experiences form teens to forties. New York: Springer Publishing Company.

Mercer, R. (1990). Parents at risk. New York: Springer Publishing Corporation.

Minde, K., Whitelaw, A., Brown, B., & Fitzhardinge, P. (1983). Effects of neonatal complication in premature infants on early parent-infant interaction. Developmental Medicine and Child Neurology, 25, 763-777.

Mintz, S., & Kellogg, S. (1988). Domestic revolutions: A social history of American family life. New York: Free Press.

Moynihan, D.P. (1965). The Negro family: The case for national action. Washington, D.C.: Office of Policy Planning and Research, U.S. Department of Labor.

Munro, B.H., Visintainer, M.A., & Page, E.B. (1986). Statistical methods for health care research. Philadelphia: J.B. Lippincott Company.

National Center for Health Statistics. (1980). Teenage childbearing: U.S., 1976-79 Supplement 1980. Monthly Vital Statistics Report, 25(10), 11-12.

National Center for Health Statistics, (1991). Advance report of final natality statistics, 1989. Monthly Vital Statistics Report, 40(8), 1-56.

Nelson, W., Gumlak, J., & Politano, P. (1986). MMPI personality differences in various populations of the unwed mother. Journal of Clinical Psychology, 42(1), 114-119.

Norr, K.F., & Roberts, J.E. (1991). Early maternal attachment behaviors of adolescent and adult mothers. Journal of Nurse-Midwifery, 36(6), 334-341.

Oelman, K. (1994). Stressful postpartum psychologic reaction in adult and adolescent African-American mothers of low birthweight infants. Unpublished master's thesis, Texas Woman's University, Denton, Tx.

Polit, D.F., & Hungler, B.P. (1991). Nursing research: Principles and methods (4th ed.). Philadelphia: J.B. Lippincott & Company.

Pond, E., & Kemp, V. (1992). A comparison between adolescent and adult women in prenatal anxiety and self-confidence. Maternal-Child Nursing Journal, 20(1), 11-20.

Protinsky, H., Sporakowski, M., & Atkins, P. (1982). Identity formation: Pregnant and non-pregnant adolescents. Adolescense, 17(65), 73-80.

Raines, T.G. (1991) Family-focused primary prevention of adolescent pregnancy. In S.S. Humenick & N.N. Wilkerson (Eds.), Adolescent pregnancy: Nursing perspectives on prevention. (pp. 87-103). White Plains: March of Dimes Foundation.

Randolph, A., & Gesche, M. (1986). Black adolescent pregnancy: Prevention and management. Journal of Community Health, 2(1), 11-18.

Rich, O.J. (1990). Maternal-infant bonding in homeless adolescents and their infants. Maternal-Child Nursing Journal, 19(3), 195-210.

Rickel, A.U. (1989). Teenage pregnancy and parenting. New York: Hemisphere Publishing Corporation.

Ruff, C. (1987). How well do adolescents mother? Maternal-Child Nursing Journal, 12, 249-253.

Salkind, N. (1981). Theories of human development (2nd. ed.). New York: John Wiley & Sons.

Sandler, H.M. (1979). Effects of adolescent pregnancy on mother-infant relationships: A transcultural model. Progress report to the National Institute of Child Health and Human Development (No. 1-HD-62860). Washington, D.C.: U.S. Department of Health, Education and Welfare.

Sarason, I.G., Johnson, J.H., & Siegel, J.M. (1978). Assessing the impact of life changes: Development of the Life Experiences Survey. Journal of Consulting and Clinical Psychology, 46, 932-946.

Scheiner, A., Sexton, M., Rockwood, J., Sullivan, D., & Davis, H. (1985). The vulnerable child syndrome: Fact and theory. Developmental and Behavioral Pediatrics, 6, 298-301.

Schorr, L.B. & Schorr, D. (1989). Within our reach: Breaking the cycle of disadvantage. New York: Doubleday.

Spielberger, C., Gorsuch, R., & Lushene, R. (1970). Manual for the state-trait anxiety inventory. Palo Alto: Consulting Psychologists Press.

SPSS, Inc. (1988). SPSS-X user's guide. (3rd ed.). Chicago: SPSS, Inc.

Stemp, P.S., Turner, R.J., & Noh, S. (1986). Psychological distress in the postpartum period: The significance of social support. Journal of Marriage and the Family, 48, 271-277.

Trause, M., & Kramer, L. (1983). The effects of premature birth on parents and their relationship. Developmental Medicine and Child Neurology, 25, 459-465.

U.S. Department of Commerce. (1992). Statistical Abstract of the United States, (112 ed.). Washington, D.C.:U.S. Department of Commerce.

Velsor-Friedrich, B. (1992). Poverty: Its effects on children and their families. Journal of Pediatric Nursing, 7(6), 412-13.

VonWindeguth, B., & Urbano, R. (1989). Teenagers and the mothering experience. Pediatric Nursing, 15(5), 517-20.

Ware, J. (1976). Scales for measuring general health perceptions. Health Services Research, 11, 396-415.

Washington, V. (1988). The black mother in the United States: History, research and issues. In B. Birns & D.F. Hay (Eds.), The different faces of motherhood. New York: Plenum Press.

Williams, C.W. (1991). Black teenage mothers: Pregnancy and child rering from their perspective. Lexington,MA: Lexington Books.

Young, M. (1987). Parenting during mid-adolescence: A review of developmental theories and parenting behaviors Maternal-Child Nursing Journal,17(1), 1-12.

Zabin, L.S., & Hayward, S.C. (1993). Adolescent sexual behavior and childbearing. Newbury park, CA: Sage Publications.

Zabin, L.S., Hirsch, M.B., & Boscia, J.A. (1990). Differential characteristics of adolescent pregnancy test patients: Abortion, childbearing and negative test groups. Journal of Adolescent Health Care, 11, 107-113.

Zongker, C.E. (1977). The self-concept of pregnant adolescent girls. Adolescence, 12(48), 477-488.

Zuckerman, M. (1960). The development of an affect adjective checklist for the measurement of anxiety. Journal of Consulting Psychology, 24,(5), 457-462.

Zuckerman, M. & Lubin, B. (1965). Manual for the multiple affect adjective check list. San Diego: EDITS.

Appendix A

Institutional Review Board Approvals

TEXAS WOMAN'S UNIVERSITY
DENTON DALLAS HOUSTON
HUMAN SUBJECTS REVIEW COMMITTEE
1130 M. D. Anderson Blvd., Houston, Texas 77030 713/794-2109

MEMORANDUM

TO: KRISTEN OELMAN & LAURIE BRADSHAW

FROM: HSRC

DATE: June 15, 1993

SUBJECT: HSRC Application

Proposal Title: Stressful Post Partum Psychologic Reactions in Adolescent and Adult African American Mothers of Low Birthweight Infants.

Your application to the HSRC has been reviewed and **approved.**

This approval lasts for 1 year. If your study extends beyond that time you must notify the Human Subjects Review Committee.

REMEMBER TO PROVIDE COPIES OF THE SIGNED INFORMED CONSENT TO ME WHEN THE STUDY HAS BEEN COMPLETED. GRADUATION MAY BE BLOCKED UNLESS CONSENTS ARE RETURNED.

Thank you for your patience in awaiting the committee's decision. The committee extends its best wishes for a productive and very successful project. Should you have any further questions about your application, please contact me at 794-2109.

Anne Young, Ed.D.
Chairperson

TEXAS WOMAN'S UNIVERSITY
DENTON DALLAS HOUSTON
HUMAN SUBJECTS REVIEW COMMITTEE - HOUSTON CENTER

HSRC APPROVAL FORM

Name of Investigator(s): Kristen Oelman and Laurie Bradshaw

Social Security Number(s): 224-64-6205 558-25-8050

Name of Research Advisor(s): Sandra K. Goodnough Hanneman, RN, PhD

Address: College of Nursing
Texas Woman's University
1130 MD Anderson Blvd, Houston, TX 77030-2897

Dear: Ms. Oelman and Ms. Bradshaw:

Your Study entitled: Stressful Postpartum Psychologic Reactions in Adolescent and Adult African-American Mothers of Low Birthweight Infants.

(The applicant must complete the top portion of this form.)

has been reviewed by the Human Subjects Review Committee - Houston Center and it appears to meet our requirements in regard to protection of the individual's rights.

Please be reminded that both the University and the Department of Health and Human Services regulations typically require that signatures indicating informed consent be obtained from all human subjects in your study. These are to be filed with the Human Subjects Review Committee Chairman. Any exception to this requirement is noted below. Furthermore, according to HHS regulations, **another review by the HSRC is required if your project changes or if it extends beyond one year from this date of approval.**

Any special provisions pertaining to your study are noted below:

_____ Add to informed consent form: "I understand that the return of my questionnaire constitutes my informed consent to act as a subject in this research."

_____ The filing of signatures of subjects with the Human Subjects Review Committee is not required.

_____ Other see attached sheet.

__X__ No special provisions apply.

Sincerely,

Anne Young

Anne Young, EdD
Chairperson, HSRC - Houston Center

6/15/93
Date

HSRC 1991-92

TEXAS WOMAN'S UNIVERSITY
DENTON DALLAS HOUSTON
HUMAN SUBJECTS REVIEW COMMITTEE • HOUSTON CENTER

HUMAN SUBJECTS REVIEW COMMITTEE REPORT FORM

Applicant's Name: Kristen Oelman and Laurie Bradshaw

Social Security Number: 224-64-6205 558-25-8050

Proposal Title: Stressful Postpartum Psychologic Reactions in Adolescent and Adult African-American Mothers of Low Birthweight Infants.

(Applicant must complete top portion of this form.)

Comments:

6-15-93
Date

Disapprove Approve

Disapprove Approve

Disapprove Approve

Disapprove Approve

Disapprove Approve

HARRIS COUNTY HOSPITAL DISTRICT

STRICT ADMINISTRATION
2525 HOLLY HALL
HOUSTON, TEXAS 77054
746-5400

MUNITY HEALTH PROGRAMS
2525 HOLLY HALL
HOUSTON, TEXAS 77054
746-5855

SERVICE CENTER
5656 KELLEY
HOUSTON, TEXAS 77026
636-5650

P.O. BOX 66769 - HOUSTON, TEXAS 77266

BEN TAUB GENERAL HOSPITAL
1504 TAUB LOOP
HOUSTON, TEXAS 77030
793-2000

LYNDON B. JOHNSON GENERAL HOSPITAL
5656 KELLEY
HOUSTON, TEXAS 77026
636-5000

QUENTIN MEASE COMMUNITY HOSPITAL
MARTIN LUTHER KING CLINIC
3601 N. MACGREGOR WAY
HOUSTON, TEXAS 77004
525-4700

July 26, 19993

Kristen Oelman
Laurie Bradshaw
Texas Woman's University
1130 M.D. Anderson
Houston, Texas 77040

Dear Ms Oelman and Ms Bradshaw,

Your study "Stressful Postpartum Psychologic Reactions in Adolescent and Adult African American Black Livebirth Infants" has been approved by the Harris County Hospital District Research Committee for implementation at Lyndon B. Johnson General Hospital. Prior to beginning your research, please provide the research committee with a daytime phone at which you may be reached.

Your contact persons at Lyndon B. Johnson are:

Moranda Dansby Director Neonatal Child Health 636-5720	and	Linda Sahwani Nurse Manager Postpartum 636-5860

Approval is still pending at Ben Taub General Hospital. At the completion of your study please submit a copy of your findings to the Harris County Hospital District Research Committee.

Sincerely,

Jean Dols

Jean Dols, RN, MS, CNAA
Chairperson
Harris County Hospital District
Research Committee
Lyndon B. Johnson General Hospital
5656 Kelley
Houston, Texas 77026

cc: Moranda Dansby
Linda Sahwani

HARRIS COUNTY HOSPITAL DISTRICT

DISTRICT ADMINISTRATION
2525 HOLLY HALL
HOUSTON, TEXAS 77054
746-5400

COMMUNITY HEALTH PROGRAMS
2525 HOLLY HALL
HOUSTON, TEXAS 77054
746-5855

SERVICE CENTER
5656 KELLEY
HOUSTON, TEXAS 77026
636-5650

P.O. BOX 66769 - HOUSTON, TEXAS 77266

BEN TAUB GENERAL HOSPITAL
1504 TAUB LOOP
HOUSTON, TEXAS 77030
793-2000

LYNDON B. JOHNSON GENERAL HOSPITAL
5656 KELLEY
HOUSTON, TEXAS 77026
636-5000

QUENTIN MEASE COMMUNITY HOSPITAL
MARTIN LUTHER KING CLINIC
3601 N. MACGREGOR WAY
HOUSTON, TEXAS 77004
525-4700

STUDY: Stressful Postpartum Psychologic Reactions of Adult and Adolescent African-American Mothers of Low Birthweight Infants

RESEARCHER: Laurie Bradshaw and Kristen Oelman

This study has been recommended for implementation at Harris County Hospital District pending the approval of the listed Department Heads/Administrator.

HCHD Research Committee
Jean Dols, RNC, MS, CNAA
Chairperson
7/2/93
Date

Nursing Services
Ben Taub General
Hospital
Robbie Frazier, RN, MS
Vice President of Nursing
08/03/93
Date

Operative Services
Ben Taub General
Hospital
Robert Casipe, RN
Vice President
08/04/93

Ben Taub General
Hospital
Michael Bullard
Senior Vice President
Date

Research.Jea/#6

"Caring is what we do best"

Appendix B

Informed Consent Form

TEXAS WOMAN'S
UNIVERSITY

DENTON DALLAS HOUSTON

COLLEGE OF NURSING
Houston Center
1130 M D Anderson Blvd
Houston, TX 77030-2897
Phone: 713 794-2100

Consent to Participate in Research

Stressful Postpartum Psychologic Reactions of Adult and Adolescent African-American Mothers of Low Birthweight Infants

I am being asked to participate in a research study called, "Stressful postpartum psychologic reactions of adult and adolescent African-American mothers of low birthweight infants." The study is being done with 90 mothers by Kristen Oelman and Laurie Bradshaw, who are graduate nursing students at Texas Woman's University. The purpose of the study is to find out what kind of stress is experienced by adult mothers and adolescent mothers of babies who weighed less than five pounds and eight ounces at birth.

I understand that if I participate in the study, I am agreeing to the following:

(1) Laurie or Kristen will review my medical record in the hospital to obtain information about my baby.

(2) Kristen or Laurie will ask me some questions about me and my baby. These questions will take less than five minutes to answer.

(3) Laurie or Kristen will hand me a list of 132 words, such as "angry," "happy," and "sad." I will check off the words that describe how I feel. I understand that this will take about 5 minutes of my time.

I understand that the possible risks to me from being in the study are:

(1) I may not understand some of the words read to me. If I don't understand some words, I can ask Kristen or Laurie to explain the words.

(2) I may get tired of responding to the list of words. If I wish to rest for a few minutes, I can tell the researcher to take a break. If I decide that I want to stop responding to the words, I can tell the researcher and the interview will be over.

(3) My name might be known through my participation in the study. This risk will be reduced because Laurie and Kristen will use a code number instead of my name on the work list. The findings will be reported for everyone who is in the study, not for individual people like me. Also, I understand that Kristen and Laurie will keep the research forms in a locked place and, when the study is over, the forms will be destroyed.

(over)

It is unlikely that I will suffer in any way from participating in this study. However, I understand that neither Texas Woman's University, Lyndon B. Johnson Hospital, or Ben Taub Hospital can provide free care or compensation for any injury that might happen because of my participation in this study.

If I have any questions about the study or my rights as a participant is this study, I may contact Laurie Bradshaw, Kristen Oelman, or their professor Dr. Sandra Hanneman, at 794-2147.

I understand that these is no benefit to me from participating in this study, but the findings may help nurses better help mothers of babies who are less than five pounds and eight ounces at birth.

The researchers are not conducting any other study in which I can participate. My questions have been answered by one of the researchers. If I have more questions about this study, I may call Kristen Oelman, Laurie Bradshaw, or Dr. Hanneman at 794-2147 during office hours.

I volunteer to be in this study and understand that I can drop out of the study at any time I want. I have received a copy of this consent form.

_____ _____

Signature of participant Date

_____

Witness

Appendix C

Demographic Data Form

Demographic Data Form

Stressful Postpartum Psychologic Reactions

___ Study No.

___ Age

___ Marital Status: (1) single (2) married (3) separated
(4) divorced (5) widowed (6) other _____

___ Living Arrangements: (1) living alone
(2) living with spouse/boyfriend
(3) living with mother/father
(4) living with other family _____
(5) living with friend(s)
(6) other _____

___ Highest grade of regular school completed:

Grade School								High School				College				Graduate School					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22

___ How many other children do you have?

___ Including this baby, how many children will be living at home with you?

___ Type of delivery: (1) vaginal (2) cesarean

____ Infant's birthweight: _____ gms. _____ lbs. _____ ozs.

___ Apgar Score 1 minute

___ Apgar Score 5 minutes

___ Who will care of the baby the most in an average day?

(1) myself
(2) my mother
(3) my sister
(4) my grandmother
(5) any other relative
(6) my friend
(7) my spouse/boyfriend
(8) a neighbor
(9) Day care
(10) Other

___ MAACL Today Score

Appendix D

Multiple Affect Adjective Checklist-Today Scale

Appendix E

Permission to use MAACL-Today Scale

EdITS
P. O. Box
San Diego, CA 92167
(619) 222-1666
Fax # 226-1666

FAX COVER SHEET

Date: JUNE 16, 1993 Time: 10:30 AM

Company: TWU - Houston Center PHONE

Attention: KRISTEN OELMAN/LAURIE BRADSHAW FAX (713) 794-2328

From: LEIGH

Number of pages including cover sheet 2

Message

I RECEIVED YOUR FAX REGARDING PERMISSION TO USE THE MAACL. WE GIVE YOU PERMISSION TO USE THE TEST WHEN WE SELL IT TO YOU. FOLLOWING IS AN ORDER FORM YOU NEED TO FILL OUT TO PLACE YOUR ORDER. ON THE VERY BOTTON, PLEASE NOTE A SPACE FOR YOUR SPONSORING PROFESSOR'S SIGNATURE. THAT IS REQUIRED BEFORE WE CAN SEND THE MATERIALS TO YOU. YOUR FAX STATES THAT A COPY OF THE PROSPECTUS IS ENCLOSED. WE RECEIVED NOTHING EXCEPT YOUR LETTER.

IF YOU NEED ANY FURTHER INFORMATION PLEASE DO NOT HESITATE TO CONTACT ME.